



**NOTICE OF REGULAR MEETING AGENDA
LANCASTER CITY COUNCIL
MUNICIPAL CENTER CITY COUNCIL CHAMBERS
211 N. HENRY STREET, LANCASTER, TEXAS**

Monday, December 10, 2012 - 7:00 PM

CALL TO ORDER

INVOCATION: Ministerial Alliance

PLEDGE OF ALLEGIANCE: Deputy Mayor Pro Tem James Daniels

CITIZENS' COMMENTS:

At this time citizens who have pre-registered before the call to order will be allowed to speak on any matter other than personnel matters or matters under litigation, for a length of time not to exceed three minutes. No Council action or discussion may take place on a matter until such matter has been placed on an agenda and posted in accordance with law.

CONSENT AGENDA:

Items listed under the consent agenda are considered routine and are generally enacted in one motion. The exception to this rule is that a Council Member may request one or more items to be removed from the consent agenda for separate discussion and action.

- C1. Consider approval of minutes from the City Council Regular Meeting held November 12, 2012.
- C2. Consider a resolution approving the terms and conditions of an Interlocal Agreement by and between the City of Carrollton, Texas, and the City of Lancaster for the cooperative purchase of goods and services.
- C3. Consider a resolution authorizing the award of Bid 2012-51 for concrete repairs and approving the terms and conditions of the agreements with Admiral Construction Company as the primary and C&M Concrete as the secondary for concrete repairs to miscellaneous streets and roadways.
- C4. Consider a resolution authorizing the award of Bid 2012-45 to Landmark Structures I L.P., in an amount not to exceed \$3,245,000 for the construction of the new 2.0 MG Elevated Storage Tank generally located approximately 135 linear feet west of Katrina Drive on Wintergreen Road.
- C5. Consider a resolution approving the terms and conditions of the City owned terminal building commercial lease, Suite 730-202, at the Lancaster Regional Airport.
- C6. Consider a resolution approving the terms and conditions of the City owned T-Hangar non-commercial lease from building 700 at the Lancaster Regional Airport.

C7. Consider resolutions authorizing the Request for Qualifications (RFQ) 2012-38 for Professional Engineering Services for various projects to consulting engineers:

- A. Birkhoff, Hendricks & Carter (BHC); and
- B. Teague Nall & Perkins (TNP); and
- C. Bury & Partners

to serve and support engineering needs for various projects within the City on an as needed basis; and authorizing the City Manager to execute agreements pursuant to approval.

C8. Consider a resolution authorizing the award of RFQ 2012-41 for Geotechnical Engineering and Materials Testing Services to Alliance Geotechnical Group for various projects

PUBLIC HEARING:

9. Conduct a public hearing and consider an ordinance amending Ordinance No. 2006-04-13, the Lancaster Development Code and Zoning Map of the City of Lancaster, as amended, by granting a change in zoning from LI, Light Industrial, to PD, Planned Development, on approximately 59.04 acres of land in the City of Lancaster, Dallas County, Texas, and more generally located on the north side of Daniieldale Road approximately 1,340+ feet west of the intersection of Houston School Road and Daniieldale Road.

ACTION:

10. Consider a resolution authorizing the award of Bid 2011-13 to Northstar Construction, Inc. for construction of the Lancaster Community Park Amphitheater through the Texas Parks and Wildlife Department (TPWD) Grant Project #50-000413 in an amount not to exceed \$325,351.

ADJOURNMENT

EXECUTIVE SESSION: The Council reserves the right to convene into executive session on any posted agenda item pursuant to Section 551.071(2) of the TEXAS GOVERNMENT CODE to seek legal advice concerning such subject.

ACCESSIBILITY STATEMENT: The Municipal Center is wheelchair-accessible. For sign interpretive services, call the City Secretary's office, 972-218-1311, or TDD 1-800-735-2989, at least 72 hours prior to the meeting. Reasonable accommodation will be made to assist your needs.

Certificate

I hereby certify the above Notice of Meeting was posted at the Lancaster City Hall on December 7, 2012 @ 3:00 p.m. and copies thereof were hand delivered to the Mayor, Mayor Pro-Tempore, Deputy Mayor Pro-Tempore and Council members.



Dolle K. Downe, TRMC
City Secretary

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 1

Consider approval of minutes from the City Council Regular Meeting held November 12, 2012.

Background

Attached for your review and consideration are minutes from the:

- City Council Regular Meeting held November 12, 2012

Submitted by:

Dolle K. Downe, City Secretary

MINUTES

LANCASTER CITY COUNCIL MEETING OF NOVEMBER 12, 2012

The City Council of the City of Lancaster, Texas, met in Regular session in the Council Chambers of City Hall on November 12, 2012 at 7:00 p.m. with a quorum present to-wit:

Councilmembers Present:

Mayor Marcus E. Knight
Walter Weaver
Stanley Jaglowski
Mayor Pro Tem Marco Mejia
Deputy Mayor Pro Tem James Daniels
LaShonjia Harris
Nina Morris

City Staff Present:

Opal Mauldin Robertson, City Manager
Alicia Oyedele, Assistant to the City Manager
Amber Dorsey, Community Relations Assistant
Dori Lee, Human Resources Director
Ed Brady, Economic Development Director
Larry Flatt, Police Chief
Thomas Griffith, Fire Chief
Sean Johnson, Parks and Recreation Director
Rona Stringfellow Govan, Managing Director Public Works / Development Services
Robert E. Hager, City Attorney
Dolle Downe, City Secretary

Call to Order:

Mayor Knight called the meeting to order at 7:00 p.m. on November 12, 2012.

Invocation:

Deacon Jones with World Harvest Ministries gave the invocation.

Pledge of Allegiance:

Mayor Knight led the pledge of allegiance.

Recognition:

Mayor Knight announced that Boy Scout Troop 279 was unable to attend the meeting and will reschedule.

Proclamation

Mayor Knight read the proclamation for America Recycles Day, proclaiming November 15, 2012 as America Recycles Day in the City of Lancaster.

Presentation

Mayor Knight presented Graduation Certificates to members of the recent Civic Leadership Academy, congratulating members on successful completion of the program. Certificates were presented to: Hannah Dearman, Nahsechay Dipo, Paul Dominique Sr., Antonio Elliot, Franceal Haynes, Michal Kraushaar, Donna Lee, Angela McCowan, Diana Melcher, Mary Ryan, Felice Sanders, Cyrus Stiggers, Lorraine James-Stiggers, Celestine Todd, Debra Washington, Sharon Scott, Regina Wren, and Shanda Mallory. Also graduating but unable to attend were Laura Grady-Johnson, Marcus Slaughter and Venita Harris.

Citizens Comments:

Sarah Mendoza and Gloria Lockhart, were present representing the American Cancer Society, Relay for Life event. Ms. Mendoza briefly outlined the twelve hour, overnight relay event, stating that money collected through the relay helps the American Cancer Society fight cancer through research, prevention and patient support services and noted that the 2013 Relay for Life for the Best Southwest cities is in May 2013 at the Duncanville High School Panther Stadium. Ms. Lockhart spoke of her efforts as a volunteer and the services provided to patients by the American Cancer Society. Together they called on the City and City Council to support the Relay for Life event.

Mrs. Willie Molix, 1429 Cardigan, brought greetings from the Auxiliary Society of the St. Francis of Assisi Catholic Church and provided information about their upcoming Annual Bazaar; thanked councilmembers for their service to the community.

Nahsechay Dipo, 1327 Pennsylvania Avenue, did not wish to speak but wanted her concerns regarding 18 wheeler traffic on Houston School Road noted for the record.

Consent Agenda:

City Secretary Downe read the consent agenda.

- C1. Consider approval of minutes from the City Council Regular Meeting held October 22, 2012 [with correction on page 3, start of fifth paragraph, revise to read Mayor Pro Tem Mejia instead of Councilmember Morris].**
- C2. Consider a resolution approving the terms and conditions of a lease agreement for copiers through an Interlocal Agreement with Texas Cooperative Purchasing Network (TCPN) (Contract R5008).**
- C3. Consider a resolution approving Amendment 4 to the meal services contract, [bid #09-004] with The Paper Plate in an amount not to exceed \$4.25 per meal for senior services.**

MOTION: Mayor Pro Tem Mejia made a motion, seconded by Councilmember Jaglowski, to approve consent items C1, C2 and C3. The vote was cast 7 for, 0 against.

- 4. Consider a resolution approving an amendment to the Economic Development Incentive Agreement by and between the City of Lancaster, LEDC and Argent ProLogis, LLC and authorizing the City Manager to execute said amendment.**

MOTION: Mayor Pro Tem Mejia made a motion, seconded by Councilmember Jaglowski, to approve a resolution approving an amendment to the Economic Development Incentive Agreement by and between the City of Lancaster, LEDC and Argent-ProLogis, LLC as presented. The vote was cast 7 for, 0 against.

5. **Consider a resolution ratifying the actions of the Board of Directors of the Lancaster Economic Development Corporation approving an Incentive Grant to Quaker Sales & Distribution, Inc. and authorizing LEDC to enter into a formal incentive agreement with the Company.**

MOTION: Mayor Pro Tem Mejia made a motion, seconded by Deputy Mayor Pro Tem Daniels, to approve a resolution ratifying the actions of the Board of Directors of the Lancaster Economic Development Corporation approving an Incentive Grant to Quaker Sales & Distribution, Inc. and authorizing LEDC to enter into a formal incentive agreement with the Company as presented. The vote was cast 7 for, 0 against.

6. **Consider a resolution authorizing the City Manager to execute an economic development agreement pursuant to Chapter 380, Texas Local Government Code by and between the City of Lancaster, Texas and Quaker Sales & Distribution, Inc. establishing a grant in an amount equal to fifty percent (50%) of business personal property taxes paid on certain described property for a period of ten years.**

Mayor Pro Tem Mejia confirmed that this facility, at 1.2 million square feet, is one the largest distribution centers in the Metroplex and that the City of Lancaster is making DFW history with this deal which clearly puts Lancaster on the map as here for business. Mayor Pro Tem Mejia congratulated ProLogis and Quaker and stated that he was very excited about this deal for Lancaster.

MOTION: Deputy Mayor Pro Tem Daniels made a motion, seconded by Councilmember Weaver, to approve a resolution authorizing the City Manager to execute an economic development agreement by and between the City of Lancaster, Texas and Quaker Sales & Distribution, Inc. establishing a grant in an amount equal to fifty percent (50%) of business personal property taxes paid on certain described property for a period of ten years as presented. The vote was cast 7 for, 0 against.

7. **Consider a resolution authorizing the City Manager to execute an economic development agreement pursuant to Chapter 380, Texas Local Government Code by and between the City of Lancaster and Quaker Sales & Distribution, Inc. authorizing a ninety percent (90%) grant on certain taxable real property and improvements for a period of ten years.**

MOTION: Mayor Pro Tem Mejia made a motion, seconded by Deputy Mayor Pro Tem Daniels, to approve a resolution authorizing the City Manager to execute an economic development agreement by and between the City of Lancaster and Quaker Sales & Distribution, Inc. authorizing a ninety percent (90%) grant on certain taxable real property and improvements for a period of ten years as presented. The vote was cast 7 for, 0 against.

MOTION: Councilmember Morris made a motion, seconded by Deputy Mayor Pro Tem Daniels, to adjourn. The vote was cast 7 for, 0 against.

The meeting was adjourned at 7:33 p.m.

ATTEST:

APPROVED:

Dolle K. Downe, City Secretary

Marcus E. Knight, Mayor

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 2

Consider a resolution approving the terms and conditions of an Interlocal Agreement by and between the City of Carrollton, Texas, and the City of Lancaster for the cooperative purchase of goods and services.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Financially Sound City Government

Background

Staff requests approval of an Interlocal Agreement with the City of Carrollton for the purpose of purchasing items in a cost effective and expeditious manner. Each product or service has been bid and awarded based on Texas statutes.

Considerations

- **Operational** – An Interlocal Agreement allows staff to utilize other agencies' formally bid contracts. Each entity's formal bid process meets the requirements set forth in the statutes, including advertising, M/WBE participation, reference checks, verification of insurance and bonding, if required by specifications, and any other requirement.

All legal requirements are verified by the Purchasing Agent prior to recommendation or use of a contract.

Use of cooperative contracts allows Purchasing to meet the needs of the City departments on a timely basis through the use of contracts that are in place. These contracts save time associated with issuing bids or in obtaining quotes. Additionally, savings is achieved through aggregate volumes either through joint bidding opportunities or by addressing the cooperative language within the specifications to the vendors.

- **Legal** – The use of cooperative agreements is in accordance with Section 791.001 of the Texas Government Code and 271.101 of the Texas Local Government Code.
- **Financial** – The use of cooperative bids through Interlocal Agreements provides a savings to the City, both in funding and time by allowing staff to use contracts that have already been bid by another entity.
- **Public Information** - There are no public information requirements.

Options/Alternatives

1. City Council may approve the resolution as presented.
2. City Council may reject the resolution and direct staff.

Recommendation

Staff recommends approving the interlocal agreement as submitted.

Attachments

- Resolution
 - Interlocal Agreement
-

Submitted by:

Dawn Berry, Purchasing Agent

RESOLUTION NO. 2012

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, APPROVING THE TERMS AND CONDITIONS OF AN INTERLOCAL AGREEMENT BY AND BETWEEN THE CITY OF CARROLLTON AND THE CITY OF LANCASTER FOR THE COOPERATIVE PURCHASE OF GOODS AND SERVICES; AUTHORIZING THE CITY MANAGER TO EXECUTE THE AGREEMENT; DESIGNATING THE CITY MANAGER OR DESIGNEE AS THE OFFICIAL REPRESENTATIVE; REPEALING ALL RESOLUTIONS IN CONFLICT; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Lancaster, Texas, pursuant to the authority granted under Section 791 of the Texas Government Code and Section 271 of the Texas Local Government Code, desires to participate in the cooperative agreement; and

WHEREAS, the City Council of the City of Lancaster, Texas, is of the opinion that participation in the agreement will be highly beneficial to the taxpayers through the efficiencies and potential savings to be realized;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That the terms and conditions of the Interlocal Agreement, attached hereto and incorporated herein by reference as Exhibit "A", having been reviewed by the City Council of the City of Lancaster and found to be acceptable and in the best interests of the City of Lancaster and its citizens are hereby in all things approved.

SECTION 2. That the City Council of the City of Lancaster, Texas hereby authorizes the City Manager to execute said agreement.

SECTION 3. That any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 4. That should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 5. That this Resolution shall take effect immediately from and after its passage, and it is duly resolved.

DULY PASSED AND APPROVED by the City Council of the City of Lancaster, Texas, on this the 10th day of December, 2012.

ATTEST:

APPROVED:

Dolle K. Downe, City Secretary

Marcus E. Knight, Mayor

APPROVED AS TO FORM:

Robert E. Hager, City Attorney

INTERLOCAL AGREEMENT

This Interlocal Agreement ("the Agreement") is made and entered into by and between the CITY OF CARROLLTON, TEXAS, a municipal corporation (CARROLLTON) and the CITY OF LANCASTER, TEXAS (LANCASTER), each organized and existing under the laws of the State of Texas, and acting by, through and under the authority of their respective governing bodies and officials in accordance with the "Interlocal Cooperation Act," Chapter 791 of the Texas Government Code (the "Act").

WHEREAS, the City of Carrollton and the City of Lancaster are both governmental entities engaged in the purchase of goods and services, which is a recognized governmental function; and

WHEREAS, CARROLLTON and LANCASTER wish to enter into this Agreement to set forth the terms and conditions upon which they may purchase various goods and services commonly utilized by each entity; and

WHEREAS, participation in this Agreement will be highly beneficial to the taxpayers of CARROLLTON and LANCASTER through the anticipated savings to be realized and is of mutual concern to the parties; and

WHEREAS, CARROLLTON and LANCASTER have current funds available to satisfy any fees owed pursuant to this Agreement.

NOW THEREFORE, CARROLLTON and LANCASTER, for and in consideration of the premises and the mutual covenants set forth in this Agreement, and pursuant to the authority granted by the governing bodies of each of the parties hereto, do hereby agree as follows:

- 1 CARROLLTON and LANCASTER may cooperate in the purchase of various goods and services commonly utilized by the parties, where available and applicable, and may purchase goods and services from vendors under present and future contracts;
- 2 CARROLLTON and LANCASTER shall each be individually responsible for payments directly to the vendor and for the vendor's compliance with all conditions of delivery and quality of the purchased items under such contracts. CARROLLTON and LANCASTER shall each make their respective payments from current revenues available to the paying party;
- 3 The Agreement shall be in full force and effect until terminated by either party;
- 4 Notwithstanding anything herein to the contrary, participation in this Agreement may be terminated by either party upon thirty (30) days written notice to the other party;
- 5 The undersigned officer and/or agents of the parties hereto are duly authorized officials and possess the requisite authority to execute this Agreement on behalf of the parties;

6. This Agreement may be executed separately by the parties, each of which shall be deemed an original and all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement to be effective upon execution and dating by each party. This Agreement shall be effective from the last date signed on this Agreement by a participating party.

APPROVED BY:

CITY OF LANCASTER

Opal Mauldin Robertson
City Manager

Date

APPROVED BY:

CITY OF CARROLLTON

Leonard Martin
City Manager

Date

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 3

Consider a resolution of the City Council of the City of Lancaster, Texas authorizing the award of bid 2012-51 for concrete repairs and approving the terms and conditions of the agreements with Admiral Construction Company as the primary and C&M Concrete as the secondary for the concrete repairs to miscellaneous streets and roadways.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Sound Infrastructure

Background

The City of Lancaster Public Works and Development Services Department; Streets and Stormwater divisions has the responsibility to maintain over 225 miles of street and roadways. City staff maintains and repairs many of these in fractures as possible but occasionally will find it necessary to contract repairs due to time, equipment, and personnel restraints or the size of projects.

This is a request to award contract agreements to support and assist the Streets and Stormwater Division with concrete contract services on various city projects. Staff has acquired bids for repairs per square foot and/or square yard basis to assist as needed. Admiral Construction Company and C&M Concrete were the two low bids, each having low bids in different types of repairs. Staff recommends approval of contracts to both companies.

Considerations

- **Operational** – The contracts will be administered by Public Works and Development Services - Streets and Stormwater Division. Contractors will be notified of needed repairs and will be required to give the City of Lancaster a total cost for repairs based on their bid documents. All other City of Lancaster departments will also be able to use these contractors as needed.
- **Legal** - Bids were prepared and processed in accordance with all local and state purchasing statutes by the City of Lancaster Purchasing Division. Bids were advertised on September 13 and 20, 2012. A pre-bid meeting was held on September 24 and bids were opened on October 11, 2012. Four bids were received and none of the respondents are M/WBE certified. The City Attorney has approved the resolution as to form.

- **Financial** – Repairs under this contract are funded in the Street division maintenance line item. There is \$100,000 allocated in this line item.
- **Public Information** – Residents and businesses affected by proposed repairs will be notified by city staff before construction begins. There are no other public information requirements.

Options/Alternatives

1. City Council may approve the resolution as presented.
2. City Council may deny the resolution and direct staff.

Recommendation

Staff recommends that City Council approve the resolution as presented.

Attachments

Resolution
Concrete Repairs-Annual Contract Bids-Admiral Concrete Company
Concrete Repairs-Annual Contract Bids-C&M Concrete

Submitted by:

Allen Carsner, Streets and Stormwater Superintendent
Dawn Berry, Purchasing Agent

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, APPROVING THE TERMS AND CONDITIONS OF BID AGREEMENTS BY AND BETWEEN ADMIRAL CONSTRUCTION COMPANY AS PRIMARY, AND C&M CONCRETE AS SECONDARY, AND THE CITY OF LANCASTER FOR MISCELLANEOUS REPAIR WORK TO STREETS AND ROADWAYS, AS LISTED IN THE AGREEMENTS; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID AGREEMENTS; PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of Lancaster has determined, after due consideration that it is in the best interest of the City of Lancaster to approve the bid agreements with Admiral Construction Company, and C&M Concrete for the miscellaneous repair work to streets and roadways; and

WHEREAS, the City of Lancaster shall fund this Agreement and shall provide payments upon the completion of contracted repairs to Admiral Construction Company or C&M Concrete, as outlined in the agreements.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That the City Council hereby approves and accepts the terms and conditions of the Agreements with Admiral Construction Company, and C&M Concrete, attached hereto and incorporated herein by reference as: Exhibit "A" – 2012-51 Concrete Repairs.

SECTION 2. That the City Manager of the City of Lancaster, Texas is hereby authorized to execute the agreements in substantial compliance as depicted in Exhibit "A".

SECTION 3. Any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 4. Should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 5. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

DULY PASSED and approved by the City Council of the City of Lancaster, Texas, on this the 10th day of December 2012.

ATTEST:

Dolle K. Downe, City Secretary

APPROVED:

Marcus E. Knight, Mayor

APPROVED AS TO FORM:

Robert E. Hager, City Attorney

City of Lancaster, Texas

Standard Fixed Price Construction Agreement

This Agreement is made by and between the City of Lancaster, Texas, a home-rule municipality (hereinafter referred to as the "Owner") and [Admiral Construction Co.](#), (hereinafter referred to as the "Contractor") for [Concrete Repairs \(2012-51\)](#), (hereinafter referred to as the "Project"), the Owner and the Contractor hereby agree as follows:

ARTICLE I: CONTRACT & CONTRACT DOCUMENTS

1.1 THE CONTRACT

1.1.1 The Contract between the Owner and the Contractor, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it.

1.2. THE CONTRACT DOCUMENTS

1.2.1 The Contract Documents consist of this Agreement, the Invitation to Bid, Requirements and Instructions to Bidders, the Specifications, the Drawings, all Change Orders and Field Orders issued hereafter, any other amendments hereto executed by the parties hereafter, together with the following (if any): **NONE**

Documents not enumerated in this Paragraph 1.2.1 are not Contract Documents and do not form part of this Contract.

1.3 ENTIRE AGREEMENT

1.3.1 This Contract, together with the Contractor's performance, maintenance, and payment bonds for the Project, all General Conditions, Special Conditions, Plans and Specifications, and Addenda attached thereto, constitute the entire and exclusive agreement between the Owner and the Contractor with reference to the Project. Specifically, but without limitation, this Contract supersedes any bid documents and all prior written or oral communications, representations and negotiations, if any, between the Owner and Contractor not expressly made a part hereof.

1.4 NO PRIVACY WITH OTHERS

1.4.1 Nothing contained in this Contract shall create, or be interpreted to create, privity or any other contractual agreement between the Owner and any person or entity other than the Contractor.

1.5 INTENT AND INTERPRETATION

1.5.1 The intent of this Contract is to require complete, correct and timely execution of the Work. Any Work that may be required, implied or inferred by the Contract Documents, or any one or more of them, as necessary to produce the intended result shall be provided by the Contractor for the Contract Price.

1.5.2 This Contract is intended to be an integral whole and shall be interpreted as internally consistent. What is required by any one Contract Document shall be considered as required by the Contract.

1.5.3 When a word, term or phrase is used in this Contract, it shall be interpreted or construed, first, as defined herein; second, if not defined, according to its

generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

1.5.4 The words "include", "includes", or "including", as used in this Contract, shall be deemed to be followed by the phrase, "without limitation".

1.5.5 The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of this Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of this Contract.

1.5.6 Words or terms used as nouns in this Contract shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.5.7 The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the Shop Drawings, the Product Data, and any Plans and Specifications, and shall give written notice to the Owner of any inconsistency, ambiguity, error or omission which the Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance or the express or implied approval by the Owner of the Contract Documents, Shop Drawings, or Product Data shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. By the execution hereof, the Contractor acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not rely upon any representation or warranties by the Owner concerning such documents as no such representation or warranties have been or are hereby made. Further, the Contractor represents and warrants that it has had a sufficient opportunity to inspect the Project site and assumes any and all responsibility for inadequacies or ambiguities in the plans, drawings or specifications as well as for latent conditions of the site where the work is to be performed.

1.5.9 Neither the organization of any of the Contract Documents into divisions, sections, paragraphs, articles, (or other categories), nor the organization or arrangement of the Design, shall control the Contractor in dividing the Work or in establishing the extent or scope of the Work to be performed by Subcontract

1.6 OWNERSHIP OF CONTRACT DOCUMENTS

1.6.1 The Contract Documents, and each of them, shall remain the property of the Owner. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided, however, that in no event shall Contractor use, or permit to be used, any or all of such Contract Documents on other projects without the Owner's prior written authorization.

ARTICLE II: THE WORK

2.1 The Contractor shall perform all of the Work required, implied or reasonably inferable from, this Contract.

2.2 WORK

2.2.1 The term "Work" shall mean whatever is done by or required of the Contractor to perform and complete its duties under this Contract, including the following: construction of the whole or a designated part of the Project; furnishing of any required surety bonds and insurance, and the provision or furnishing of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, permits and licenses required of the Contractor, fuel, heat, light, cooling and all other utilities as required by this Contract. The Work to be performed by the Contractor is generally described as follows:

2012-51 – Concrete Repairs–Annual Contract

A purchase order will be issue for each work order issued. All work shall be completed within the agreed upon time for each work order.

2.2.2 The Contractor shall be responsible for paying for and procuring all materials and labor and furnishing all services necessary or appropriate for the full performance of the Work and the for the full completion of the Project. All materials shall be new and materials and workmanship shall be of good quality. Upon request, the Contractor shall furnish satisfactory proof of the type, kind, and quality of materials.

ARTICLE III: CONTRACT TIME

3.1 TIME AND LIQUIDATED DAMAGES

3.1.1 The Contractor shall commence the Work within 10 days of receipt of a purchase order. The parties acknowledge that time is of the essence in the performance of the terms of this Contract. The term "calendar days" shall mean any and all days of the week or month, no days being excepted. It is contemplated by the parties that the progress of the Work may be delayed by certain conditions beyond the control of the parties; these delays have been contemplated by the parties and considered in the time allotted for performance specified herein and includes, but is not limited to delays occasioned on account of adverse weather, temporary unavailability of materials, shipment delays, and the

presence and potential interference of other contractors who may be performing work at the Project site unrelated to this agreement.

The number of calendar days from the date on which the Work is permitted to proceed, through the date set forth for Substantial Completion, shall constitute the "Contract Time".

3.1.2 The Contractor shall pay the Owner the sum of \$120.00 per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Substantial Completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that Substantial Completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

3.1.3 In the event that the Contractor achieves certification of substantial completion prior to the scheduled completion date, the Owner shall pay to the Contractor the sum of \$0.00 per day for each calendar day that substantial completion is certified in advance of the scheduled completion date.

3.1.4 No claim shall be made by the Contractor to the Owner, and no damages, costs or extra compensation shall be allowed or paid by the Owner to the Contractor for any delay or hindrance from any cause in the progress or completion of the Work or this Contract. The Contractor's sole remedy in the event of any delay or hindrance shall be to request time extensions by written change orders as provided for hereinafter. Should the Contractor be delayed by an act of the Owner, or should the Owner order a stoppage of the Work for sufficient cause, an extension of time shall be granted by the Owner by written authorization upon written application, which extension shall not be unreasonably denied, to compensate for the delay.

3.1.5 The Owner shall have the authority to suspend the Work wholly or in part for such period or periods of time as it may deem appropriate due to unsuitable conditions considered unfavorable for the proper prosecution of the Work or for the failure of the Contractor to carry out instructions from the Owner or Owner's representative. During any period in which the Work is stopped or during which any of the Work is not actively in progress for any reason, Contractor shall properly protect the site and the Work from damage, loss or harm.

3.2 SUBSTANTIAL COMPLETION

3.2.1 "Substantial Completion" shall mean that stage in the progression of the Work when the Work is sufficiently complete in accordance with this Contract that the Owner can enjoy beneficial use or occupancy of the Work and can utilize the Work for its intended purpose, even though minor miscellaneous work and/or adjustment may be required.

3.3 TIME IS OF THE ESSENCE

3.3.1 All limitations of time set forth in the Contract Documents are of the essence of this Contract.

ARTICLE IV: CONTRACT PRICE

4.1 THE CONTRACT PRICE

4.1.1 The Owner shall pay, and the Contractor shall accept, as full and complete payment for all of the Work required herein, at the unit prices attached hereto as [Exhibit A: Contractor Response](#).

ARTICLE V: PAYMENT OF THE CONTRACT PRICE

5.1 SCHEDULE OF VALUES

5.1.1 Within ten (10) calendar days of the effective date hereof, the Contractor shall submit to the Owner a Schedule of Values allocating the Contract Price to the various portions of the Work. The Contractor's Schedule of Values shall be prepared in such form, with such detail, and supported by such data as the Owner may require to substantiate its accuracy. The Contractor shall not imbalance the Schedule of Values nor artificially inflate any element thereof. The violation of this provision by the Contractor shall constitute a material breach of this Contract. The Schedule of Values shall be used only as a basis for the Contractor's Applications for Payment and shall only constitute such basis after it has been acknowledged and accepted in writing by the Owner.

5.2 PAYMENT PROCEDURE

5.2.1 The Owner shall pay the unit Price to the Contractor as provided below.

5.2.2 **PROGRESS PAYMENTS** - Based upon the Contractor's Applications for Payment submitted to the Owner and upon Certificates for Payment subsequently issued to the Owner, the Owner shall make progress payments to the Contractor on account of the Contract Price.

5.2.3 On or before the 25th day of each month after commencement of the Work, the Contractor shall submit an Application for Payment for the period ending the 15th day of the month to the Owner in such form and manner, and with such supporting data and content, as the Owner may require. Therein, the Contractor may request payment for ninety percent (90%) of that portion of the Contract Price properly allocable to Contract requirements properly provided, labor, materials and equipment properly incorporated in the Work, less the total amount of previous payments received from the Owner. Such Application for Payment shall be signed by

the Contractor and shall constitute the Contractor's representation that the Work has progressed to the level for which payment is requested in accordance with the Schedule of Values, that the Work has been properly installed or performed in full compliance with this Contract, and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the Owner will review the Application for Payment and may also review the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by this Contract. The Owner shall determine and certify to the Owner the amount properly owing to the Contractor. The Owner shall make partial payments on account of the Contract Price to the Contractor within thirty (30) days following the Owner's receipt and approval of each Application for Payment. The amount of each partial payment shall be the amount certified for payment by the Owner less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by this Contract.

5.2.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which payments have been received from the Owner shall be free and clear of liens, claims, security interest or other encumbrances in favor of the Contractor or any other person or entity whatsoever.

5.2.5 The Contractor shall promptly pay each Subcontractor out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which such Subcontractor is entitled. In the event the Owner becomes informed that the Contractor has not paid a Subcontractor as herein provided, the Owner shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such Subcontractor as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

5.2.6 No progress payment, nor any use or occupancy of the Project by the owner, shall be interpreted to constitute an acceptance of any Work not in strict accordance with this Contract.

5.3 WITHHELD PAYMENT

5.3.1 The Owner may decline to make payment, may withhold funds, and, if necessary, may demand the return of some or all of the amounts previously paid to the Contractor, to protect the Owner from loss because of:

- (a) defective Work not remedied by the Contractor nor, in the opinion of the Owner, likely to be remedied by the Contractor;
- (b) claims of third parties against the Owner or the Owner's property;
- (c) failure by the Contractor to pay Subcontractors or others in a prompt and proper fashion;
- (d) evidence that the balance of the Work cannot be completed in accordance with the Contract for the unpaid balance of the Contract Price,
- (e) evidence that the Work will not be completed in the time required for substantial or final completion;
- (f) persistent failure to carry out the Work in accordance with the Contract;
- (g) damage to the Owner or a third party to whom the Owner is, or may be, liable.

In the event that the Owner makes written demand upon the Contractor for amounts previously paid by the Owner as contemplated in this Subparagraph 5.3.1, the Contractor shall promptly comply with such demand. The Owner shall have no duty to third parties to withhold payment to the Contractor and shall incur no liability for a failure to withhold funds.

5.4 UNEXCUSED FAILURE TO PAY

5.4.1 If within fifteen (15) days after the date established herein for payment to the Contractor by the Owner, the Owner, without cause or basis hereunder, fails to pay the Contractor any amount then due and payable to the Contractor, then the Contractor may after ten (10) additional days' written notice to the Owner and without prejudice to any other available rights or remedies it may have, stop the Work until payment of those amounts due from the Owner have been received. Late payments shall not accrue interest or other late charges.

5.5 SUBSTANTIAL COMPLETION

5.5.1 When the Contractor believes that the Work is substantially complete, the Contractor shall submit to the Owner a list of items to be completed or corrected. When the Owner on the basis of an inspection determines that the Work is in fact substantially complete, it will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Guarantees required by the Contract shall commence on the date of Substantial Completion of the Work. The Certificate of Substantial Completion shall be submitted to the Owner

and the Contractor for their written acceptance of the responsibilities assigned to them in such certificate.

Upon Substantial Completion of the Work, and execution by both the Owner and the Contractor of the Certificate of Substantial Completion, the Owner shall pay the Contractor an amount sufficient to increase total payments to the Contractor to one hundred percent (100%) of the Contract Price less three hundred percent (300%) of the reasonable cost as determined by the Owner for completing all incomplete Work, correcting and bringing into conformance all defective and nonconforming Work, and handling all unsettled claims.

5.6 COMPLETION AND FINAL PAYMENT

5.6.1 When all of the Work is finally complete and the Contractor is ready for a final inspection, it shall notify the Owner thereof in writing. Thereupon, the Owner will make final inspection of the Work and, if the Work is complete in full accordance with this Contract and this Contract has been fully performed and will issue a final Certificate for Payment certifying that the Project is complete and the Contractor is entitled to the remainder of the unpaid Contract Price, less any amount withheld pursuant to this Contract

5.6.1.1 If the Contractor fails to achieve final completion in its Certificate of Substantial Completion, the Contractor shall pay the Owner the sum set forth hereinabove as liquidated damages per day for each and every calendar day of unexcused delay in achieving final completion beyond the date set forth herein for final completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that final completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving final completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

5.6.2 The Contractor shall not be entitled to final payment unless and until it submits to the Owner its affidavit that all payrolls, invoices for materials and equipment, and other liabilities connected with the Work for which the Owner, or the Owner's property might be responsible, have been fully paid or otherwise satisfied; releases and waivers of lien from all Subcontractors of the Contractor; consent of Surety, if any, to final payment. If any third party fails or refuses to provide a release of claim or waiver of lien as required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner to discharge any such lien or indemnify the Owner from liability.

5.6.3 The Owner shall make final payment of all sums due the Contractor within ten (10) days of the execution of a final Certificate for Payment.

5.6.4 Acceptance of final payment shall constitute a waiver of all claims against the Owner by the Contractor except for those claims previously made in writing against the Owner by the Contractor, pending at the time of final payment, and identified in writing by the Contractor as unsettled at the time of its request for final payment.

5.6.5 Under no circumstance shall Contractor be entitled to receive interest on any payments or monies due Contractor by the Owner, whether the amount on which the interest may accrue is timely, late, wrongfully withheld, or an assessment of damages of any kind.

ARTICLE VI: THE OWNER

6.1 INFORMATION, SERVICES AND THINGS REQUIRED FROM OWNER

6.1.1 The Owner shall furnish to the Contractor, at the time of executing this Contract, any and all written and tangible material in its possession concerning conditions below ground at the site of the Project.

Such written and tangible material is furnished to the Contractor only in order to make complete disclosure of such material and for no other purpose. By furnishing such material, the Owner does not represent, warrant, or guarantee its accuracy either in whole, in part, implicitly or explicitly, or at all, and shall have no liability therefore. The Owner shall also furnish surveys, legal limitations and utility locations (if known), and a legal description of the Project site.

6.1.2 Excluding permits and fees normally the responsibility of the Contractor, the Owner shall obtain all approvals, easements, and the like required for construction and shall pay for necessary assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

6.1.3 The Owner shall furnish the Contractor, free of charge, one copy of the Contract Documents for execution of the Work.

6.2 RIGHT TO STOP WORK

6.2.1 If the Contractor persistently fails or refuses to perform the Work in accordance with this Contract, or if the best interests of the public health, safety or welfare so require, the Owner may order the Contractor to stop the Work, or any described portion thereof, until the cause for stoppage has been corrected, no longer exists, or the Owner orders that Work be resumed. In such event, the Contractor shall immediately obey such order.

6.3 OWNER'S RIGHT TO PERFORM WORK

6.3.1 If the Contractor's Work is stopped by the Owner under Paragraph 6.2, and the Contractor fails within seven (7) days of such stoppage to provide adequate assurance to the Owner that the cause of such stoppage

will be eliminated or corrected, then the Owner may, without prejudice to any other rights or remedies the Owner may have against the Contractor, proceed to carry out the subject Work. In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the cost of correcting the subject deficiencies, if any. If the unpaid portion of the Contract Price is insufficient to cover the amount due the Owner, the Contractor shall pay the difference to the Owner.

ARTICLE VII: THE CONTRACTOR

7.1 The Contractor is again reminded of its continuing duty set forth in Subparagraph 1.5.7. The Contractor shall perform no part of the Work at any time without adequate Contract Documents or, as appropriate, approved Shop Drawings, Product Data or Samples for such portion of the Work. If the Contractor performs any of the Work knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Owner, the Contractor shall bear responsibility for such performance and shall bear the cost of correction.

7.2 The Contractor shall perform the Work strictly in accordance with this Contract.

7.3 The Contractor shall supervise and direct the Work using the Contractor's best skill, effort and attention. The Contractor shall be responsible to the Owner for any and all acts or omissions of the Contractor, its employees and others engaged in the Work on behalf of the Contractor.

7.3.1 The Contractor shall give adequate attention to the faithful prosecution of the Work and the timely completion of this Contract, with authority to determine the manner and means of performing such Work, so long as such methods insure timely completion and proper performance.

7.3.2 The Contractor shall exercise all appropriate means and measures to insure a safe and secure jobsite in order to avoid and prevent injury, damage or loss to persons or property.

7.4 WARRANTY

7.4.1 The Contractor warrants to the Owner that all labor furnished to progress the Work under this Contract will be competent to perform the tasks undertaken, that the product of such labor will yield only first-class results, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Contract, and that the Work will be of good quality, free from faults and defects and in strict conformance with this Contract. All Work not conforming to these requirements may be considered defective.

7.5 The Contractor shall obtain and pay for all permits, fees and licenses necessary and ordinary for the Work. The Contractor shall comply with all lawful requirements applicable to the Work and shall give and maintain any and all notices required by applicable law pertaining to the Work.

7.6 SUPERVISION

7.6.1 The Contractor shall employ and maintain at the Project site only competent supervisory personnel. Absent written instruction from the Contractor to the contrary, the superintendent shall be deemed the Contractor's authorized representative at the site and shall be authorized to receive and accept any and all communications from the Owner.

7.6.2 Key supervisory personnel assigned by the Contractor to this Project are as follows:

NAME	FUNCTION

So long as the individuals named above remain actively employed or retained by the Contractor, they shall perform the functions indicated next to their names unless the Owner agrees to the contrary in writing. In the event one or more individuals not listed above subsequently assume one or more of those functions listed above, the Contractor shall be bound by the provisions of this Subparagraph 7.6.2 as though such individuals had been listed above.

7.7 The Contractor, within fifteen (15) days of commencing the Work, shall submit to the Owner for their information, the Contractor's schedule for completing the Work. The Contractor's schedule shall be revised no less frequently than monthly (unless the parties otherwise agree in writing) and shall be revised to reflect conditions encountered from time to time and shall be related to the entire Project. Each such revision shall be furnished to the Owner. Failure by the Contractor to strictly comply with the provisions of this Paragraph 7.7 shall constitute a material breach of this Contract.

7.8 The Contractor shall continuously maintain at the site, for the benefit of the owner, one record copy of this Contract marked to record on a current basis changes, selections and modifications made during construction. Additionally, the Contractor shall maintain at the site for the Owner, Product Data, Samples and other similar required submittals. Upon final completion of the Work, all of these record documents shall be delivered to the Owner.

7.9 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

7.9.1 Shop Drawings, Product Data, Samples and other submittals from the Contractor do not constitute Contract Documents. Their purpose is merely to demonstrate the manner in which the Contractor intends to implement the Work in conformance with information received from the Contract Documents.

7.9.2 The Contractor shall not perform any portion of the Work requiring submittal and review of Shop Drawings, Product Data or Samples unless and until such submittal shall have been approved by the Owner.

7.10 CLEANING THE SITE AND THE PROJECT

7.10.1 The Contractor shall keep the site reasonably clean during performance of the Work. Upon final completion of the Work, the Contractor shall clean the site and the Project and remove all waste, rubbish, temporary structures, and other materials together with all of the Contractor's property therefrom. Contractor shall dispose of all refuse at a Texas Natural Resource Conservation Commission approved landfill. The Contractor shall further restore all property damaged during the prosecution of the Work and shall leave the site in a clean and presentable condition. No additional payment shall be made by the Owner for this work, the compensation having been considered and included in the contract price.

7.11 ACCESS TO WORK AND INSPECTIONS

7.11.1 The Owner shall have access to the Work at all times from commencement of the Work through final completion. The Contractor shall take whatever steps necessary to provide access when requested. When reasonably requested by the Owner, the Contractor shall perform or cause to be performed such testing as may be necessary or appropriate to insure suitability of the jobsite or the Work's compliance with the Contract requirements.

7.12 INDEMNITY AND DISCLAIMER

7.12.1 OWNER SHALL NOT BE LIABLE OR RESPONSIBLE FOR, AND SHALL BE INDEMNIFIED, DEFENDED, HELD HARMLESS AND RELEASED BY CONTRACTOR FROM AND AGAINST ANY AND ALL SUITS, ACTIONS, LOSSES, DAMAGES, CLAIMS, OR LIABILITY OF ANY CHARACTER, TYPE, OR DESCRIPTION, INCLUDING ALL EXPENSES OF LITIGATION, COURT COSTS, AND ATTORNEY'S FEES FOR INJURY OR DEATH TO ANY PERSON, OR INJURY OR LOSS TO ANY PROPERTY, RECEIVED OR SUSTAINED BY ANY PERSON OR PERSONS, INCLUDING THE CONTRACTOR, OR PROPERTY, ARISING OUT OF, OR OCCASIONED BY, DIRECTLY OR INDIRECTLY, THE PERFORMANCE OF CONTRACTOR UNDER THIS AGREEMENT, INCLUDING CLAIMS AND DAMAGES ARISING IN WHOLE OR IN PART FROM THE NEGLIGENCE OF OWNER, WITHOUT, HOWEVER, WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE OWNER UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW. THE PROVISIONS OF THIS INDEMNIFICATION ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND NOT INTENDED TO CREATE OR GRANT ANY RIGHTS, CONTRACTUAL OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY. IT IS THE EXPRESSED INTENT OF THE PARTIES TO THIS AGREEMENT THAT THE INDEMNITY PROVIDED FOR IN THIS CONTRACT IS AN INDEMNITY EXTENDED BY CONTRACTOR TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF THE CONTRACTOR'S AS WELL AS THE OWNER'S NEGLIGENCE, WHETHER SUCH

NEGLIGENCE IS THE SOLE OR PARTIAL CAUSE OF ANY SUCH INJURY, DEATH, OR DAMAGE.

7.12.2 The Contractor will secure and maintain Contractual Liability insurance to cover this indemnification agreement that will be primary and non-contributory as to any insurance maintained by the Owner for its own benefit, including self-insurance. In addition, Contractor shall obtain and file with Owner a Standard Certificate of Insurance evidencing the required coverage.

7.12.3 In claims against any person or entity indemnified under this Paragraph 7.12 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 7.12 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

7.13 NONDISCRIMINATION

7.13.1 The Contractor shall not discriminate in any way against any person, employee or job applicant on the basis of race, color, creed, national origin, religion, age, sex, or disability where reasonable accommodations can be effected to enable the person to perform the essential functions of the job. The Contractor shall further insure that the foregoing nondiscrimination requirement shall be made a part and requirement of each subcontract on this Project.

7.14 PREVAILING WAGE RATES

7.14.1 The Contractor shall comply in all respects with all requirements imposed by any laws, ordinances or resolutions applicable to the Project with regard to the minimum prevailing wage rates for all classes of employees, laborers, subcontractors, mechanics, workmen and persons furnishing labor and services to the Project. The City of Lancaster has adopted US Department of Labor's Davis Bacon Wage Determinations as the Prevailing Wage Rate Schedule, available to the Contractor by request, which specifies the classes and wage rates to be paid to all persons. The Contractor shall pay not less than the minimum wage rates established thereby for each class, craft or type of labor, workman, or mechanic employed in the execution of this Contract. The failure of the Contractor to comply with this requirement shall result in the forfeiture to the City of \$10.00 of a sum of not less than Sixty Dollars (\$60.00) for each person per day, or portion thereof, that such person is paid less than the prevailing rate. Upon request by the Owner, Contractor shall make available for inspection and copying its books and records, including but not limited to its payroll records, account information and other documents as may be required by the Owner to insure compliance with this provision.

7.15 JOB SITE SAFETY PRECAUTIONS

7.15.1 The Contractor shall at all times exercise reasonable precautions for the safety of its employees, laborers, subcontractors, mechanics, workmen and others on and near the jobsite and shall comply with all laws, ordinances, regulations, and standards of federal, state and local safety laws and regulations. The Contractor shall provide such machinery guards, safe walk-ways, ladders, bridges, and other safety devices as may be necessary or appropriate to insure a safe and secure jobsite and shall require its subcontractors to comply with this requirement. The Contractor shall immediately comply with any and all safety requirements imposed by the Owner during the progress of the Work.

7.16 WARNING DEVICES AND BARRICADES

7.16.1 The Contractor shall furnish and maintain such warning devices, barricades, lights, signs, pavement markings, and other devices as may be necessary or appropriate or required by the Owner to protect persons or property in, near or adjacent to the jobsite, including . No separate compensation shall be paid to the Contractor for such measures. Where the Work is being conducted in, upon or near streets, alleys, sidewalks, or other rights-of-way, the Contractor shall insure the placement, maintenance and operation of any and all such warning devices as may be required by the City of Lancaster and shall do so until no longer required by the City. Such devices shall be in compliance with and conform to the manual and specifications for the uniform system of traffic control devices adopted by the Texas Department of Transportation.

7.17 PROTECTION OF UTILITIES & OTHER CONTRACTORS

7.17.1 The Contractor shall use best efforts to leave undisturbed and uninterrupted all utilities and utility services provided to the jobsite or which presently exists at, above or beneath the location where the Work is to be performed. In the event that any utility or utility service is disturbed or damaged during the progress of the Work, the Contractor shall forthwith repair, remedy or restore the utility at Contractor's sole expense.

7.17.2 The Contractor understands and acknowledges that other contractors of the Owner or of other entities may be present at the jobsite performing other work unrelated to the Project. The Contractor shall use best efforts to work around other contractors without impeding the work of others while still adhering to the completion date established herein. In the event that the Contractor's work is or may be delayed by any other person, the Contractor shall immediately give notice to the Owner and shall request a written Change Order in accordance with the procedures set forth by this Contract. The Contractor's failure to provide such notice and to request such Change Order shall constitute a waiver of any and all claims associated therewith.

ARTICLE VIII: CONTRACT ADMINISTRATION

8.1 FIELD ORDERS

8.1.1 The Owner shall have authority to order minor changes in the Work not involving a change in the Contract Price or in Contract Time and not inconsistent with the intent of the Contract. Such changes shall be effected by Field Order and shall be binding upon the Contractor. The Contractor shall carry out such Field Orders promptly.

8.2 MEDIATION

8.2.1 In the event that a dispute arises under the terms of this Contract, following an adverse determination by the Owner and proper preservation of the issue as required herein, the parties agree to submit to mediation. In such event, the parties shall agree to a designated person to serve as mediator and each party shall be responsible for payment of one-half of the total mediation fees. The parties shall submit the dispute to mediation as soon as practical and in no event later than one (1) year after the Owner's written decision on the matter. At least one designated representative of each party must attend and participate in good faith in an effort to resolve the matters in dispute.

8.2.2 In no event shall the foregoing provision justify or authorize any delay in the progress of the Work; the parties shall abide by the decision of the Owner in accomplishing the timely completion of the Project.

ARTICLE IX: SUBCONTRACTORS

9.1 DEFINITION

9.1.1 A Subcontractor is an entity which has a direct contract with the Contractor to perform a portion of the Work. No Subcontractor shall be in privity with the Owner.

9.2 AWARD OF SUBCONTRACTS

9.2.1 Upon execution of the Contract, the Contractor shall furnish the Owner, in writing, the names of persons or entities proposed by the Contractor to act as a Subcontractor on the Project. The Owner shall promptly reply to the Contractor, in writing, stating any objections the Owner may have to such proposed Subcontractor. The Contractor shall not enter into a subcontract with a proposed Subcontractor with reference to whom the Owner has made timely objection. The Contractor shall not be required to subcontract with any party to whom the Contractor has objection.

9.2.2 All subcontracts shall afford the Contractor rights against the Subcontractor which correspond to those rights afforded to the Owner against the Contractor herein, including those rights afforded to the Owner by Subparagraph 12.2.1 below. All subcontracts shall incorporate by reference the provisions hereof and shall provide that no claims, causes or demands shall be made by any Subcontractor against the Owner.

9.2.3 The Contractor shall indemnify, defend and hold harmless the Owner from and against any and all claims,

demands, causes of action, damage, and liability asserted or made against the Owner by or on behalf of any Subcontractor.

ARTICLE X: CHANGES IN THE WORK

10.1 CHANGES PERMITTED

10.1.1 Changes in the Work within the general scope of this Contract, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Contract, by Change Order or by Field Order.

10.1.2 Changes in the Work shall be performed under applicable provisions of this Contract and the Contractor shall proceed promptly with such changes.

10.2 CHANGE ORDER DEFINED

10.2.1 Change Order shall mean a written order to the Contractor executed by the Owner, issued after execution of this Contract, authorizing and directing a change in the Work or an adjustment in the Contract Price or the Contract Time, or any combination thereof. The Contract Price and the Contract Time may be changed only by written Change Order.

10.3 CHANGES IN THE CONTRACT PRICE

10.3.1 Any change in the Contract Price resulting from a Change Order shall be determined as follows: (a) by mutual agreement between the Owner and the Contractor as evidenced by (1) the change in the Contract Price being set forth in the Change Order, (2) such change in the Contract Price, together with any conditions or requirements related thereto, being initialed by both parties and (3) the Contractor's execution of the Change Order, or (b) if no mutual agreement occurs between the Owner and the Contractor, then, as provided in Subparagraph 10.3.2 below.

10.3.2 If no mutual agreement occurs between the Owner and the Contractor as contemplated in Subparagraph 10.3.1 above, the change in the Contract Price, if any, shall then be determined by the Owner on the basis of the reasonable expenditures or savings of those performing, deleting or revising the Work attributable to the change, including, in the case of an increase or decrease in the Contract Price, a reasonable allowance for direct job site overhead and profit. In such case, the Contractor shall present, in such form and with such content as the Owner or requires an itemized accounting of such expenditures or savings, plus appropriate supporting data for inclusion in a Change Order. Reasonable expenditures or savings shall be limited to the following: reasonable costs of materials, supplies, or equipment including delivery costs, reasonable costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance, reasonable rental costs of machinery and equipment exclusive of hand tools whether rented from the Contractor or others, reasonable costs of premiums for all bonds and insurance, permit fees, and sales, use or other

related to the Work, and reasonable cost of direct supervision and jobsite field office overhead directly attributable to the change.

10.3.3 If unit prices are provided in the Contract, and if the quantities contemplated are so changed in a proposed Change Order that application of such unit prices to the quantities of Work proposed will cause substantial inequity to the Owner or to the Contractor, the applicable unit prices shall be equitably adjusted.

10.4 MINOR CHANGES

10.4.1 The Owner shall have authority to order minor changes in the Work not involving a change in the Contract Price or an extension of the Contract Time and not inconsistent with the intent of this Contract. Such minor changes shall be made by written Field Order, and shall be binding upon the owner and the Contractor. The Contractor shall promptly carry out such written Field Orders.

10.5 EFFECT OF EXECUTED CHANGE ORDER

10.5.1 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order.

10.6 NOTICE TO SURETY; CONSENT

10.6.1 The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval is required by the Contractor's surety or by law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the Owner that the surety has been notified of and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

ARTICLE XI: UNCOVERING & CORRECTING WORK

11.1 UNCOVERING WORK

11.1.1 If any of the Work is covered contrary to the Owner's request or to any provisions of this Contract, it shall, if required by the Owner, be uncovered for the Owner's inspection and shall be properly replaced at the Contractor's expense without change in the Contract Time.

11.1.2 If any of the Work is covered in a manner not inconsistent with Subparagraph 11.1.1 above, it shall, if required by the Owner, be uncovered for the Owner's inspection. If such Work conforms strictly with this Contract, costs of uncovering and proper replacement shall by Change Order be charged to the Owner. If such Work does not strictly conform with this Contract, the

Contractor shall pay the costs of uncovering and proper replacement.

11.2 CORRECTING WORK

11.2.1 The Contractor shall immediately proceed to correct Work rejected by the Owner as defective or failing to conform to this Contract. The Contractor shall pay all costs and expenses associated with correcting such rejected Work, including any additional testing and inspections, and reimbursement to the Owner for the services and expenses made necessary thereby.

11.2.2 If within one (1) year after Substantial Completion of the Work any of the Work is found to be defective or not in accordance with this Contract, the Contractor shall correct it promptly upon receipt of written notice from the Owner. This obligation shall survive final payment by the Owner and termination of this Contract. With respect to Work first performed and completed after Substantial Completion, this one year obligation to specifically correct defective and nonconforming Work shall be extended by the period of time which elapses between Substantial Completion and completion of the subject Work.

11.2.3 Nothing contained in this Paragraph 11.2 shall establish any period of limitation with respect to other obligations which the Contractor has under this Contract. Establishment of the one year time period in Subparagraph 11.2.2 relates only to the duty of the Contractor to specifically correct the Work.

11.3 OWNER MAY ACCEPT DEFECTIVE OR NONCONFORMING WORK

11.3.1 If the Owner chooses to accept defective or nonconforming Work, the Owner may do so. In such event, the Contract Price shall be reduced by the greater of (a) the reasonable cost of removing and correcting the defective or nonconforming Work, and (b) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the Owner for its acceptance of defective or nonconforming Work, the Contractor shall, upon written demand from the Owner, pay the Owner such remaining compensation for accepting defective or nonconforming Work.

ARTICLE XII: CONTRACT TERMINATION

12.1 TERMINATION BY THE CONTRACTOR

12.1.1 If the Work is stopped for a period of ninety (90) days by an order of any court or other public authority, or as a result of an act of the Government, through no fault of the Contractor or any person or entity working directly or indirectly for the Contractor, the Contractor may, upon ten (10) days' written notice to the Owner, terminate performance under this Contract and recover from the Owner payment for the actual reasonable expenditures of the Contractor (as limited in Subparagraph 10.3.2 above) for all Work executed and for ma

equipment, tools, construction equipment and machinery actually purchased or rented solely for the Work, less any salvage value of any such items.

12.1.2 If the Owner shall persistently or repeatedly fail to perform any material obligation to the Contractor for a period of fifteen (15) days after receiving written notice from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance under this Contract by written notice to the Owner. In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance under this Contract for convenience pursuant to Subparagraph 12.2.1 hereunder.

12.2 TERMINATION BY THE OWNER

12.2.1 FOR CONVENIENCE

12.2.1.1 The Owner may for any reason whatsoever terminate performance under this Contract by the Contractor for convenience. The Owner shall give written notice of such termination to the Contractor specifying when termination becomes effective.

12.2.1.2 The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The Owner may direct the Contractor to assign the Contractor's right, title and interest under terminated orders or subcontracts to the Owner or its designee.

12.2.1.3 The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

12.2.1.4

(a) The Contractor shall submit a termination claim to the Owner specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the Owner. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Owner shall pay the Contractor, an amount derived in accordance with subparagraph (c) below.

(b) The Owner and the Contractor may agree to the compensation, if any, due to the Contractor hereunder.

(c) Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts:

(i) Contract prices for labor, materials, equipment and other services accepted under this Contract;

(ii) Reasonable costs incurred in preparing to perform and in performing the terminated

portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages), provided however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

(iii) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Subparagraph 12.2.1.2 of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 12.2.1 shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

12.2.2 FOR CAUSE

12.2.2.1 If the Contractor persistently or repeatedly refuses or fails to prosecute the Work in a timely manner, abandons the jobsite and fails to resume work within five (5) days of written notice thereof by the Owner, fails to grant or allow access to the jobsite by the Owner, fails to supply enough properly skilled workers, supervisory personnel or proper equipment or materials, fails to make prompt payment to Subcontractors or for materials or labor, persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a violation of a material provision of this Contract, then the Owner may by written notice to the Contractor, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

12.2.2.2 If the unpaid balance of the Contract Price does not exceed the cost of finishing the work, including compensation for the Owner's additional services and expenses made necessary thereby, such difference shall be paid by the Contractor to the Owner. This obligation for payment shall survive the termination of the Contract.

12.2.2.3 In the event the employment of the Contractor is terminated by the Owner for cause pursuant to Subparagraph 12.2.2 and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Subparagraph 12.2.1 and the provisions of Subparagraph 12.2.1 shall apply.

ARTICLE XIII: INSURANCE

13.1 CONTRACTOR SHALL MAINTAIN INSURANCE

13.1.1 The Contractor at his own expense shall purchase, maintain and keep in force during the life of this contract, adequate insurance that will protect the Contractor and/or any Additional Insured from claims which may arise out of or result from operations under this contract. The insurance required shall provide adequate protections from all claims, whether such operations be by the Contractor or by any Additional Insured or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts of any of them may be liable and from any special hazards, such as blasting, which may be encountered in the performance of this contract in the amounts as shown below in Paragraph 13.2.1.

13.1.2 The Contractor shall not commence work on any Contract in the City of Lancaster until the Contractor has obtained all the insurance required under this paragraph and such insurance has been approved by the City.

13.2 TYPES AND AMOUNTS OF INSURANCE

13.2.1. The Contractor shall furnish and maintain during the life of the contract adequate Insurance in such amounts as follows:

<u>Type of Insurance</u>	<u>Amount</u>
--------------------------	---------------

Worker's Compensation as set forth in the Worker's Compensation Act.

Commercial General Liability

\$1,000,000 Each Accident/Occurrence. The policy shall have no coverage removed by exclusions.

Limit of Insurance per Project or Owner's and Contractor's Protective Liability Insurance for the Project.

Automobile Liability

\$500,000 Combined single limit per occurrence.

13.2 INSTALLATION FLOATER

This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverage's designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under builder's risk insurance.

13.3 Builders Risk

This insurance shall be written in completed value form

and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance.

Equipment installed under this contract shall be insured under installation floater insurance when the aggregate value of the equipment exceeds \$10,000.00.

If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

13.4 ADDITIONAL INSURED / PROJECT INFORMATION

The Owner shall be named as an additional insured on the Commercial General Liability (Public), Policies furnished by the Contractor.

The project name and bid/contract number shall be listed on the certificate.

13.5 WRITTEN NOTIFICATION

Each insurance policy shall contain a provision requiring that thirty (30) days prior to expiration, cancellation, non-renewal or any material change in coverage, a notice there of shall be given by certified mail to the Purchasing Agent, City of Lancaster, PO Box 940, Lancaster, Texas, 75146.

13.6 PREMIUMS AND ASSESSMENTS

Companies issuing the insurance policies shall have no recourse against the City for payment of any premiums or assessments for any deductibles which are at the sole responsibility and risk of the Contractor.

13.7 CERTIFICATE OF INSURANCE

Proof that the insurance is in force shall be furnished to the City of Lancaster on a Standard Certificate of Insurance Form. In the event any insurance policy shown on the Certificate of Insurance has an expiration date that is prior to the completion and final acceptance of the project by the City of Lancaster, the contractor shall furnish the City proof of identical continued coverage no later than thirty (30) days prior to the expiration date shown on the Certificate of Insurance.

13.8 PRIMARY COVERAGE

The coverage's provided herein shall be primary and noncontributory with any other insurance maintained by

the City of Lancaster, Texas, for its benefit, including self insurance.

13.9 WORKER'S COMPENSATION INSURANCE COVERAGE

13.9.1 The Contractor shall:

1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;

2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;

3) provide the governmental entity prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;

4) obtain from each person providing services on a project, and provide to the governmental entity:

(A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;

7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the Texas Worker's Compensation Commission on the sample notice, without any additional words or changes:

Required Workers' Compensation Coverage

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

and

(8) contractually require each person with whom it contracts to provide services on a project, to:

(A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;

(B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;

(C) include in all contracts to provide services on the project the language in subsection (e) (3) of this rule;

(D) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(E) obtain from each other person with whom it contracts, and provide to the Contractor:

(i) a certificate of coverage, prior to the other person beginning work on the project; and

(ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(H) contractually require each other person with whom it contracts, to perform as required

sub-paragraphs (A) - (H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

ARTICLE XIV: MISCELLANEOUS

14.1 LAWS AND ORDINANCES

14.1.1 The Contractor shall at all times and in all respects observe and comply with all federal, state and local laws, ordinances, and regulations applicable to the Project and Work. The Contractor shall further insure that all Subcontractors observe and comply with said laws, ordinances and regulations.

14.2 GOVERNING LAW

14.2.1 The Contract shall be governed by the laws of the State of Texas. Venue for any causes of action arising under the terms or provisions of this Contract or the Work to be performed hereunder shall be in the courts of Dallas County, Texas.

14.3 SUCCESSORS AND ASSIGNS

14.3.1 The Owner and Contractor bind themselves, their successors, assigns and legal representatives to the other party hereto and to successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in this Contract. The Contractor shall not assign this Contract without written consent of the Owner.

14.4 SURETY BONDS

14.4.1 If the Contract Price exceeds the sum of \$25,000.00, the Contractor shall furnish separate performance and payment bonds to the Owner, according to the requirements set out in the bid documents and state statutes to guaranty full and faithful performance of the Contract and the full and final payment of all persons supplying labor or materials to the Project. Each bond required by the bid documents or state statute shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds

furnished by the Contractor shall be in form suitable to the Owner and shall be executed by a surety, or sureties, reasonably suitable to the Owner and authorized to do business in the State of Texas by the State Board of Insurance.

14.4.2 If the Contract Price exceeds the sum of \$25,000.00, the Contractor, upon execution of the Contract and prior to commencement of the Work, shall furnish to the Owner a two-year maintenance bond in the amount of one hundred percent (100%) of the Contract Price covering the guaranty and maintenance prescribed herein, written by an approved surety authorized and duly licensed to conduct business in the State of Texas. The cost of said maintenance bond shall be included in the Contractor's unit bid prices and shall be paid by the Contractor.

14.5 SEVERABILITY

14.5.1 The provisions of this Contract are herein declared to be severable; in the event that any term, provision or part hereof is determined to be invalid, void or unenforceable, such determination shall not affect the validity or enforceability of the remaining terms, provisions and parts, and this Contract shall be read as if the invalid, void or unenforceable portion had not been included herein.

14.6 AMENDMENTS

14.6.1 This Contract may be amended by the parties only by a written agreement duly executed by both parties. The failure of the Owner to object to any nonperformance or nonconforming work or to enforce any provision hereof shall in no event be regarded as or construed to be a waiver, release or modification of any term or provision in this Contract, nor shall such failure to object or enforce stop the Owner from insisting on strict compliance with this Contract or from recovering damages, costs or expenses arising as a result of such nonperformance or nonconforming work.

14.7 NOTICES

14.6.1 All notices required by this Contract shall be presumed received when deposited in the mail properly addressed to the other party or Owner at the address set forth herein or set forth in a written designation of change of address delivered to all parties.

EXECUTED in single or multiple originals, this _____ day of December, 2012.

CITY OF LANCASTER

Admiral Construction Co.

Opal Mauldin Robertson, City Manager

Type/Print Name and Title

ATTEST:

7407 University Hills Blvd.
Dallas, TX 75241

Dolle K. Downe, City Secretary

City of Lancaster, Texas (Purchasing)

Supplier Response

Bid Information		Contact Information		Ship to Information
Bid Creator	Dawn Berry Purchasing Agent	Address	PO Box 940	Address
Email	dberry@lanaster-tx.com		Lancaster, TX 75146	
Phone	(972) 218-1329	Contact	Dawn Berry	Contact
Fax	(972) 218-3621		Purchasing Agent	
			Purchasing	Department
Bid Number	2012-51 Addendum 2	Department		Building
Title	Concrete Repairs - Annual Contract	Building		
Bid Type	ITB-Weighted	Floor/Room		Floor/Room
Issue Date	09/12/2012	Telephone	(972) 218-1329	Telephone
Close Date	10/11/2012 2:00:00 PM CST	Fax	(972) 218-3621	Fax
Need by Date		Email	dberry@lanaster-tx.com	Email

Supplier Information

Company Admiral Construction Co.
 Address 7407 university hills blvd.

 Contact dallas, TX 75241
 Department Otto Scott
 Building
 Floor/Room
 Telephone 214 (287) 6929
 Fax 1
 Email ottoscott@hotmail.com
 Submitted 9/27/2012 1:31:34 PM CST
 Total \$691.30

Signature _____

Supplier Notes

Bid Notes

Miscellaneous repair work to streets and sidewalks.

Bid Activities

Date	Name	Description
9/13/2012 8:00:00 AM	Week 1	Week 1 Advertisement - Focus News
9/20/2012 8:00:00 AM	Week 2	Week 2 Advertisement - Focus News
9/24/2012 2:00:00 PM	Pre-Bid Meeting	A pre-bid meeting will be held at: <p>211 N. Henry Lancaster, TX 75146

Bid Messages

Please review the following and respond where necessary

#	Name	Note	Response
1	Addendum 2: Bonding	The projects included in this contract will generally not exceed \$50,000. Because the projects do not exceed the bond threshold identified in the statute, the bonding requirement has been removed. However, should one of the individual projects exceed \$50,000; bonds will be required in the amount of that project. <P> The Due date and time have been extended by one week.	
2	Addendum 1	I have read and understand Addendum 1.	ACK
3	One Year - 4 Renewals	Length of this contract shall be for one (1) full year with the option to renew the contract for four additional one-year periods. Both parties must be in agreement.	Agree
4	Annual Contract	This agreement will contain a fixed pricing structure for the term of the agreement. Quantities shown are estimates and NOT a commitment to buy any specific quantity. Orders will be placed on a non-exclusive, "as needed", basis. Orders placed by the City of Lancaster will be done with a purchase order.	Agreed
5	Price Increases	Prices are firm for the first year. Any price increase after year one, must be justified and documentation submitted. Price increases may not exceed the current Consumer Price Index (U) for the D/FW Region.	Agree
6	Response Term	Responses shall be valid for ninety (90) calendar days after the opening date and shall constitute an irrevocable offer to the City of Lancaster for the 90 calendar day period. The 90 calendar day period may be extended by mutual agreement of the parties.	Agree
7	Terminology	Throughout this document, the terms Contractor, Bidder, Proposer, and/or Vendor may be used interchangeably. Reference to any of these terms throughout this document should be construed by the reader as meaning any bidder for the products/services being requested (e.g., Bidder, Proposer); or the bidder who has been awarded a bid/Rfq or contract (e.g., Contractor, Vendor).	Agree
8	Payment Bond	A payment bond for any individual project exceeding \$50,000 in the amount of 100% of the individual project amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood
9	Performance Bond	A performance bond for any individual project exceeding \$50,000 in the amount of 100% of the individual project amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood

10	Maintenance Bond	A maintenance bond for any individual project exceeding \$50,000 in the amount of 100% of the individual project amount will be required from the awarded vendor.	Understood
		A sample document is attached and must be used by issuing bonding agent.	
11	Contractor Registration	The awarded vendor will be required to register with the City as a contractor. The current fee is \$100. Application is available at www.lancaster-tx.com or at Building Inspection. <BLOCKQUOTE>700 E. Main Street Lancaster, TX 75146 Hours of operation M-Th 7:00 AM - 5:30 PM.	Understood
12	Company Ownership	Is your company currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, please explain the impact both in organizational and directional terms.	No
13	Difficulties	What difficulties do you anticipate in serving the City? How do you plan to manage these and what assistance will you require from the City? Describe your firm's past performance on other contracts for the City (e.g. cost control, cost savings, schedule control).	none,none,no work has been for the City of Lancaster.
14	Electronic Payment	If you would like your payment sent electronically (EFT), please provide your accounts receivable contact information. Please provide name and email.	I dont want this service.
15	Financial Default	Is your company currently in default on any loan agreement or financing agreement with any bank, financial institution or other entity? If yes, specify date(s), details, circumstances, and prospects for resolution.	No
16	Litigation with City of Lancaster	Is your firm involved in any litigation (past or pending) with the city of Lancaster? If yes, please provide details.	No
17	NEPOTISM STATEMENT	The Bidder or Proposer or any officer, if the Bidder or Proposer is other than an individual, shall state whether Bidder or Proposer has a relationship, either by blood or marriage, with any official or employee of the City of Lancaster:	Not Related
18	Non-Performance	Identify if your firm has had any contracts terminated due to non-performance over the past five (5) years.	N/A
19	Open Records Act	All responses will be maintained confidential until award is finalized. At that time, all proposals are subject to the Open Records Act.	Agreed
20	PROPERTY TAXES	Please indicate whether you or your company, owe delinquent property taxes to the City whether an assumed name, partnership, corporation, or any other legal form.	Do Not
21	Website Address	Enter product website information	I don't have one.

22	Cooperative Agreement	Should other Government Entities decide to participate in this contract, would you, the Vendor, agree that all terms, conditions, specifications, and pricing would apply?	Yes
		If you, the Vendor checked yes, the following will apply: Government entities utilizing Inter-Governmental Contracts with the City of Lancaster will be eligible, but not obligated, to purchase materials/services under this contract(s) awarded as a result of this bid. All purchases by Governmental Entities other than the City of Lancaster will be billed directly to that Governmental Entity and paid by that Governmental Entity. The City of Lancaster will not be responsible for another Governmental Entity's debts. Each Governmental Entity will order their own material/service as needed.	
23	T&C Acknowledgement	I have read and agree to the terms and conditions of this bid.	Agreed
24	Bid Acknowledgement	Bidder affirms that they have read and understand all requirements of this proposal. Additionally, the bidder affirms that they are duly authorized to execute this contract and that this company has not prepared this proposal in collusion with any other proposer, and that the contents of this proposal as to prices, terms or conditions of said proposal have not been communicated by the bidder nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this type of business prior to the official opening of this proposal.	Agreed
25	Insurance	Vendor shall provide insurance as listed in the insurance requirements attached.	Understood
26	County	What county is your principal place of business located?	Dallas
27	Immigration	Employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the US) and aliens authorized to work in the US. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verification Form (I9). The Contractor shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment.	(No Response Required)
28	Contractor Responsibility	Keep project area in a safe and clean environment at all times during the contract period. Ensure all work is executed in accordance with OSHA (Occupational Safety and Health Administration) Requirements. Contractor must ensure that all Federal, State, and Local regulation are met.	(No Response Required)
29	Damage	Contractors are responsible for repairs caused by their negligence for any damage to public right of way and/or private property.. Repairs must be completed prior to final acceptance of job for payment.	(No Response Required)
30	Workmanship	All work and workmanship must be of good quality and adhere to all applicable laws and regulations. Contractor must possess all necessary licenses.	(No Response Required)
31	Questions	All questions shall be addressed to Dawn Berry, Purchasing Agent via email at purchasing@lanaster-tx.com.	Agree

32	Laws and ordinances	The Contractor shall at all times observe and comply with all Federal, State, and local laws, ordinances and regulations which in any manner affect the Contract or the work.	Understood
33	Work Hours	Working hours are not to begin prior to 7:00 AM or extend past 5:00 PM without prior written approval.	Understood
34	Payment Terms	The City of Lancaster's payment terms are Net 30.	Agreed
35	Road & Lane Closures	Road or lane closures must be approved in writing at least 48 hours prior to closing by the City Engineer.	Agreed
36	Change Orders	No oral statement of any person shall modify or otherwise change, or affect the terms, conditions, or specifications stated in the resulting contract. All change orders to the contract will be made in writing by the city of Lancaster.	Agreed
37	Late Submission	Bids/RFPs are not accepted after the closing date and time. The City of Lancaster is not responsible computer, mail or carrier issues/problems. The server time located in the top right corner of this software is the official clock. It is the responsibility of the user to ensure you have chosen the correct time zone for your company.	Understood
38	MODIFICATION OF A SUBMITTED BID / PROPOSALS	A proposer may modify a response electronically by logging into the e-procurement system and retracting their bid. Changes can be made up to the closing date and time. It is the vendor's responsibility to save any changes and re-submit their response.	Understood
39	AWARD OF CONTRACT	The contractor shall not commence work under these terms and conditions of the contract until all applicable Certificates of Insurance, Performance and Payment Bonds and have been approved by the City of Lancaster and he/she has received notice to proceed in writing and an executed copy of the contract from the City of Lancaster.	Agreed
40	Deviation	<p>DEVIATIONS: In the event, you the Proposer, intends to deviate from the general terms, conditions, special conditions or specifications contrary to those listed in the "Terms and Conditions" and other information attached hereto, all such deviations must be detailed and uploaded in the RESPONSE ATTACHMENTS section of the e-pro system with the description DEVIATION.</p> <p><P>NO DEVIATIONS: In the absence of any deviation, Proposer assures the City of Proposer's compliance with the Terms, Conditions, Specifications, and information contained in this RFP.</p>	None
41	Award	Response to specifications, location of vendor, history/relationship, price and vendor's ability to perform the work are the primary factors in determining the lowest responsible bid.	(No Response Required)
42	Contractor Independence	Contractor will operate as an independent contractor and not an agent, representative, partner, or employee of the City of Lancaster, and shall control his operations at the work site, and be solely responsible for the acts or omissions of his employee(s). All wages, taxes, and worker's compensation of all contract employees shall be paid by the contractor.	(No Response Required)
43	MWBE 1	Is your company M/WBE or HUB certified?	yes

44	MWBE 2	If yes, what is your certification number?	BMDB51154Y1112
45	MWBE 3	If yes, what agency completed the certification?	NCTRCA
46	MWBE 4	If yes, what is the expiration date of your certification?	November 2012
47	BID PROTESTS	<p>All protests regarding the bid solicitation process must be submitted in writing to the Purchasing Agent within five (5) working days following the opening of bids. This includes all protests relating to advertising of bid notices, deadlines, bid opening, and all other related procedures under the Local Government Code, as well as protests relating to alleged improprieties or ambiguities in the specifications.</p> <p><p></p> <p>The limitation does not include protests relating to staff recommendations as to award of a bid. Protests relating to staff recommendations may be directed to the City Council by contacting the City Secretary PRIOR to Council Award.</p>	Agreed
48	Reciprocal Information 1	<p>The City of Lancaster, as a governmental agency of the State of Texas, may not award a contract for general construction, improvements, services or public works projects or purchases of supplies, materials, or equipment to a non-resident bidder unless the non-resident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a non-resident bidder to obtain a comparable contract in the state in which the non-resident's principal place of business is located (Article 601g v.t.c.s.). Bidder shall answer all the following questions by encircling the appropriate response or completing the blank provided.</p> <p><p>**Where is your principal place of business?</p>	Texas
49	Reciprocal Information 2	For Businesses not located in Texas, does your state favor resident bidders (bidders in your state) by some dollar increment or percentage?	N/A
50	Reciprocal Information 3	If Yes, What is the dollar increment or percentage?	N/A
51	Notification	How did you here about this bid opportunity?	Other
52	Plan Room - Other	If yes for a plan room or other, please list which plan room or other means of notification.	Amtek Informational Services

Line Items

#	Qty	UOM	Description	Response
1	1	SF	Unit Price for repairs less than 500 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.00
Item Notes:				
Supplier Notes:				
Alt 1	1	SF	Alt Spec:	4.00
Item Notes:				
Supplier Notes:				
Alt 2	1	SF	Alt Spec:	4.00
Item Notes:				
Supplier Notes:				
2	1	SF	Unit Price for repairs 501 - 4,000 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.00
Item Notes:				
Supplier Notes:				
3	1	SF	Unit Price for repairs 4,001 - 10,000 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.00
Item Notes:				
Supplier Notes:				
4	1	SF	Unit Price for repairs less than 500 SF. <P> Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.25
Item Notes:				
Supplier Notes:				
5	1	SF	Unit Price for repairs 501 - 4,000 SF. <P> Remove & Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.25
Item Notes:				
Supplier Notes:				

6	1	SF	Unit Price for repairs 4,001 - 10,000 SF. <P> Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.25
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Item Notes:

Supplier Notes:

Alt 1	1	SF	Alt Spec:	4.25
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Item Notes:

Supplier Notes:

7	1	SF	Unit Price for repairs less than 500 SF. <P> Remove and Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.95
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Item Notes:

Supplier Notes:

8	1	SF	Unit Price for repairs 501 - 4,000 SF. <P> Remove & Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.85
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Item Notes:

Supplier Notes:

9	1	SF	Unit Price for repairs 4,001 - 10,000 SF. <P> Remove & Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.75
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Item Notes:

Supplier Notes:

10	1	SY	Unit Price for repairs less than 500 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	\$45.00
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Item Notes:

Supplier Notes:

Alt 1	1	SY	Alt Spec:	45.00
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Item Notes:

Supplier Notes:

11	1	SY	Unit Price for repairs 501 - 1,000 SY. <P> Remove & Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	\$45.00
Item Notes:				
Supplier Notes:				
Alt 1	1	SY	Alt Spec:	45.00
Item Notes:				
Supplier Notes:				
12	1	SY	Unit Price for repairs less than 100 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$45.00
Item Notes:				
Supplier Notes:				
13	1	SY	Unit Price for repairs 101 - 400 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$45.00
Item Notes:				
Supplier Notes:				
14	1	SY	Unit Price for repairs less than 50 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$54.00
Item Notes:				
Supplier Notes:				
15	1	SY	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$54.00
Item Notes:				
Supplier Notes:				
16	1	SY	Unit Price for repairs less than 100 SY. <P> Remove and Replace 6" reinforced 4,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$54.00
Item Notes:				
Supplier Notes:				

17	1	SY	Unit Price for repairs 101 - 400 SY. <P> Remove and Replace 6" reinforced 4,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$54.00
Item Notes:				
Supplier Notes:				
18	1	SY	Unit Price for repairs less than 500 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete curb with 12" Gutter with limestone aggregate, no Fly Ash, complete in place.	\$65.00
Item Notes:				
Supplier Notes:				
19	1	SY	Unit Price for repairs 501 - 1,000 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete curb with 12" Gutter with limestone aggregate, no Fly Ash, complete in place.	\$65.00
Item Notes:				
Supplier Notes:				
20	1	SY	Unit Price for repairs less than 50 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$63.00
Item Notes:				
Supplier Notes:				
21	1	SY	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$63.00
Item Notes:				
Supplier Notes:				
Alt 1	1	SY	Alt Spec:	63.00
Item Notes:				
Supplier Notes:				
Response Total:				\$691.30

City of Lancaster, Texas

Standard Fixed Price Construction Agreement

This Agreement is made by and between the City of Lancaster, Texas, a home-rule municipality (hereinafter referred to as the "Owner") and C&M Concrete., (hereinafter referred to as the "Contractor") for Concrete Repairs (2012-51), (hereinafter referred to as the "Project"), the Owner and the Contractor hereby agree as follows:

ARTICLE I: CONTRACT & CONTRACT DOCUMENTS

1.1 THE CONTRACT

1.1.1 The Contract between the Owner and the Contractor, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it.

1.2. THE CONTRACT DOCUMENTS

1.2.1 The Contract Documents consist of this Agreement, the Invitation to Bid, Requirements and Instructions to Bidders, the Specifications, the Drawings, all Change Orders and Field Orders issued hereafter, any other amendments hereto executed by the parties hereafter, together with the following (if any): **NONE**

Documents not enumerated in this Paragraph 1.2.1 are not Contract Documents and do not form part of this Contract.

1.3 ENTIRE AGREEMENT

1.3.1 This Contract, together with the Contractor's performance, maintenance, and payment bonds for the Project, all General Conditions, Special Conditions, Plans and Specifications, and Addenda attached thereto, constitute the entire and exclusive agreement between the Owner and the Contractor with reference to the Project. Specifically, but without limitation, this Contract supersedes any bid documents and all prior written or oral communications, representations and negotiations, if any, between the Owner and Contractor not expressly made a part hereof.

1.4 NO PRIVACY WITH OTHERS

1.4.1 Nothing contained in this Contract shall create, or be interpreted to create, privity or any other contractual agreement between the Owner and any person or entity other than the Contractor.

1.5 INTENT AND INTERPRETATION

1.5.1 The intent of this Contract is to require complete, correct and timely execution of the Work. Any Work that may be required, implied or inferred by the Contract Documents, or any one or more of them, as necessary to produce the intended result shall be provided by the Contractor for the Contract Price.

1.5.2 This Contract is intended to be an integral whole and shall be interpreted as internally consistent. What is required by any one Contract Document shall be considered as required by the Contract.

1.5.3 When a word, term or phrase is used in this Contract, it shall be interpreted or construed, first, as defined herein; second, if not defined, according to its

generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

1.5.4 The words "include", "includes", or "including", as used in this Contract, shall be deemed to be followed by the phrase, "without limitation".

1.5.5 The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of this Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of this Contract.

1.5.6 Words or terms used as nouns in this Contract shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.5.7 The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the Shop Drawings, the Product Data, and any Plans and Specifications, and shall give written notice to the Owner of any inconsistency, ambiguity, error or omission which the Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance or the express or implied approval by the Owner of the Contract Documents, Shop Drawings, or Product Data shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. By the execution hereof, the Contractor acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not rely upon any representation or warranties by the Owner concerning such documents as no such representation or warranties have been or are hereby made. Further, the Contractor represents and warrants that it has had a sufficient opportunity to inspect the Project site and assumes any and all responsibility for inadequacies or ambiguities in the plans, drawings or specifications as well as for latent conditions of the site where the work is to be performed.

1.5.9 Neither the organization of any of the Contract Documents into divisions, sections, paragraphs, articles, (or other categories), nor the organization or arrangement of the Design, shall control the Contractor in dividing the Work or in establishing the extent or scope of the Work to be performed by Subcontract

1.6 OWNERSHIP OF CONTRACT DOCUMENTS

1.6.1 The Contract Documents, and each of them, shall remain the property of the Owner. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided, however, that in no event shall Contractor use, or permit to be used, any or all of such Contract Documents on other projects without the Owner's prior written authorization.

ARTICLE II: THE WORK

2.1 The Contractor shall perform all of the Work required, implied or reasonably inferable from, this Contract.

2.2 WORK

2.2.1 The term "Work" shall mean whatever is done by or required of the Contractor to perform and complete its duties under this Contract, including the following: construction of the whole or a designated part of the Project; furnishing of any required surety bonds and insurance, and the provision or furnishing of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, permits and licenses required of the Contractor, fuel, heat, light, cooling and all other utilities as required by this Contract. The Work to be performed by the Contractor is generally described as follows:

2012-51 – Concrete Repairs–Annual Contract

A purchase order will be issue for each work order issued. All work shall be completed within the agreed upon time for each work order.

2.2.2 The Contractor shall be responsible for paying for and procuring all materials and labor and furnishing all services necessary or appropriate for the full performance of the Work and the for the full completion of the Project. All materials shall be new and materials and workmanship shall be of good quality. Upon request, the Contractor shall furnish satisfactory proof of the type, kind, and quality of materials.

ARTICLE III: CONTRACT TIME

3.1 TIME AND LIQUIDATED DAMAGES

3.1.1 The Contractor shall commence the Work within 10 days of receipt of a purchase order. The parties acknowledge that time is of the essence in the performance of the terms of this Contract. The term "calendar days" shall mean any and all days of the week or month, no days being excepted. It is contemplated by the parties that the progress of the Work may be delayed by certain conditions beyond the control of the parties; these delays have been contemplated by the parties and considered in the time allotted for performance specified herein and includes, but is not limited to delays occasioned on account of adverse weather, temporary unavailability of materials, shipment delays, and the

presence and potential interference of other contractors who may be performing work at the Project site unrelated to this agreement.

The number of calendar days from the date on which the Work is permitted to proceed, through the date set forth for Substantial Completion, shall constitute the "Contract Time".

3.1.2 The Contractor shall pay the Owner the sum of \$120.00 per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Substantial Completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that Substantial Completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

3.1.3 In the event that the Contractor achieves certification of substantial completion prior to the scheduled completion date, the Owner shall pay to the Contractor the sum of \$0.00 per day for each calendar day that substantial completion is certified in advance of the scheduled completion date.

3.1.4 No claim shall be made by the Contractor to the Owner, and no damages, costs or extra compensation shall be allowed or paid by the Owner to the Contractor for any delay or hindrance from any cause in the progress or completion of the Work or this Contract. The Contractor's sole remedy in the event of any delay or hindrance shall be to request time extensions by written change orders as provided for hereinafter. Should the Contractor be delayed by an act of the Owner, or should the Owner order a stoppage of the Work for sufficient cause, an extension of time shall be granted by the Owner by written authorization upon written application, which extension shall not be unreasonably denied, to compensate for the delay.

3.1.5 The Owner shall have the authority to suspend the Work wholly or in part for such period or periods of time as it may deem appropriate due to unsuitable conditions considered unfavorable for the proper prosecution of the Work or for the failure of the Contractor to carry out instructions from the Owner or Owner's representative. During any period in which the Work is stopped or during which any of the Work is not actively in progress for any reason, Contractor shall properly protect the site and the Work from damage, loss or harm.

3.2 SUBSTANTIAL COMPLETION

3.2.1 "Substantial Completion" shall mean that stage in the progression of the Work when the Work is sufficiently complete in accordance with this Contract that the Owner can enjoy beneficial use or occupancy of the Work and can utilize the Work for its intended purpose, even though minor miscellaneous work and/or adjustment may be required.

3.3 TIME IS OF THE ESSENCE

3.3.1 All limitations of time set forth in the Contract Documents are of the essence of this Contract.

ARTICLE IV: CONTRACT PRICE

4.1 THE CONTRACT PRICE

4.1.1 The Owner shall pay, and the Contractor shall accept, as full and complete payment for all of the Work required herein, at the unit prices attached hereto as [Exhibit A: Contractor Response](#).

ARTICLE V: PAYMENT OF THE CONTRACT PRICE

5.1 SCHEDULE OF VALUES

5.1.1 Within ten (10) calendar days of the effective date hereof, the Contractor shall submit to the Owner a Schedule of Values allocating the Contract Price to the various portions of the Work. The Contractor's Schedule of Values shall be prepared in such form, with such detail, and supported by such data as the Owner may require to substantiate its accuracy. The Contractor shall not imbalance the Schedule of Values nor artificially inflate any element thereof. The violation of this provision by the Contractor shall constitute a material breach of this Contract. The Schedule of Values shall be used only as a basis for the Contractor's Applications for Payment and shall only constitute such basis after it has been acknowledged and accepted in writing by the Owner.

5.2 PAYMENT PROCEDURE

5.2.1 The Owner shall pay the unit Price to the Contractor as provided below.

5.2.2 **PROGRESS PAYMENTS** - Based upon the Contractor's Applications for Payment submitted to the Owner and upon Certificates for Payment subsequently issued to the Owner, the Owner shall make progress payments to the Contractor on account of the Contract Price.

5.2.3 On or before the 25th day of each month after commencement of the Work, the Contractor shall submit an Application for Payment for the period ending the 15th day of the month to the Owner in such form and manner, and with such supporting data and content, as the Owner may require. Therein, the Contractor may request payment for ninety percent (90%) of that portion of the Contract Price properly allocable to Contract requirements properly provided, labor, materials and equipment properly incorporated in the Work, less the total amount of previous payments received from the Owner. Such Application for Payment shall be signed by

the Contractor and shall constitute the Contractor's representation that the Work has progressed to the level for which payment is requested in accordance with the Schedule of Values, that the Work has been properly installed or performed in full compliance with this Contract, and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the Owner will review the Application for Payment and may also review the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by this Contract. The Owner shall determine and certify to the Owner the amount properly owing to the Contractor. The Owner shall make partial payments on account of the Contract Price to the Contractor within thirty (30) days following the Owner's receipt and approval of each Application for Payment. The amount of each partial payment shall be the amount certified for payment by the Owner less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by this Contract.

5.2.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which payments have been received from the Owner shall be free and clear of liens, claims, security interest or other encumbrances in favor of the Contractor or any other person or entity whatsoever.

5.2.5 The Contractor shall promptly pay each Subcontractor out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which such Subcontractor is entitled. In the event the Owner becomes informed that the Contractor has not paid a Subcontractor as herein provided, the Owner shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such Subcontractor as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

5.2.6 No progress payment, nor any use or occupancy of the Project by the owner, shall be interpreted to constitute an acceptance of any Work not in strict accordance with this Contract.

5.3 WITHHELD PAYMENT

5.3.1 The Owner may decline to make payment, may withhold funds, and, if necessary, may demand the return of some or all of the amounts previously paid to the Contractor, to protect the Owner from loss because of:

- (a) defective Work not remedied by the Contractor nor, in the opinion of the Owner, likely to be remedied by the Contractor;
- (b) claims of third parties against the Owner or the Owner's property;
- (c) failure by the Contractor to pay Subcontractors or others in a prompt and proper fashion;
- (d) evidence that the balance of the Work cannot be completed in accordance with the Contract for the unpaid balance of the Contract Price,
- (e) evidence that the Work will not be completed in the time required for substantial or final completion;
- (f) persistent failure to carry out the Work in accordance with the Contract;
- (g) damage to the Owner or a third party to whom the Owner is, or may be, liable.

In the event that the Owner makes written demand upon the Contractor for amounts previously paid by the Owner as contemplated in this Subparagraph 5.3.1, the Contractor shall promptly comply with such demand. The Owner shall have no duty to third parties to withhold payment to the Contractor and shall incur no liability for a failure to withhold funds.

5.4 UNEXCUSED FAILURE TO PAY

5.4.1 If within fifteen (15) days after the date established herein for payment to the Contractor by the Owner, the Owner, without cause or basis hereunder, fails to pay the Contractor any amount then due and payable to the Contractor, then the Contractor may after ten (10) additional days' written notice to the Owner and without prejudice to any other available rights or remedies it may have, stop the Work until payment of those amounts due from the Owner have been received. Late payments shall not accrue interest or other late charges.

5.5 SUBSTANTIAL COMPLETION

5.5.1 When the Contractor believes that the Work is substantially complete, the Contractor shall submit to the Owner a list of items to be completed or corrected. When the Owner on the basis of an inspection determines that the Work is in fact substantially complete, it will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Guarantees required by the Contract shall commence on the date of Substantial Completion of the Work. The Certificate of Substantial Completion shall be submitted to the Owner

and the Contractor for their written acceptance of the responsibilities assigned to them in such certificate.

Upon Substantial Completion of the Work, and execution by both the Owner and the Contractor of the Certificate of Substantial Completion, the Owner shall pay the Contractor an amount sufficient to increase total payments to the Contractor to one hundred percent (100%) of the Contract Price less three hundred percent (300%) of the reasonable cost as determined by the Owner for completing all incomplete Work, correcting and bringing into conformance all defective and nonconforming Work, and handling all unsettled claims.

5.6 COMPLETION AND FINAL PAYMENT

5.6.1 When all of the Work is finally complete and the Contractor is ready for a final inspection, it shall notify the Owner thereof in writing. Thereupon, the Owner will make final inspection of the Work and, if the Work is complete in full accordance with this Contract and this Contract has been fully performed and will issue a final Certificate for Payment certifying that the Project is complete and the Contractor is entitled to the remainder of the unpaid Contract Price, less any amount withheld pursuant to this Contract

5.6.1.1 If the Contractor fails to achieve final completion in its Certificate of Substantial Completion, the Contractor shall pay the Owner the sum set forth hereinabove as liquidated damages per day for each and every calendar day of unexcused delay in achieving final completion beyond the date set forth herein for final completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that final completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving final completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

5.6.2 The Contractor shall not be entitled to final payment unless and until it submits to the Owner its affidavit that all payrolls, invoices for materials and equipment, and other liabilities connected with the Work for which the Owner, or the Owner's property might be responsible, have been fully paid or otherwise satisfied; releases and waivers of lien from all Subcontractors of the Contractor; consent of Surety, if any, to final payment. If any third party fails or refuses to provide a release of claim or waiver of lien as required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner to discharge any such lien or indemnify the Owner from liability.

5.6.3 The Owner shall make final payment of all sums due the Contractor within ten (10) days of the execution of a final Certificate for Payment.

5.6.4 Acceptance of final payment shall constitute a waiver of all claims against the Owner by the Contractor except for those claims previously made in writing against the Owner by the Contractor, pending at the time of final payment, and identified in writing by the Contractor as unsettled at the time of its request for final payment.

5.6.5 Under no circumstance shall Contractor be entitled to receive interest on any payments or monies due Contractor by the Owner, whether the amount on which the interest may accrue is timely, late, wrongfully withheld, or an assessment of damages of any kind.

ARTICLE VI: THE OWNER

6.1 INFORMATION, SERVICES AND THINGS REQUIRED FROM OWNER

6.1.1 The Owner shall furnish to the Contractor, at the time of executing this Contract, any and all written and tangible material in its possession concerning conditions below ground at the site of the Project.

Such written and tangible material is furnished to the Contractor only in order to make complete disclosure of such material and for no other purpose. By furnishing such material, the Owner does not represent, warrant, or guarantee its accuracy either in whole, in part, implicitly or explicitly, or at all, and shall have no liability therefore. The Owner shall also furnish surveys, legal limitations and utility locations (if known), and a legal description of the Project site.

6.1.2 Excluding permits and fees normally the responsibility of the Contractor, the Owner shall obtain all approvals, easements, and the like required for construction and shall pay for necessary assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

6.1.3 The Owner shall furnish the Contractor, free of charge, one copy of the Contract Documents for execution of the Work.

6.2 RIGHT TO STOP WORK

6.2.1 If the Contractor persistently fails or refuses to perform the Work in accordance with this Contract, or if the best interests of the public health, safety or welfare so require, the Owner may order the Contractor to stop the Work, or any described portion thereof, until the cause for stoppage has been corrected, no longer exists, or the Owner orders that Work be resumed. In such event, the Contractor shall immediately obey such order.

6.3 OWNER'S RIGHT TO PERFORM WORK

6.3.1 If the Contractor's Work is stopped by the Owner under Paragraph 6.2, and the Contractor fails within seven (7) days of such stoppage to provide adequate assurance to the Owner that the cause of such stoppage

will be eliminated or corrected, then the Owner may, without prejudice to any other rights or remedies the Owner may have against the Contractor, proceed to carry out the subject Work. In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the cost of correcting the subject deficiencies, if any. If the unpaid portion of the Contract Price is insufficient to cover the amount due the Owner, the Contractor shall pay the difference to the Owner.

ARTICLE VII: THE CONTRACTOR

7.1 The Contractor is again reminded of its continuing duty set forth in Subparagraph 1.5.7. The Contractor shall perform no part of the Work at any time without adequate Contract Documents or, as appropriate, approved Shop Drawings, Product Data or Samples for such portion of the Work. If the Contractor performs any of the Work knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Owner, the Contractor shall bear responsibility for such performance and shall bear the cost of correction.

7.2 The Contractor shall perform the Work strictly in accordance with this Contract.

7.3 The Contractor shall supervise and direct the Work using the Contractor's best skill, effort and attention. The Contractor shall be responsible to the Owner for any and all acts or omissions of the Contractor, its employees and others engaged in the Work on behalf of the Contractor.

7.3.1 The Contractor shall give adequate attention to the faithful prosecution of the Work and the timely completion of this Contract, with authority to determine the manner and means of performing such Work, so long as such methods insure timely completion and proper performance.

7.3.2 The Contractor shall exercise all appropriate means and measures to insure a safe and secure jobsite in order to avoid and prevent injury, damage or loss to persons or property.

7.4 WARRANTY

7.4.1 The Contractor warrants to the Owner that all labor furnished to progress the Work under this Contract will be competent to perform the tasks undertaken, that the product of such labor will yield only first-class results, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Contract, and that the Work will be of good quality, free from faults and defects and in strict conformance with this Contract. All Work not conforming to these requirements may be considered defective.

7.5 The Contractor shall obtain and pay for all permits, fees and licenses necessary and ordinary for the Work. The Contractor shall comply with all lawful requirements applicable to the Work and shall give and maintain any and all notices required by applicable law pertaining to the Work.

7.6 SUPERVISION

7.6.1 The Contractor shall employ and maintain at the Project site only competent supervisory personnel. Absent written instruction from the Contractor to the contrary, the superintendent shall be deemed the Contractor's authorized representative at the site and shall be authorized to receive and accept any and all communications from the Owner.

7.6.2 Key supervisory personnel assigned by the Contractor to this Project are as follows:

NAME	FUNCTION

So long as the individuals named above remain actively employed or retained by the Contractor, they shall perform the functions indicated next to their names unless the Owner agrees to the contrary in writing. In the event one or more individuals not listed above subsequently assume one or more of those functions listed above, the Contractor shall be bound by the provisions of this Subparagraph 7.6.2 as though such individuals had been listed above.

7.7 The Contractor, within fifteen (15) days of commencing the Work, shall submit to the Owner for their information, the Contractor's schedule for completing the Work. The Contractor's schedule shall be revised no less frequently than monthly (unless the parties otherwise agree in writing) and shall be revised to reflect conditions encountered from time to time and shall be related to the entire Project. Each such revision shall be furnished to the Owner. Failure by the Contractor to strictly comply with the provisions of this Paragraph 7.7 shall constitute a material breach of this Contract.

7.8 The Contractor shall continuously maintain at the site, for the benefit of the owner, one record copy of this Contract marked to record on a current basis changes, selections and modifications made during construction. Additionally, the Contractor shall maintain at the site for the Owner, Product Data, Samples and other similar required submittals. Upon final completion of the Work, all of these record documents shall be delivered to the Owner.

7.9 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

7.9.1 Shop Drawings, Product Data, Samples and other submittals from the Contractor do not constitute Contract Documents. Their purpose is merely to demonstrate the manner in which the Contractor intends to implement the Work in conformance with information received from the Contract Documents.

7.9.2 The Contractor shall not perform any portion of the Work requiring submittal and review of Shop Drawings, Product Data or Samples unless and until such submittal shall have been approved by the Owner.

7.10 CLEANING THE SITE AND THE PROJECT

7.10.1 The Contractor shall keep the site reasonably clean during performance of the Work. Upon final completion of the Work, the Contractor shall clean the site and the Project and remove all waste, rubbish, temporary structures, and other materials together with all of the Contractor's property therefrom. Contractor shall dispose of all refuse at a Texas Natural Resource Conservation Commission approved landfill. The Contractor shall further restore all property damaged during the prosecution of the Work and shall leave the site in a clean and presentable condition. No additional payment shall be made by the Owner for this work, the compensation having been considered and included in the contract price.

7.11 ACCESS TO WORK AND INSPECTIONS

7.11.1 The Owner shall have access to the Work at all times from commencement of the Work through final completion. The Contractor shall take whatever steps necessary to provide access when requested. When reasonably requested by the Owner, the Contractor shall perform or cause to be performed such testing as may be necessary or appropriate to insure suitability of the jobsite or the Work's compliance with the Contract requirements.

7.12 INDEMNITY AND DISCLAIMER

7.12.1 OWNER SHALL NOT BE LIABLE OR RESPONSIBLE FOR, AND SHALL BE INDEMNIFIED, DEFENDED, HELD HARMLESS AND RELEASED BY CONTRACTOR FROM AND AGAINST ANY AND ALL SUITS, ACTIONS, LOSSES, DAMAGES, CLAIMS, OR LIABILITY OF ANY CHARACTER, TYPE, OR DESCRIPTION, INCLUDING ALL EXPENSES OF LITIGATION, COURT COSTS, AND ATTORNEY'S FEES FOR INJURY OR DEATH TO ANY PERSON, OR INJURY OR LOSS TO ANY PROPERTY, RECEIVED OR SUSTAINED BY ANY PERSON OR PERSONS, INCLUDING THE CONTRACTOR, OR PROPERTY, ARISING OUT OF, OR OCCASIONED BY, DIRECTLY OR INDIRECTLY, THE PERFORMANCE OF CONTRACTOR UNDER THIS AGREEMENT, INCLUDING CLAIMS AND DAMAGES ARISING IN WHOLE OR IN PART FROM THE NEGLIGENCE OF OWNER, WITHOUT, HOWEVER, WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE OWNER UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW. THE PROVISIONS OF THIS INDEMNIFICATION ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND NOT INTENDED TO CREATE OR GRANT ANY RIGHTS, CONTRACTUAL OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY. IT IS THE EXPRESSED INTENT OF THE PARTIES TO THIS AGREEMENT THAT THE INDEMNITY PROVIDED FOR IN THIS CONTRACT IS AN INDEMNITY EXTENDED BY CONTRACTOR TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF THE CONTRACTOR'S AS WELL AS THE OWNER'S NEGLIGENCE, WHETHER SUCH

NEGLIGENCE IS THE SOLE OR PARTIAL CAUSE OF ANY SUCH INJURY, DEATH, OR DAMAGE.

7.12.2 The Contractor will secure and maintain Contractual Liability insurance to cover this indemnification agreement that will be primary and non-contributory as to any insurance maintained by the Owner for its own benefit, including self-insurance. In addition, Contractor shall obtain and file with Owner a Standard Certificate of Insurance evidencing the required coverage.

7.12.3 In claims against any person or entity indemnified under this Paragraph 7.12 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 7.12 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

7.13 NONDISCRIMINATION

7.13.1 The Contractor shall not discriminate in any way against any person, employee or job applicant on the basis of race, color, creed, national origin, religion, age, sex, or disability where reasonable accommodations can be effected to enable the person to perform the essential functions of the job. The Contractor shall further insure that the foregoing nondiscrimination requirement shall be made a part and requirement of each subcontract on this Project.

7.14 PREVAILING WAGE RATES

7.14.1 The Contractor shall comply in all respects with all requirements imposed by any laws, ordinances or resolutions applicable to the Project with regard to the minimum prevailing wage rates for all classes of employees, laborers, subcontractors, mechanics, workmen and persons furnishing labor and services to the Project. The City of Lancaster has adopted US Department of Labor's Davis Bacon Wage Determinations as the Prevailing Wage Rate Schedule, available to the Contractor by request, which specifies the classes and wage rates to be paid to all persons. The Contractor shall pay not less than the minimum wage rates established thereby for each class, craft or type of labor, workman, or mechanic employed in the execution of this Contract. The failure of the Contractor to comply with this requirement shall result in the forfeiture to the City of \$10.00 of a sum of not less than Sixty Dollars (\$60.00) for each person per day, or portion thereof, that such person is paid less than the prevailing rate. Upon request by the Owner, Contractor shall make available for inspection and copying its books and records, including but not limited to its payroll records, account information and other documents as may be required by the Owner to insure compliance with this provision.

7.15 JOB SITE SAFETY PRECAUTIONS

7.15.1 The Contractor shall at all times exercise reasonable precautions for the safety of its employees, laborers, subcontractors, mechanics, workmen and others on and near the jobsite and shall comply with all laws, ordinances, regulations, and standards of federal, state and local safety laws and regulations. The Contractor shall provide such machinery guards, safe walk-ways, ladders, bridges, and other safety devices as may be necessary or appropriate to insure a safe and secure jobsite and shall require its subcontractors to comply with this requirement. The Contractor shall immediately comply with any and all safety requirements imposed by the Owner during the progress of the Work.

7.16 WARNING DEVICES AND BARRICADES

7.16.1 The Contractor shall furnish and maintain such warning devices, barricades, lights, signs, pavement markings, and other devices as may be necessary or appropriate or required by the Owner to protect persons or property in, near or adjacent to the jobsite, including . No separate compensation shall be paid to the Contractor for such measures. Where the Work is being conducted in, upon or near streets, alleys, sidewalks, or other rights-of-way, the Contractor shall insure the placement, maintenance and operation of any and all such warning devices as may be required by the City of Lancaster and shall do so until no longer required by the City. Such devices shall be in compliance with and conform to the manual and specifications for the uniform system of traffic control devices adopted by the Texas Department of Transportation.

7.17 PROTECTION OF UTILITIES & OTHER CONTRACTORS

7.17.1 The Contractor shall use best efforts to leave undisturbed and uninterrupted all utilities and utility services provided to the jobsite or which presently exists at, above or beneath the location where the Work is to be performed. In the event that any utility or utility service is disturbed or damaged during the progress of the Work, the Contractor shall forthwith repair, remedy or restore the utility at Contractor's sole expense.

7.17.2 The Contractor understands and acknowledges that other contractors of the Owner or of other entities may be present at the jobsite performing other work unrelated to the Project. The Contractor shall use best efforts to work around other contractors without impeding the work of others while still adhering to the completion date established herein. In the event that the Contractor's work is or may be delayed by any other person, the Contractor shall immediately give notice to the Owner and shall request a written Change Order in accordance with the procedures set forth by this Contract. The Contractor's failure to provide such notice and to request such Change Order shall constitute a waiver of any and all claims associated therewith.

ARTICLE VIII: CONTRACT ADMINISTRATION

8.1 FIELD ORDERS

8.1.1 The Owner shall have authority to order minor changes in the Work not involving a change in the Contract Price or in Contract Time and not inconsistent with the intent of the Contract. Such changes shall be effected by Field Order and shall be binding upon the Contractor. The Contractor shall carry out such Field Orders promptly.

8.2 MEDIATION

8.2.1 In the event that a dispute arises under the terms of this Contract, following an adverse determination by the Owner and proper preservation of the issue as required herein, the parties agree to submit to mediation. In such event, the parties shall agree to a designated person to serve as mediator and each party shall be responsible for payment of one-half of the total mediation fees. The parties shall submit the dispute to mediation as soon as practical and in no event later than one (1) year after the Owner's written decision on the matter. At least one designated representative of each party must attend and participate in good faith in an effort to resolve the matters in dispute.

8.2.2 In no event shall the foregoing provision justify or authorize any delay in the progress of the Work; the parties shall abide by the decision of the Owner in accomplishing the timely completion of the Project.

ARTICLE IX: SUBCONTRACTORS

9.1 DEFINITION

9.1.1 A Subcontractor is an entity which has a direct contract with the Contractor to perform a portion of the Work. No Subcontractor shall be in privity with the Owner.

9.2 AWARD OF SUBCONTRACTS

9.2.1 Upon execution of the Contract, the Contractor shall furnish the Owner, in writing, the names of persons or entities proposed by the Contractor to act as a Subcontractor on the Project. The Owner shall promptly reply to the Contractor, in writing, stating any objections the Owner may have to such proposed Subcontractor. The Contractor shall not enter into a subcontract with a proposed Subcontractor with reference to whom the Owner has made timely objection. The Contractor shall not be required to subcontract with any party to whom the Contractor has objection.

9.2.2 All subcontracts shall afford the Contractor rights against the Subcontractor which correspond to those rights afforded to the Owner against the Contractor herein, including those rights afforded to the Owner by Subparagraph 12.2.1 below. All subcontracts shall incorporate by reference the provisions hereof and shall provide that no claims, causes or demands shall be made by any Subcontractor against the Owner.

9.2.3 The Contractor shall indemnify, defend and hold harmless the Owner from and against any and all claims,

demands, causes of action, damage, and liability asserted or made against the Owner by or on behalf of any Subcontractor.

ARTICLE X: CHANGES IN THE WORK

10.1 CHANGES PERMITTED

10.1.1 Changes in the Work within the general scope of this Contract, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Contract, by Change Order or by Field Order.

10.1.2 Changes in the Work shall be performed under applicable provisions of this Contract and the Contractor shall proceed promptly with such changes.

10.2 CHANGE ORDER DEFINED

10.2.1 Change Order shall mean a written order to the Contractor executed by the Owner, issued after execution of this Contract, authorizing and directing a change in the Work or an adjustment in the Contract Price or the Contract Time, or any combination thereof. The Contract Price and the Contract Time may be changed only by written Change Order.

10.3 CHANGES IN THE CONTRACT PRICE

10.3.1 Any change in the Contract Price resulting from a Change Order shall be determined as follows: (a) by mutual agreement between the Owner and the Contractor as evidenced by (1) the change in the Contract Price being set forth in the Change Order, (2) such change in the Contract Price, together with any conditions or requirements related thereto, being initialed by both parties and (3) the Contractor's execution of the Change Order, or (b) if no mutual agreement occurs between the Owner and the Contractor, then, as provided in Subparagraph 10.3.2 below.

10.3.2 If no mutual agreement occurs between the Owner and the Contractor as contemplated in Subparagraph 10.3.1 above, the change in the Contract Price, if any, shall then be determined by the Owner on the basis of the reasonable expenditures or savings of those performing, deleting or revising the Work attributable to the change, including, in the case of an increase or decrease in the Contract Price, a reasonable allowance for direct job site overhead and profit. In such case, the Contractor shall present, in such form and with such content as the Owner or requires an itemized accounting of such expenditures or savings, plus appropriate supporting data for inclusion in a Change Order. Reasonable expenditures or savings shall be limited to the following: reasonable costs of materials, supplies, or equipment including delivery costs, reasonable costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance, reasonable rental costs of machinery and equipment exclusive of hand tools whether rented from the Contractor or others, reasonable costs of premiums for all bonds and insurance, permit fees, and sales, use or other

related to the Work, and reasonable cost of direct supervision and jobsite field office overhead directly attributable to the change.

10.3.3 If unit prices are provided in the Contract, and if the quantities contemplated are so changed in a proposed Change Order that application of such unit prices to the quantities of Work proposed will cause substantial inequity to the Owner or to the Contractor, the applicable unit prices shall be equitably adjusted.

10.4 MINOR CHANGES

10.4.1 The Owner shall have authority to order minor changes in the Work not involving a change in the Contract Price or an extension of the Contract Time and not inconsistent with the intent of this Contract. Such minor changes shall be made by written Field Order, and shall be binding upon the owner and the Contractor. The Contractor shall promptly carry out such written Field Orders.

10.5 EFFECT OF EXECUTED CHANGE ORDER

10.5.1 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order.

10.6 NOTICE TO SURETY; CONSENT

10.6.1 The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval is required by the Contractor's surety or by law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the Owner that the surety has been notified of and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

ARTICLE XI: UNCOVERING & CORRECTING WORK

11.1 UNCOVERING WORK

11.1.1 If any of the Work is covered contrary to the Owner's request or to any provisions of this Contract, it shall, if required by the Owner, be uncovered for the Owner's inspection and shall be properly replaced at the Contractor's expense without change in the Contract Time.

11.1.2 If any of the Work is covered in a manner not inconsistent with Subparagraph 11.1.1 above, it shall, if required by the Owner, be uncovered for the Owner's inspection. If such Work conforms strictly with this Contract, costs of uncovering and proper replacement shall by Change Order be charged to the Owner. If such Work does not strictly conform with this Contract, the

Contractor shall pay the costs of uncovering and proper replacement.

11.2 CORRECTING WORK

11.2.1 The Contractor shall immediately proceed to correct Work rejected by the Owner as defective or failing to conform to this Contract. The Contractor shall pay all costs and expenses associated with correcting such rejected Work, including any additional testing and inspections, and reimbursement to the Owner for the services and expenses made necessary thereby.

11.2.2 If within one (1) year after Substantial Completion of the Work any of the Work is found to be defective or not in accordance with this Contract, the Contractor shall correct it promptly upon receipt of written notice from the Owner. This obligation shall survive final payment by the Owner and termination of this Contract. With respect to Work first performed and completed after Substantial Completion, this one year obligation to specifically correct defective and nonconforming Work shall be extended by the period of time which elapses between Substantial Completion and completion of the subject Work.

11.2.3 Nothing contained in this Paragraph 11.2 shall establish any period of limitation with respect to other obligations which the Contractor has under this Contract. Establishment of the one year time period in Subparagraph 11.2.2 relates only to the duty of the Contractor to specifically correct the Work.

11.3 OWNER MAY ACCEPT DEFECTIVE OR NONCONFORMING WORK

11.3.1 If the Owner chooses to accept defective or nonconforming Work, the Owner may do so. In such event, the Contract Price shall be reduced by the greater of (a) the reasonable cost of removing and correcting the defective or nonconforming Work, and (b) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the Owner for its acceptance of defective or nonconforming Work, the Contractor shall, upon written demand from the Owner, pay the Owner such remaining compensation for accepting defective or nonconforming Work.

ARTICLE XII: CONTRACT TERMINATION

12.1 TERMINATION BY THE CONTRACTOR

12.1.1 If the Work is stopped for a period of ninety (90) days by an order of any court or other public authority, or as a result of an act of the Government, through no fault of the Contractor or any person or entity working directly or indirectly for the Contractor, the Contractor may, upon ten (10) days' written notice to the Owner, terminate performance under this Contract and recover from the Owner payment for the actual reasonable expenditures of the Contractor (as limited in Subparagraph 10.3.2 above) for all Work executed and for ma

equipment, tools, construction equipment and machinery actually purchased or rented solely for the Work, less any salvage value of any such items.

12.1.2 If the Owner shall persistently or repeatedly fail to perform any material obligation to the Contractor for a period of fifteen (15) days after receiving written notice from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance under this Contract by written notice to the Owner. In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance under this Contract for convenience pursuant to Subparagraph 12.2.1 hereunder.

12.2 TERMINATION BY THE OWNER

12.2.1 FOR CONVENIENCE

12.2.1.1 The Owner may for any reason whatsoever terminate performance under this Contract by the Contractor for convenience. The Owner shall give written notice of such termination to the Contractor specifying when termination becomes effective.

12.2.1.2 The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The Owner may direct the Contractor to assign the Contractor's right, title and interest under terminated orders or subcontracts to the Owner or its designee.

12.2.1.3 The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

12.2.1.4

(a) The Contractor shall submit a termination claim to the Owner specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the Owner. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Owner shall pay the Contractor, an amount derived in accordance with subparagraph (c) below.

(b) The Owner and the Contractor may agree to the compensation, if any, due to the Contractor hereunder.

(c) Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts:

(i) Contract prices for labor, materials, equipment and other services accepted under this Contract;

(ii) Reasonable costs incurred in preparing to perform and in performing the terminated

portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages), provided however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

(iii) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Subparagraph 12.2.1.2 of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 12.2.1 shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

12.2.2 FOR CAUSE

12.2.2.1 If the Contractor persistently or repeatedly refuses or fails to prosecute the Work in a timely manner, abandons the jobsite and fails to resume work within five (5) days of written notice thereof by the Owner, fails to grant or allow access to the jobsite by the Owner, fails to supply enough properly skilled workers, supervisory personnel or proper equipment or materials, fails to make prompt payment to Subcontractors or for materials or labor, persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a violation of a material provision of this Contract, then the Owner may by written notice to the Contractor, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

12.2.2.2 If the unpaid balance of the Contract Price does not exceed the cost of finishing the work, including compensation for the Owner's additional services and expenses made necessary thereby, such difference shall be paid by the Contractor to the Owner. This obligation for payment shall survive the termination of the Contract.

12.2.2.3 In the event the employment of the Contractor is terminated by the Owner for cause pursuant to Subparagraph 12.2.2 and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Subparagraph 12.2.1 and the provisions of Subparagraph 12.2.1 shall apply.

ARTICLE XIII: INSURANCE

13.1 CONTRACTOR SHALL MAINTAIN INSURANCE

13.1.1 The Contractor at his own expense shall purchase, maintain and keep in force during the life of this contract, adequate insurance that will protect the Contractor and/or any Additional Insured from claims which may arise out of or result from operations under this contract. The insurance required shall provide adequate protections from all claims, whether such operations be by the Contractor or by any Additional Insured or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts of any of them may be liable and from any special hazards, such as blasting, which may be encountered in the performance of this contract in the amounts as shown below in Paragraph 13.2.1.

13.1.2 The Contractor shall not commence work on any Contract in the City of Lancaster until the Contractor has obtained all the insurance required under this paragraph and such insurance has been approved by the City.

13.2 TYPES AND AMOUNTS OF INSURANCE

13.2.1. The Contractor shall furnish and maintain during the life of the contract adequate Insurance in such amounts as follows:

<u>Type of Insurance</u>	<u>Amount</u>
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Worker's Compensation as set forth in the Worker's Compensation Act.

Commercial General Liability

\$1,000,000 Each Accident/Occurrence. The policy shall have no coverage removed by exclusions.

Limit of Insurance per Project or Owner's and Contractor's Protective Liability Insurance for the Project.

Automobile Liability

\$500,000 Combined single limit per occurrence.

13.2 INSTALLATION FLOATER

This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverage's designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under builder's risk insurance.

13.3 Builders Risk

This insurance shall be written in completed value form

and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance.

Equipment installed under this contract shall be insured under installation floater insurance when the aggregate value of the equipment exceeds \$10,000.00.

If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

13.4 ADDITIONAL INSURED / PROJECT INFORMATION

The Owner shall be named as an additional insured on the Commercial General Liability (Public), Policies furnished by the Contractor.

The project name and bid/contract number shall be listed on the certificate.

13.5 WRITTEN NOTIFICATION

Each insurance policy shall contain a provision requiring that thirty (30) days prior to expiration, cancellation, non-renewal or any material change in coverage, a notice there of shall be given by certified mail to the Purchasing Agent, City of Lancaster, PO Box 940, Lancaster, Texas, 75146.

13.6 PREMIUMS AND ASSESSMENTS

Companies issuing the insurance policies shall have no recourse against the City for payment of any premiums or assessments for any deductibles which are at the sole responsibility and risk of the Contractor.

13.7 CERTIFICATE OF INSURANCE

Proof that the insurance is in force shall be furnished to the City of Lancaster on a Standard Certificate of Insurance Form. In the event any insurance policy shown on the Certificate of Insurance has an expiration date that is prior to the completion and final acceptance of the project by the City of Lancaster, the contractor shall furnish the City proof of identical continued coverage no later than thirty (30) days prior to the expiration date shown on the Certificate of Insurance.

13.8 PRIMARY COVERAGE

The coverage's provided herein shall be primary and noncontributory with any other insurance maintained by

the City of Lancaster, Texas, for its benefit, including self insurance.

13.9 WORKER'S COMPENSATION INSURANCE COVERAGE

13.9.1 The Contractor shall:

1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;

2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;

3) provide the governmental entity prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;

4) obtain from each person providing services on a project, and provide to the governmental entity:

(A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;

7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the Texas Worker's Compensation Commission on the sample notice, without any additional words or changes:

Required Workers' Compensation Coverage

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

and

(8) contractually require each person with whom it contracts to provide services on a project, to:

(A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;

(B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;

(C) include in all contracts to provide services on the project the language in subsection (e) (3) of this rule;

(D) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(E) obtain from each other person with whom it contracts, and provide to the Contractor:

(i) a certificate of coverage, prior to the other person beginning work on the project; and

(ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(H) contractually require each other person with whom it contracts, to perform as required

sub-paragraphs (A) - (H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

ARTICLE XIV: MISCELLANEOUS

14.1 LAWS AND ORDINANCES

14.1.1 The Contractor shall at all times and in all respects observe and comply with all federal, state and local laws, ordinances, and regulations applicable to the Project and Work. The Contractor shall further insure that all Subcontractors observe and comply with said laws, ordinances and regulations.

14.2 GOVERNING LAW

14.2.1 The Contract shall be governed by the laws of the State of Texas. Venue for any causes of action arising under the terms or provisions of this Contract or the Work to be performed hereunder shall be in the courts of Dallas County, Texas.

14.3 SUCCESSORS AND ASSIGNS

14.3.1 The Owner and Contractor bind themselves, their successors, assigns and legal representatives to the other party hereto and to successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in this Contract. The Contractor shall not assign this Contract without written consent of the Owner.

14.4 SURETY BONDS

14.4.1 If the Contract Price exceeds the sum of \$25,000.00, the Contractor shall furnish separate performance and payment bonds to the Owner, according to the requirements set out in the bid documents and state statutes to guaranty full and faithful performance of the Contract and the full and final payment of all persons supplying labor or materials to the Project. Each bond required by the bid documents or state statute shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds

furnished by the Contractor shall be in form suitable to the Owner and shall be executed by a surety, or sureties, reasonably suitable to the Owner and authorized to do business in the State of Texas by the State Board of Insurance.

14.4.2 If the Contract Price exceeds the sum of \$25,000.00, the Contractor, upon execution of the Contract and prior to commencement of the Work, shall furnish to the Owner a two-year maintenance bond in the amount of one hundred percent (100%) of the Contract Price covering the guaranty and maintenance prescribed herein, written by an approved surety authorized and duly licensed to conduct business in the State of Texas. The cost of said maintenance bond shall be included in the Contractor's unit bid prices and shall be paid by the Contractor.

14.5 SEVERABILITY

14.5.1 The provisions of this Contract are herein declared to be severable; in the event that any term, provision or part hereof is determined to be invalid, void or unenforceable, such determination shall not affect the validity or enforceability of the remaining terms, provisions and parts, and this Contract shall be read as if the invalid, void or unenforceable portion had not been included herein.

14.6 AMENDMENTS

14.6.1 This Contract may be amended by the parties only by a written agreement duly executed by both parties. The failure of the Owner to object to any nonperformance or nonconforming work or to enforce any provision hereof shall in no event be regarded as or construed to be a waiver, release or modification of any term or provision in this Contract, nor shall such failure to object or enforce stop the Owner from insisting on strict compliance with this Contract or from recovering damages, costs or expenses arising as a result of such nonperformance or nonconforming work.

14.7 NOTICES

14.6.1 All notices required by this Contract shall be presumed received when deposited in the mail properly addressed to the other party or Owner at the address set forth herein or set forth in a written designation of change of address delivered to all parties.

EXECUTED in single or multiple originals, this _____ day of December, 2012.

CITY OF LANCASTER

Opal Mauldin Robertson, City Manager

ATTEST:

Dolle K. Downe, City Secretary

C&M Concrete

Type/Print Name and Title

PO Box 381910
Duncanville, TX 75138

City of Lancaster, Texas (Purchasing)

Supplier Response

Bid Information		Contact Information		Ship to Information
Bid Creator	Dawn Berry Purchasing Agent	Address	PO Box 940	Address
Email	dberry@lancaster-tx.com		Lancaster, TX 75146	
Phone	(972) 218-1329	Contact	Dawn Berry	Contact
Fax	(972) 218-3621		Purchasing Agent	
			Purchasing	Department
Bid Number	2012-51 Addendum 2	Department		Building
Title	Concrete Repairs - Annual Contract	Building		
Bid Type	ITB-Weighted	Floor/Room		Floor/Room
Issue Date	09/12/2012	Telephone	(972) 218-1329	Telephone
Close Date	10/11/2012 2:00:00 PM CST	Fax	(972) 218-3621	Fax
Need by Date		Email	dberry@lancaster-tx.com	Email

Supplier Information

Company	C&M CONCRETE
Address	P.O BOX381910
	DUNCANVILLE, TX 75138
Contact	CHRIS BOWEN
Department	
Building	
Floor/Room	
Telephone	1 (972) 965-4781
Fax	1 (972) 709-9173
Email	
Submitted	10/10/2012 12:07:44 PM CST
Total	\$730.25

Signature _____

Supplier Notes

Bid Notes

Miscellaneous repair work to streets and sidewalks.

Bid Activities

Date	Name	Description
9/13/2012 8:00:00 AM	Week 1	Week 1 Advertisement - Focus News
9/20/2012 8:00:00 AM	Week 2	Week 2 Advertisement - Focus News
9/24/2012 2:00:00 PM	Pre-Bid Meeting	A pre-bid meeting will be held at: <p>211 N. Henry Lancaster, TX 75146

Bid Messages

Please review the following and respond where necessary

#	Name	Note	Response
1	Addendum 2: Bonding	The projects included in this contract will generally not exceed \$50,000. Because the projects do not exceed the bond threshold identified in the statute, the bonding requirement has been removed. However, should one of the individual projects exceed \$50,000; bonds will be required in the amount of that project. <P> The Due date and time have been extended by one week.	I Agree
2	Addendum 1	I have read and understand Addendum 1.	ACK
3	One Year - 4 Renewals	Length of this contract shall be for one (1) full year with the option to renew the contract for four additional one-year periods. Both parties must be in agreement.	Agree
4	Annual Contract	This agreement will contain a fixed pricing structure for the term of the agreement. Quantities shown are estimates and NOT a commitment to buy any specific quantity. Orders will be placed on a non-exclusive, "as needed", basis. Orders placed by the City of Lancaster will be done with a purchase order.	Agreed
5	Price Increases	Prices are firm for the first year. Any price increase after year one, must be justified and documentation submitted. Price increases may not exceed the current Consumer Price Index (U) for the D/FW Region.	Agree
6	Response Term	Responses shall be valid for ninety (90) calendar days after the opening date and shall constitute an irrevocable offer to the City of Lancaster for the 90 calendar day period. The 90 calendar day period may be extended by mutual agreement of the parties.	Agree
7	Terminology	Throughout this document, the terms Contractor, Bidder, Proposer, and/or Vendor may be used interchangeably. Reference to any of these terms throughout this document should be construed by the reader as meaning any bidder for the products/services being requested (e.g., Bidder, Proposer); or the bidder who has been awarded a bid/RFP or contract (e.g., Contractor, Vendor).	Agree
8	Payment Bond	A payment bond for any individual project exceeding \$50,000 in the amount of 100% of the individual project amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood
9	Performance Bond	A performance bond for any individual project exceeding \$50,000 in the amount of 100% of the individual project amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood

10	Maintenance Bond	A maintenance bond for any individual project exceeding \$50,000 in the amount of 100% of the individual project amount will be required from the awarded vendor.	Understood
		A sample document is attached and must be used by issuing bonding agent.	
11	Contractor Registration	The awarded vendor will be required to register with the City as a contractor. The current fee is \$100. Application is available at www.lancaster-tx.com or at Building Inspection. <BLOCKQUOTE>700 E. Main Street Lancaster, TX 75146 Hours of operation M-Th 7:00 AM - 5:30 PM.	Understood
12	Company Ownership	Is your company currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, please explain the impact both in organizational and directional terms.	NO
13	Difficulties	What difficulties do you anticipate in serving the City? How do you plan to manage these and what assistance will you require from the City? Describe your firm's past performance on other contracts for the City (e.g. cost control, cost savings, schedule control).	NONE HAVE DONE MUNICIPALITY WORK FOR 15 YEARS
14	Electronic Payment	If you would like your payment sent electronically (EFT), please provide your accounts receivable contact information. Please provide name and email.	YES
15	Financial Default	Is your company currently in default on any loan agreement or financing agreement with any bank, financial institution or other entity? If yes, specify date(s), details, circumstances, and prospects for resolution.	NO
16	Litigation with City of Lancaster	Is your firm involved in any litigation (past or pending) with the city of Lancaster? If yes, please provide details.	NO
17	NEPOTISM STATEMENT	The Bidder or Proposer or any officer, if the Bidder or Proposer is other than an individual, shall state whether Bidder or Proposer has a relationship, either by blood or marriage, with any official or employee of the City of Lancaster:	Not Related
18	Non-Performance	Identify if your firm has had any contracts terminated due to non-performance over the past five (5) years.	no
19	Open Records Act	All responses will be maintained confidential until award is finalized. At that time, all proposals are subject to the Open Records Act.	Agreed
20	PROPERTY TAXES	Please indicate whether you or your company, owe delinquent property taxes to the City whether an assumed name, partnership, corporation, or any other legal form.	Do Not
21	Website Address	Enter product website information	bowenchris1@aol.com

22	Cooperative Agreement	Should other Government Entities decide to participate in this contract, would you, the Vendor, agree that all terms, conditions, specifications, and pricing would apply?	Yes
		If you, the Vendor checked yes, the following will apply: Government entities utilizing Inter-Governmental Contracts with the City of Lancaster will be eligible, but not obligated, to purchase materials/services under this contract(s) awarded as a result of this bid. All purchases by Governmental Entities other than the City of Lancaster will be billed directly to that Governmental Entity and paid by that Governmental Entity. The City of Lancaster will not be responsible for another Governmental Entity's debts. Each Governmental Entity will order their own material/service as needed.	
23	T&C Acknowledgement	I have read and agree to the terms and conditions of this bid.	Agreed
24	Bid Acknowledgement	Bidder affirms that they have read and understand all requirements of this proposal. Additionally, the bidder affirms that they are duly authorized to execute this contract and that this company has not prepared this proposal in collusion with any other proposer, and that the contents of this proposal as to prices, terms or conditions of said proposal have not been communicated by the bidder nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this type of business prior to the official opening of this proposal.	Agreed
25	Insurance	Vendor shall provide insurance as listed in the insurance requirements attached.	Understood
26	County	What county is your principal place of business located?	DALLAS
27	Immigration	Employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the US) and aliens authorized to work in the US. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verification Form (I9). The Contractor shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment.	(No Response Required)
28	Contractor Responsibility	Keep project area in a safe and clean environment at all times during the contract period. Ensure all work is executed in accordance with OSHA (Occupational Safety and Health Administration) Requirements. Contractor must ensure that all Federal, State, and Local regulation are met.	(No Response Required)
29	Damage	Contractors are responsible for repairs caused by their negligence for any damage to public right of way and/or private property.. Repairs must be completed prior to final acceptance of job for payment.	(No Response Required)
30	Workmanship	All work and workmanship must be of good quality and adhere to all applicable laws and regulations. Contractor must possess all necessary licenses.	(No Response Required)
31	Questions	All questions shall be addressed to Dawn Berry, Purchasing Agent via email at purchasing@lanaster-tx.com.	Agree

32	Laws and ordinances	The Contractor shall at all times observe and comply with all Federal, State, and local laws, ordinances and regulations which in any manner affect the Contract or the work.	Understood
33	Work Hours	Working hours are not to begin prior to 7:00 AM or extend past 5:00 PM without prior written approval.	Understood
34	Payment Terms	The City of Lancaster's payment terms are Net 30.	Agreed
35	Road & Lane Closures	Road or lane closures must be approved in writing at least 48 hours prior to closing by the City Engineer.	Agreed
36	Change Orders	No oral statement of any person shall modify or otherwise change, or affect the terms, conditions, or specifications stated in the resulting contract. All change orders to the contract will be made in writing by the city of Lancaster.	Agreed
37	Late Submission	Bids/RFPs are not accepted after the closing date and time. The City of Lancaster is not responsible computer, mail or carrier issues/problems. The server time located in the top right corner of this software is the official clock. It is the responsibility of the user to ensure you have chosen the correct time zone for your company.	Understood
38	MODIFICATION OF A SUBMITTED BID / PROPOSALS	A proposer may modify a response electronically by logging into the e-procurement system and retracting their bid. Changes can be made up to the closing date and time. It is the vendor's responsibility to save any changes and re-submit their response.	Understood
39	AWARD OF CONTRACT	The contractor shall not commence work under these terms and conditions of the contract until all applicable Certificates of Insurance, Performance and Payment Bonds and have been approved by the City of Lancaster and he/she has received notice to proceed in writing and an executed copy of the contract from the City of Lancaster.	Agreed
40	Deviation	<p>DEVIATIONS: In the event, you the Proposer, intends to deviate from the general terms, conditions, special conditions or specifications contrary to those listed in the "Terms and Conditions" and other information attached hereto, all such deviations must be detailed and uploaded in the RESPONSE ATTACHMENTS section of the e-pro system with the description DEVIATION.</p> <p><P>NO DEVIATIONS: In the absence of any deviation, Proposer assures the City of Proposer's compliance with the Terms, Conditions, Specifications, and information contained in this RFP.</p>	None
41	Award	Response to specifications, location of vendor, history/relationship, price and vendor's ability to perform the work are the primary factors in determining the lowest responsible bid.	(No Response Required)
42	Contractor Independence	Contractor will operate as an independent contractor and not an agent, representative, partner, or employee of the City of Lancaster, and shall control his operations at the work site, and be solely responsible for the acts or omissions of his employee(s). All wages, taxes, and worker's compensation of all contract employees shall be paid by the contractor.	(No Response Required)
43	MWBE 1	Is your company M/WBE or HUB certified?	No

- 44 MWBE 2 If yes, what is your certification number?
- 45 MWBE 3 If yes, what agency completed the certification?
- 46 MWBE 4 If yes, what is the expiration date of your certification?
- 47 BID PROTESTS All protests regarding the bid solicitation process must be submitted in writing to the Purchasing Agent within five (5) working days following the opening of bids. This includes all protests relating to advertising of bid notices, deadlines, bid opening, and all other related procedures under the Local Government Code, as well as protests relating to alleged improprieties or ambiguities in the specifications.
<p>

The limitation does not include protests relating to staff recommendations as to award of a bid. Protests relating to staff recommendations may be directed to the City Council by contacting the City Secretary PRIOR to Council Award. Agreed
- 48 Reciprocal Information 1 The City of Lancaster, as a governmental agency of the State of Texas, may not award a contract for general construction, improvements, services or public works projects or purchases of supplies, materials, or equipment to a non-resident bidder unless the non-resident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a non-resident bidder to obtain a comparable contract in the state in which the non-resident's principal place of business is located (Article 601g v.t.c.s.). Bidder shall answer all the following questions by encircling the appropriate response or completing the blank provided.
<p>**Where is your principal place of business? Texas
- 49 Reciprocal Information 2 For Businesses not located in Texas, does your state favor resident bidders (bidders in your state) by some dollar increment or percentage? N/A
- 50 Reciprocal Information 3 If Yes, What is the dollar increment or percentage? none
- 51 Notification How did you here about this bid opportunity? e-pro
- 52 Plan Room - Other If yes for a plan room or other, please list which plan room or other means of notification.

Line Items

#	Qty	UOM	Description	Response
1	1	SF	Unit Price for repairs less than 500 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.00
Item Notes:				
Supplier Notes:				
2	1	SF	Unit Price for repairs 501 - 4,000 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$3.50
Item Notes:				
Supplier Notes:				
3	1	SF	Unit Price for repairs 4,001 - 10,000 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$3.25
Item Notes:				
Supplier Notes:				
4	1	SF	Unit Price for repairs less than 500 SF. <P> Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$6.50
Item Notes:				
Supplier Notes:				
5	1	SF	Unit Price for repairs 501 - 4,000 SF. <P> Remove & Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$5.00
Item Notes:				
Supplier Notes:				
6	1	SF	Unit Price for repairs 4,001 - 10,000 SF. <P> Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.50
Item Notes:				
Supplier Notes:				

7	1	SF	Unit Price for repairs less than 500 SF. <P> Remove and Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$6.75
Item Notes:				
Supplier Notes:				
8	1	SF	Unit Price for repairs 501 - 4,000 SF. <P> Remove & Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$6.25
Item Notes:				
Supplier Notes:				
9	1	SF	Unit Price for repairs 4,001 - 10,000 SF. <P> Remove & Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	\$4.50
Item Notes:				
Supplier Notes:				
10	1	SY	Unit Price for repairs less than 500 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	\$65.00
Item Notes:				
Supplier Notes:				
11	1	SY	Unit Price for repairs 501 - 1,000 SY. <P> Remove & Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	\$65.00
Item Notes:				
Supplier Notes:				
12	1	SY	Unit Price for repairs less than 100 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$65.00
Item Notes:				
Supplier Notes:				

13	1	SY	Unit Price for repairs 101 - 400 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$63.00
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Item Notes:

Supplier Notes:

14	1	SY	Unit Price for repairs less than 50 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$63.00
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Item Notes:

Supplier Notes:

15	1	SY	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$63.00
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Item Notes:

Supplier Notes:

16	1	SY	Unit Price for repairs less than 100 SY. <P> Remove and Replace 6" reinforced 4,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$66.00
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Item Notes:

Supplier Notes:

17	1	SY	Unit Price for repairs 101 - 400 SY. <P> Remove and Replace 6" reinforced 4,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$66.00
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Item Notes:

Supplier Notes:

18	1	SY	Unit Price for repairs less than 500 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete curb with 12" Gutter with limestone aggregate, no Fly Ash, complete in place.	\$18.00
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Item Notes:

Supplier Notes:

19	1	SY	Unit Price for repairs 501 - 1,000 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete curb with 12" Gutter with limestone aggregate, no Fly Ash, complete in place.	\$12.00
Item Notes:				
Supplier Notes:				
20	1	SY	Unit Price for repairs less than 50 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$70.00
Item Notes:				
Supplier Notes:				
21	1	SY	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	\$70.00
Item Notes:				
Supplier Notes:				
Response Total:				\$730.25

Bid Request Number 2012-51 Addendum 2
Title Concrete Repairs - Annual Contract
Description Miscellaneous repair work to streets and sidewalks.
Bid Type ITB-Weighted
Issue Date 9/12/2012 8:00:00 AM Central
Close Date 10/11/2012 2:00:00 PM Central

Responding Suppliers

Name	City	State	Response Submitted	Lines Respond	Response Total
LET Staffing	Lancaster	TX	9/27/2012 1:46:39 PM CST	21	\$0.00
Admiral Construction Co.	dallas	TX	9/27/2012 1:31:34 PM CST	21	\$691.30
C&M CONCRETE	DUNCANVILLE	TX	10/10/2012 12:07:45 PM CST	21	\$730.25
Axis Contracting, Inc	Dallas	TX	10/11/2012 11:22:11 AM CST	21	\$1,443.90
TWM Construction	Dallas	TX	9/19/2012 4:36:55 PM CST	9	\$13,000.00

Response Notes

Supplier	Line	Notes
TWM Construction	Header	Yes we can handle this all we need is size of areas..

BID TABULATION

2012-51 Addendum 2

Specification Responses

				Admiral Construction	C&M CONCRETE	Axis Contracting	TWM Construction
Line	Description	UOM	QTY	Unit	Unit	Unit	Unit
1	Unit Price for repairs less than 500 SF. <P>□ New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.00	\$4.00	\$4.50	\$2,000.00
2	Unit Price for repairs 501 - 4,000 SF. <P>□ New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.00	\$3.50	\$4.00	
3	Unit Price for repairs 4,001 - 10,000 SF. <P>□ New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.00	\$3.25	\$3.50	
4	Unit Price for repairs less than 500 SF. <P>□ Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.25	\$6.50	\$6.50	\$2,000.00
5	Unit Price for repairs 501 - 4,000 SF. <P>□ Remove & Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.25	\$5.00	\$6.00	
6	Unit Price for repairs 4,001 - 10,000 SF. <P>□ Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.25	\$4.50	\$5.50	
7	Unit Price for repairs less than 500 SF. <P>□ Remove and Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.95	\$6.75	\$6.80	\$2,000.00
8	Unit Price for repairs 501 - 4,000 SF. <P>□ Remove & Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.85	\$6.25	\$6.30	
9	Unit Price for repairs 4,001 - 10,000 SF. <P>□ Remove & Replace 6" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.75	\$4.50	\$5.80	
10	Unit Price for repairs less than 500 SY. <P>□ Remove and Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$45.00	\$65.00	\$75.00	\$2,000.00
11	Unit Price for repairs 501 - 1,000 SY. <P>□ Remove & Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$45.00	\$65.00	\$70.00	
12	Unit Price for repairs less than 100 SY. <P>□ Remove and Replace 6" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$45.00	\$65.00	\$95.00	\$400.00
13	Unit Price for repairs 101 - 400 SY. <P>□ Remove and Replace 6" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$45.00	\$63.00	\$90.00	
14	Unit Price for repairs less than 50 SY. <P>□ Remove and Replace 6" reinforced 3,600 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$54.00	\$63.00	\$150.00	\$200.00

Specification Responses

				Admiral Construction	C&M CONCRETE	Axis Contracting	TWM Construction
Line	Description	UOM	QTY	Unit	Unit	Unit	Unit
15	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$54.00	\$63.00	\$95.00	
16	Unit Price for repairs less than 100 SY. <P> Remove and Replace 6" reinforced 4,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$54.00	\$66.00	\$100.00	\$400.00
17	Unit Price for repairs 101 - 400 SY. <P> Remove and Replace 6" reinforced 4,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$54.00	\$66.00	\$95.00	
18	Unit Price for repairs less than 500 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete curb with 12" Gutter with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$65.00	\$18.00	\$180.00	\$2,000.00
19	Unit Price for repairs 501 - 1,000 SY. <P> Remove and Replace 6" reinforced 3,000 PSI concrete curb with 12" Gutter with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$65.00	\$12.00	\$180.00	
20	Unit Price for repairs less than 50 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$63.00	\$70.00	\$150.00	\$2,000.00
21	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$63.00	\$70.00	\$115.00	

Alternate Responses

Line	Description	UOM	QTY	Unit	Supplier
1 Alt	Unit Price for repairs less than 500 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.00	Admiral Construction Co.
1 Alt	Unit Price for repairs less than 500 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.00	Admiral Construction Co.
1 Alt	Unit Price for repairs less than 500 SF. <P> New 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	EA	1	\$0.00	TWM Construction
6 Alt	Unit Price for repairs 4,001 - 10,000 SF. <P> Remove and Replace 4" reinforced 3,000 PSI concrete sidewalk with limestone aggregate, no Fly Ash, complete in place.	SF	1	\$4.25	Admiral Construction Co.
10 Alt	Unit Price for repairs less than 500 SY. <P> Remove and Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$45.00	Admiral Construction Co.
11 Alt	Unit Price for repairs 501 - 1,000 SY. <P> Remove & Replace 6" reinforced 3,600 PSI concrete alley with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$45.00	Admiral Construction Co.
21 Alt	Unit Price for repairs 51 - 150 SY. <P> Remove and Replace 8" reinforced 3,000 PSI concrete street paving with limestone aggregate, no Fly Ash, complete in place.	SY	1	\$63.00	Admiral Construction Co.

Specification Responses

			Admiral Construction	C&M CONCRETE	Axis Contracting	TWM Construction
Line	Description	UOM QTY	Unit	Unit	Unit	Unit

No Bid: LET Staffing

Bid Reque 2012-51 Addendum 2

Specification Responses			LET Staffing	Admiral Construction Co.
Line	Attribute Name	Type	Response	Response
Header	Addendum 2: Bonding	Checkbox		
Header	Addendum 1	Checkbox	ACK	ACK
Header	One Year - 4 Renewals	Checkbox	Agree	Agree
Header	Annual Contract	Checkbox	Agreed	Agreed
Header	Price Increases	Checkbox	Agree	Agree
Header	Response Term	Checkbox	Agree	Agree
Header	Terminology	Checkbox	Agree	Agree
Header	Payment Bond	Checkbox	Understood	Understood
Header	Performance Bond	Checkbox	Understood	Understood
Header	Maintenance Bond	Checkbox	Understood	Understood
Header	Contractor Registration	Checkbox	Understood	Understood
Header	Company Ownership	Long Text	100% Women Minority Ow	No
Header	Difficulties	Long Text		none,none,no work has be
Header	Electronic Payment	Short Text	Valerie Johnson vjohnson@	I dont want this service.
Header	Financial Default	Long Text	No	No
Header	Litigation with City of Lancaster	Long Text	No	No
Header	NEPOTISM STATEMENT	List of Values	Not Related	Not Related
Header	Non-Performance	Long Text	None	N/A
Header	Open Records Act	Checkbox	Agreed	Agreed
Header	PROPERTY TAXES	List of Values	Do Not	Do Not
Header	Website Address	URL	www.letstaffing.com	I dont have one.
Header	Cooperative Agreement	List of Values	Yes	Yes
Header	T&C Acknowledgement	Checkbox	Agreed	Agreed
Header	Bid Acknowledgement	Checkbox	Agreed	Agreed
Header	Insurance	Checkbox	Understood	Understood
Header	County	Short Text	USA	Dallas
Header	Immigration	Note		
Header	Contractor Responsibility	Note		
Header	Damage	Note		
Header	Workmanship	Note		
Header	Questions	Checkbox	Agree	Agree
Header	Laws and ordenances	Checkbox	Understood	Understood
Header	Work Hours	Checkbox	Understood	Understood
Header	Payment Terms	Checkbox	Agreed	Agreed
Header	Road & Lane Closures	Checkbox	Agreed	Agreed
Header	Change Orders	Checkbox	Agreed	Agreed
Header	Late Submission	Checkbox	Understood	Understood
Header	MODIFICATION OF A SUBMIT	Checkbox	Understood	Understood
Header	AWARD OF CONTRACT	Checkbox	Agreed	Agreed
Header	Deviation	List of Values	None	None
Header	Award	Note		
Header	Contractor Independence	Note		
Header	MWBE 1	List of Values	yes	yes
Header	MWBE 2	Short Text		BMDB51154Y1112
Header	MWBE 3	Short Text		NCTRCA
Header	MWBE 4	Short Text		November 2012
Header	BID PROTESTS	Checkbox	Agreed	Agreed
Header	Reciprocal Information 1	List of Values	Texas	Texas

Header	Reciprocal Information 2	List of Values	N/A	N/A
Header	Reciprocal Information 3	Short Text	N/A	N/A
Header	Notification	List of Values	e-pro	Other
Header	Plan Room - Other	Short Text		Amtek Informational Service

<u>C&M CONCRETE</u>	<u>Axis Contracting, Inc</u>	<u>TWM Construction</u>
Response	Response	Response
I Agree	I Agree	
ACK	ACK	
Agree	Agree	Agree
Agreed	Agreed	Agreed
Agree	Agree	Agree
Agree	Agree	Agree
Agree	Agree	Agree
Understood	Understood	Understood
Understood	Understood	Understood
Understood	Understood	Understood
Understood	Understood	Understood
NO	No	no
NONE HAVE DONE MUNI	None	none
YES	N/A	no
NO	No	no
NO	No	no
Not Related	Not Related	Not Related
no	None	none
Agreed	Agreed	Agreed
Do Not	Do Not	Do Not
bowenchris1@aol.com	N/A	Twmconstruction@att.net
Yes	Yes	Yes
Agreed	Agreed	Agreed
Agreed	Agreed	Agreed
Understood	Understood	Understood
DALLAS	Dallas	Dallas
Agree	Agree	Agree
Understood	Understood	Understood
Understood	Understood	Understood
Agreed	Agreed	Agreed
Agreed	Agreed	Agreed
Agreed	Agreed	Agreed
Understood	Understood	Understood
Understood	Understood	Understood
Agreed	Agreed	Agreed
None	None	None
No	yes	No
	NCTRCA	
	WFDB52862Y0313	
	03/2013	
Agreed	Agreed	Agreed
Texas	Texas	Texas

N/A	N/A	N/A
none	0	\$0.00
e-pro	e-pro	Other

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 4

Consider a resolution authorizing the award of Bid 2012-45 to Landmark Structures I L.P., in an amount not to exceed \$3,245,000 for the construction of the new 2.0 MG Elevated Storage Tank generally located approximately 135 linear feet west of Katrina Drive on Wintergreen Road.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Sound Infrastructure

Background

On December 9, 2010, the Texas Commission on Environmental Quality (TCEQ) performed a Compliance Evaluation Investigation of the City of Lancaster water distribution system. This item is for the construction of a new 2 MG elevated storage tank to come into compliance with the TCEQ elevated storage requirement. The new tank will provide for future growth and development. The agreed upon schedule with the TCEQ to complete this project is end of December 2013.

Freese and Nichols Inc. (FNI) Engineers has been selected as the Project Manager for the City to perform services in connection with the Two (2) Million Gallon Elevated Water Storage Tank. To date, FNI has completed work on the site selection, tank design and the bid process. The project has been progressing as expected and the design plans have been approved by the State. All other necessary clearances have been obtained.

Considerations

This is a request for consideration to authorize a contract to Landmark Structures I, L.P. to construct the new 2.0 MG Elevated Storage tank along Houston School Road and Wintergreen Road. A bid for the construction of the tank, Bid Number 2012-45 was advertised in October-November 2012. A total of three bids were submitted electronically. Landmark Structures submitted the lowest qualified bid of \$2,665,000 for the Elevated Storage Tank and \$580,000 on supporting waterline items, for a total amount of \$3,245,000. FNI and City staff has reviewed all three bids.

FNI recommended Landmark Structures. The City Engineer and Water/Wastewater Superintendent have checked multiple references for the contractor and made site visits to various other tank locations within the metroplex. Staff has received positive responses from all references. The Bid Recommendation and the contract document are attached. Staff requests that council approve the resolution authorizing the award of Bid 2012-45 for the

construction of the 2.0 MG elevated water tank to resolve our violation with the TCEQ.

- **Operational** - The project will be managed by the Engineering and Water/Wastewater Divisions of the Public Works & Development Services Department. The new 2 MG elevated tower will satisfy TCEQ requirements.
- **Legal** - This bid was processed in accordance with all local and state purchasing statutes. Three bids were received. Contract documents and resolution were reviewed and approved by the City Attorney.
- **Financial** - Bonds were issued in 2011 for the project.
- **Public Information** - Bids were advertised on October 17 & 24, 2012 on the City's e-procurement system. Bids were opened on November 14, 2012. Residents and businesses along the proposed site will be notified by City Staff before construction begins. There are no other public information requirements.

Options/Alternatives

1. City Council may approve the resolution as presented.
2. City Council may reject the resolution.

Recommendation

Staff approval of the resolution as presented to award bid 2012-38 to Landmark Structures I, L.P.

Attachments

- Resolution
- Contract
- FNI Recommendation of Award letter
- Tab Sheet

Submitted by:

Shwetha Pandurangi, P.E., CFM, City Engineer
Dawn Berry, Purchasing Agent

RESOLUTION NO. 2012-12-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, AUTHORIZING THE AWARD OF BID 2010-45 TO LANDMARK STRUCTURES I, L.P. IN AN AMOUNT NOT TO EXCEED \$3,245,000 FOR CONSTRUCTION OF THE NEW 2.0 MG ELEVATED STORAGE TANK ALONG HOUSTON SCHOOL ROAD AND WINTERGREEN ROAD; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID AGREEMENT; PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Landmark Structures I, L.P. ("Landmark") will perform services in regards to construction, to the City of Lancaster; and

WHEREAS, the City Council of Lancaster desires to contract with Landmark for the above referenced services; and

WHEREAS, the new two (2) MG water tower will satisfy elevated storage capacity requirements of the Texas Commission on Environmental Quality (TCEQ) and future development;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That the City Council hereby approves and awards the bid 2012-45 for construction services, which is attached hereby, for basic services for an amount of two million six hundred and sixty five thousand dollars (\$2,665,000) for the Elevated Storage Tank and Five hundred and eighty thousand dollars (\$580,000) on Supporting Waterline items for a total not to exceed amount of three million, two hundred forty five thousand dollars (\$3,245,000).

SECTION 2. That the City Manager is hereby authorized to execute the Agreement, which is attached hereto and incorporated herein.

SECTION 3. That any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 4. That should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 5. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

DULY PASSED and approved by the City Council of the City of Lancaster, Texas, on this the 10th day of December 2012.

APPROVED:

Marcus E. Knight, Mayor

ATTEST:

Dolle K. Downe, City Secretary

APPROVED AS TO FORM:

Robert E. Hager, City Attorney

City of Lancaster, Texas

Standard Fixed Price Construction Agreement

This Agreement is made by and between the City of Lancaster, Texas, a home-rule municipality (hereinafter referred to as the "Owner") and Landmark Structures I, LP., (hereinafter referred to as the "Contractor") for construction of a 2.0 Million Gallon Elevated Storage Tank, (hereinafter referred to as the "Project"), the Owner and the Contractor hereby agree as follows:

ARTICLE I: CONTRACT & CONTRACT DOCUMENTS

1.1 THE CONTRACT

1.1.1 The Contract between the Owner and the Contractor, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it.

1.2 THE CONTRACT DOCUMENTS

1.2.1 The Contract Documents consist of this Agreement, the Invitation to Bid, Requirements and Instructions to Bidders, the Specifications, the Drawings, the Project Manual, all Change Orders and Field Orders issued hereafter, any other amendments hereto executed by the parties hereafter, together with the following (if any):

Documents not enumerated in this Paragraph 1.2.1 are not Contract Documents and do not form part of this Contract.

1.3 ENTIRE AGREEMENT

1.3.1 This Contract, together with the Contractor's performance, maintenance, and payment bonds for the Project, all General Conditions, Special Conditions, Plans and Specifications, and Addenda attached thereto, constitute the entire and exclusive agreement between the Owner and the Contractor with reference to the Project. Specifically, but without limitation, this Contract supersedes any bid documents and all prior written or oral communications, representations and negotiations, if any, between the Owner and Contractor not expressly made a part hereof.

1.4 NO PRIVACY WITH OTHERS

1.4.1 Nothing contained in this Contract shall create, or be interpreted to create, privacy or any other contractual agreement between the Owner and any person or entity other than the Contractor.

1.5 INTENT AND INTERPRETATION

1.5.1 The intent of this Contract is to require complete, correct and timely execution of the Work. Any Work that may be required, implied or inferred by the Contract Documents, or any one or more of them, as necessary to produce the intended result shall be provided by the Contractor for the Contract Price.

1.5.2 This Contract is intended to be an integral whole and shall be interpreted as internally consistent. What is required by any one Contract Document shall be considered as required by the Contract.

1.5.3 When a word, term or phrase is used in this Contract, it shall be interpreted or construed, first, as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

1.5.4 The words "include", "includes", or "including", as used in this Contract, shall be deemed to be followed by the phrase, "without limitation".

1.5.5 The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of this Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of this Contract.

1.5.6 Words or terms used as nouns in this Contract shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.5.7 The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the Shop Drawings, the Product Data, and any Plans and Specifications, and shall give written notice to the Owner of any inconsistency, ambiguity, error or omission which the Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance or the express or implied approval by the Owner or the Engineer of the Contract Documents, Shop Drawings, or Product Data shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. The Owner has requested the Engineer to only prepare documents for the Project, including the Drawings and Specifications for the Project, which are accurate, adequate, consistent, coordinated and sufficient for construction. **However, the owner makes no representation or warranty of any nature whatsoever to the contractor concerning such documents.** By the execution hereof, the Contractor acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not rely upon any representation or warranties by the Owner concerning such documents as no such representation or warranties have been or are hereby made. Further, the Contractor represents and warrants that it has had a su

and all responsibility for inadequacies or ambiguities in the plans, drawings or specifications as well as for latent conditions of the site where the work is to be performed.

1.5.8 As between numbers and scaled measurements on the Drawings and in the Design, the numbers shall govern, as between larger scale and smaller scale drawings, the larger scale shall govern.

1.5.9 Neither the organization of any of the Contract Documents into divisions, sections, paragraphs, articles, (or other categories), nor the organization or arrangement of the Design, shall control the Contractor in dividing the Work or in establishing the extent or scope of the Work to be performed by Subcontractors.

1.6 OWNERSHIP OF CONTRACT DOCUMENTS

1.6.1 The Contract Documents, and each of them, shall remain the property of the Owner. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided, however, that in no event shall Contractor use, or permit to be used, any or all of such Contract Documents on other projects without the Owner's prior written authorization.

ARTICLE II: THE WORK

2.1 The Contractor shall perform all of the Work required, implied or reasonably inferable from, this Contract.

2.2 WORK

2.2.1 The term "Work" shall mean whatever is done by or required of the Contractor to perform and complete its duties under this Contract, including the following: construction of the whole or a designated part of the Project; furnishing of any required surety bonds and insurance, and the provision or furnishing of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, permits and licenses required of the Contractor, fuel, heat, light, cooling and all other utilities as required by this Contract. The Work to be performed by the Contractor is generally described as follows:

Construction of 2.0 Million Gallon Elevated Storage Tank and all appurtenances.

All work shall be completed within 365 calendar days from notice to proceed. Time Extensions may be requested by the Contractor and authorized by the Director of Public Works/Development Services for good reason.

2.2.2 The Contractor shall be responsible for paying for and procuring all materials and labor and furnishing all services necessary or appropriate for the full performance of the Work and the for the full completion of the Project. All materials shall be new and materials and workmanship shall be of good quality. Upon request, the Contractor shall furnish satisfactory proof of the type, kind, and quality of materials.

ARTICLE III: CONTRACT TIME

3.1 TIME AND LIQUIDATED DAMAGES

3.1.1 The Contractor shall commence the Work within 10 days of receipt of a written Notice to Proceed, and shall achieve Substantial Completion of the Work no later than three hundred and sixty-five (365) calendar days from the date specified in the Notice to Proceed. The parties acknowledge that time is of the essence in the performance of the terms of this Contract. The term "substantial completion" shall mean that the elevated tank is operating as part of the City of Lancaster water system, passing all bacteriological and pressure tests with SCADA system communication to the pump station. It does not include installation of the second floor, driveways, fencing, final site grading, or operations of the backup generator or propane tank. The term "final completion" shall mean that all work is complete and accepted by the City. The term "calendar days" shall mean any and all days of the week or month, no days being excepted. It is contemplated by the parties that the progress of the Work may be delayed by certain conditions beyond the control of the parties; these delays have been contemplated by the parties and considered in the time allotted for performance specified herein and includes, but is not limited to delays occasioned on account of adverse weather, temporary unavailability of materials, shipment delays, and the presence and potential interference of other contractors who may be performing work at the Project site unrelated to this agreement.

The number of calendar days from the date on which the Work is permitted to proceed, through the date set forth for Substantial Completion, shall constitute the "Contract Time".

3.1.2 The Contractor shall pay the Owner the sum of **\$500.00** per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Final Completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that Substantial Completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

3.1.3 In the event that the Contractor achieves certification of substantial completion prior to the scheduled completion date, the Owner shall pay

Contractor the sum of \$0.00 per day for each calendar day that substantial completion is certified in advance of the scheduled completion date.

3.1.4 No claim shall be made by the Contractor to the Owner, and no damages, costs or extra compensation shall be allowed or paid by the Owner to the Contractor for any delay or hindrance from any cause in the progress or completion of the Work or this Contract. The Contractor's sole remedy in the event of any delay or hindrance shall be to request time extensions by written change orders as provided for hereinafter. Should the Contractor be delayed by an act of the Owner, or should the Owner order a stoppage of the Work for sufficient cause, an extension of time shall be granted by the Owner by written authorization upon written application, which extension shall not be unreasonably denied, to compensate for the delay.

3.1.5 The Owner shall have the authority to suspend the Work wholly or in part for such period or periods of time as it may deem appropriate due to unsuitable conditions considered unfavorable for the proper prosecution of the Work or for the failure of the Contractor to carry out instructions from the Owner or Owner's representative. During any period in which the Work is stopped or during which any of the Work is not actively in progress for any reason, Contractor shall properly protect the site and the Work from damage, loss or harm.

3.2 SUBSTANTIAL COMPLETION

3.2.1 "Substantial Completion" shall mean that stage in the progression of the Work when the Work is sufficiently complete in accordance with this Contract that the Owner can enjoy beneficial use or occupancy of the Work and can utilize the Work for its intended purpose, even though minor miscellaneous work and/or adjustment may be required.

3.3 TIME IS OF THE ESSENCE

3.3.1 All limitations of time set forth in the Contract Documents are of the essence of this Contract.

ARTICLE IV: CONTRACT PRICE

4.1 THE CONTRACT PRICE

4.1.1 The Owner shall pay, and the Contractor shall accept, as full and complete payment for all of the Work required herein, the fixed sum of \$3,245,000.00.

The sum set forth in this Paragraph 4.1 shall constitute the Contract Price which shall not be modified except by written Change Order as provided in this Contract.

ARTICLE V: PAYMENT OF THE CONTRACT PRICE

5.1 SCHEDULE OF VALUES

5.1.1 Within ten (10) calendar days of the effective date hereof, the Contractor shall submit to the Owner and/or to the Engineer a Schedule of Values allocating the Contract Price to the various portions of the Work. The Contractor's Schedule of Values shall be prepared in such form, with such detail, and supported by such

data as the Engineer or the Owner may require to substantiate its accuracy. The Contractor shall not imbalance the Schedule of Values nor artificially inflate any element thereof. The violation of this provision by the Contractor shall constitute a material breach of this Contract. The Schedule of Values shall be used only as a basis for the Contractor's Applications for Payment and shall only constitute such basis after it has been acknowledged and accepted in writing by the Engineer and the Owner.

5.2 PAYMENT PROCEDURE

5.2.1 The Owner shall pay the Contract Price to the Contractor as provided below.

5.2.2 **PROGRESS PAYMENTS** - Based upon the Contractor's Applications for Payment submitted to the Engineer and upon Certificates for Payment subsequently issued to the Owner by the Engineer, the Owner shall make progress payments to the Contractor on account of the Contract Price.

5.2.3 On or before the 25th day of each month after commencement of the Work, the Contractor shall submit an Application for Payment for the period ending the 15th day of the month to the Engineer in such form and manner, and with such supporting data and content, as the Owner or the Engineer may require. Therein, the Contractor may request payment for ninety percent (90%) of that portion of the Contract Price properly allocable to Contract requirements properly provided, labor, materials and equipment properly incorporated in the Work, less the total amount of previous payments received from the Owner. Such Application for Payment shall be signed by the Contractor and shall constitute the Contractor's representation that the Work has progressed to the level for which payment is requested in accordance with the Schedule of Values, that the Work has been properly installed or performed in full compliance with this Contract, and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the Engineer will review the Application for Payment and may also review the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by this Contract. The Engineer shall determine and certify to the Owner the amount properly owing to the Contractor. The Owner shall make partial payments on account of the Contract Price to the Contractor within thirty (30) days following the Engineer's receipt and approval of each Application for Payment. The amount of each partial payment shall be the amount certified for payment by the Engineer less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by this Contract. The Engineer's certification of the Contractor's Application for Payment shall not preclude the Owner from the exercise of any of its rights as set forth in Paragraph 5.3 below.

5.2.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass

Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which payments have been received from the Owner shall be free and clear of liens, claims, security interest or other encumbrances in favor of the Contractor or any other person or entity whatsoever.

5.2.5 The Contractor shall promptly pay each Subcontractor out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which such Subcontractor is entitled. In the event the Owner becomes informed that the Contractor has not paid a Subcontractor as herein provided, the Owner shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such Subcontractor as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

5.2.6 No progress payment, nor any use or occupancy of the Project by the owner, shall be interpreted to constitute an acceptance of any Work not in strict accordance with this Contract.

5.3 WITHHELD PAYMENT

5.3.1 The Owner may decline to make payment, may withhold funds, and, if necessary, may demand the return of some or all of the amounts previously paid to the Contractor, to protect the Owner from loss because of:

- (a) defective Work not remedied by the Contractor nor, in the opinion of the Owner, likely to be remedied by the Contractor;
- (b) claims of third parties against the Owner or the Owner's property;
- (c) failure by the Contractor to pay Subcontractors or others in a prompt and proper fashion;
- (d) evidence that the balance of the Work cannot be completed in accordance with the Contract for the unpaid balance of the Contract Price,
- (e) evidence that the Work will not be completed in the time required for substantial or final completion;
- (f) persistent failure to carry out the Work in accordance with the Contract;
- (g) damage to the Owner or a third party to whom the Owner is, or may be, liable.

In the event that the Owner makes written demand upon the Contractor for amounts previously paid by the Owner as contemplated in this Subparagraph 5.3.1, the Contractor shall promptly

comply with such demand. The Owner shall have no duty to third parties to withhold payment to the Contractor and shall incur no liability for a failure to withhold funds.

5.4 UNEXCUSED FAILURE TO PAY

5.4.1 If within fifteen (15) days after the date established herein for payment to the Contractor by the Owner, the Owner, without cause or basis hereunder, fails to pay the Contractor any amount then due and payable to the Contractor, then the Contractor may after ten (10) additional days' written notice to the Owner and the Engineer, and without prejudice to any other available rights or remedies it may have, stop the Work until payment of those amounts due from the Owner have been received. Late payments shall not accrue interest or other late charges.

5.5 SUBSTANTIAL COMPLETION

5.5.1 When the Contractor believes that the Work is substantially complete, the Contractor shall submit to the Engineer a list of items to be completed or corrected. When the Engineer on the basis of an inspection determines that the Work is in fact substantially complete, it will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. . The Certificate of Substantial Completion shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in such certificate.

Upon Substantial Completion of the Work, and execution by both the Owner and the Contractor of the Certificate of Substantial Completion, the Owner shall pay the Contractor an amount sufficient to increase total payments to the Contractor to one hundred percent (100%) of the Contract Price **less 5% for** completing all incomplete Work, correcting and bringing into conformance all defective and nonconforming Work, and handling all unsettled claims.

5.6 COMPLETION AND FINAL PAYMENT

5.6.1 When all of the Work is finally complete and the Contractor is ready for a final inspection, it shall notify the Owner and the Engineer thereof in writing. Thereupon, the Engineer will make final inspection of the Work and, if the Work is complete in full accordance with this Contract and this Contract has been fully performed, the Engineer will promptly issue a final Certificate for Payment certifying to the Owner that the Project is complete and the Contractor is entitled to the remainder of the unpaid Contract Price, less any amount withheld pursuant to this Contract. If the Engineer is unable to issue its final Certificate for Payment and is required to repeat its final inspection of the Work, the Contractor shall bear the cost of such repeat final inspection(s) which cost may be deducted by the Owner from the Contractor's final payment. **Guarantees required**

Contract shall commence on the date of Final Completion of the Work

5.6.1.1 If the Contractor fails to achieve final completion within the time fixed by the Engineer in its Certificate of Substantial Completion, the Contractor shall pay the Owner the sum of \$500 per day as liquidated damages for each and every calendar day of unexcused delay in achieving final completion beyond the date set forth herein for final completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that final completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving final completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

5.6.2 The Contractor shall not be entitled to final payment unless and until it submits to the Engineer its affidavit that all payrolls, invoices for materials and equipment, and other liabilities connected with the Work for which the Owner, or the Owner's property might be responsible, have been fully paid or otherwise satisfied; releases and waivers of lien from all Subcontractors of the Contractor and of any and all other parties required by the Engineer or the Owner; consent of Surety, if any, to final payment. If any third party fails or refuses to provide a release of claim or waiver of lien as required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner to discharge any such lien or indemnify the Owner from liability.

5.6.3 The Owner shall make final payment of all sums due the Contractor within ten (10) days of the Engineer's execution of a final Certificate for Payment.

5.6.4 Acceptance of final payment shall constitute a waiver of all claims against the Owner by the Contractor except for those claims previously made in writing against the Owner by the Contractor, pending at the time of final payment, and identified in writing by the Contractor as unsettled at the time of its request for final payment.

5.6.5 Under no circumstance shall Contractor be entitled to receive interest on any payments or monies due Contractor by the Owner, whether the amount on which the interest may accrue is timely, late, wrongfully withheld, or an assessment of damages of any kind.

ARTICLE VI: THE OWNER

6.1 INFORMATION, SERVICES AND THINGS REQUIRED FROM OWNER

6.1.1 The Owner shall furnish to the Contractor, at the time of executing this Contract, any and all written and tangible material in its possession concerning conditions below ground at the site of the Project.

Such written and tangible material is furnished to the Contractor only in order to make complete disclosure of such material and for no other purpose. By furnishing such material, the Owner does not represent, warrant, or guarantee its accuracy either in whole, in part, implicitly or explicitly, or at all, and shall have no liability therefore. The Owner shall also furnish surveys, legal limitations and utility locations (if known), and a legal description of the Project site.

6.1.2 Excluding permits and fees normally the responsibility of the Contractor, the Owner shall obtain all approvals, easements, and the like required for construction and shall pay for necessary assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

6.1.3 The Owner shall furnish the Contractor, free of charge, one copy of the Contract Documents for execution of the Work.

6.2 RIGHT TO STOP WORK

6.2.1 If the Contractor persistently fails or refuses to perform the Work in accordance with this Contract, or if the best interests of the public health, safety or welfare so require, the Owner may order the Contractor to stop the Work, or any described portion thereof, until the cause for stoppage has been corrected, no longer exists, or the Owner orders that Work be resumed. In such event, the Contractor shall immediately obey such order.

6.3 OWNER'S RIGHT TO PERFORM WORK

6.3.1 If the Contractor's Work is stopped by the Owner under Paragraph 6.2, and the Contractor fails within seven (7) days of such stoppage to provide adequate assurance to the Owner that the cause of such stoppage will be eliminated or corrected, then the Owner may, without prejudice to any other rights or remedies the Owner may have against the Contractor, proceed to carry out the subject Work. In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the cost of correcting the subject deficiencies, plus compensation for the Engineer's additional services and expenses necessitated thereby, if any. If the unpaid portion of the Contract Price is insufficient to cover the amount due the Owner, the Contractor shall pay the difference to the Owner.

ARTICLE VII: THE CONTRACTOR

7.1 The Contractor is again reminded of its continuing duty set forth in Subparagraph 1.5.7. The Contractor shall perform no part of the Work at any time without adequate Contract Documents or

appropriate, approved Shop Drawings, Product Data or Samples for such portion of the Work. If the Contractor performs any of the Work knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Engineer, the Contractor shall bear responsibility for such performance and shall bear the cost of correction.

7.2 The Contractor shall perform the Work strictly in accordance with this Contract.

7.3 The Contractor shall supervise and direct the Work using the Contractor's best skill, effort and attention. The Contractor shall be responsible to the Owner for any and all acts or omissions of the Contractor, its employees and others engaged in the Work on behalf of the Contractor.

7.3.1 The Contractor shall give adequate attention to the faithful prosecution of the Work and the timely completion of this Contract, with authority to determine the manner and means of performing such Work, so long as such methods insure timely completion and proper performance.

7.3.2 The Contractor shall exercise all appropriate means and measures to insure a safe and secure jobsite in order to avoid and prevent injury, damage or loss to persons or property.

7.4 WARRANTY

7.4.1 The Contractor warrants to the Owner that all labor furnished to progress the Work under this Contract will be competent to perform the tasks undertaken, that the product of such labor will yield only first-class results, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Contract, and that the Work will be of good quality, free from faults and defects and in strict conformance with this Contract. All Work not conforming to these requirements may be considered defective.

7.5 The Contractor shall obtain and pay for all permits, fees and licenses necessary and ordinary for the Work. The Contractor shall comply with all lawful requirements applicable to the Work and shall give and maintain any and all notices required by applicable law pertaining to the Work.

7.6 SUPERVISION

7.6.1 The Contractor shall employ and maintain at the Project site only competent supervisory personnel. Absent written instruction from the Contractor to the contrary, the superintendent shall be deemed the Contractor's authorized representative at the site and shall be authorized to receive and accept any and all communications from the Owner or the Engineer.

7.6.2 Key supervisory personnel assigned by the Contractor to this Project are as follows:

NAME	FUNCTION
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So long as the individuals named above remain actively employed or retained by the Contractor, they shall perform the functions indicated next to their names unless the Owner agrees to the contrary in writing. In the event one or more individuals not listed above subsequently assume one or more of those functions listed above, the Contractor shall be bound by the provisions of this Subparagraph 7.6.2 as though such individuals had been listed above.

7.7 The Contractor, within fifteen (15) days of commencing the Work, shall submit to the Owner and the Engineer for their information, the Contractor's schedule for completing the Work. The Contractor's schedule shall be revised no less frequently than monthly (unless the parties otherwise agree in writing) and shall be revised to reflect conditions encountered from time to time and shall be related to the entire Project. Each such revision shall be furnished to the Owner and the Engineer. Failure by the Contractor to strictly comply with the provisions of this Paragraph 7.7 shall constitute a material breach of this Contract.

7.8 The Contractor shall continuously maintain at the site, for the benefit of the owner and the Engineer, one record copy of this Contract marked to record on a current basis changes, selections and modifications made during construction. Additionally, the Contractor shall maintain at the site for the Owner and Engineer the approved Shop Drawings, Product Data, Samples and other similar required submittals. Upon final completion of the Work, all of these record documents shall be delivered to the Owner.

7.9 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

7.9.1 Shop Drawings, Product Data, Samples and other submittals from the Contractor do not constitute Contract Documents. Their purpose is merely to demonstrate the manner in which the Contractor intends to implement the Work in conformance with information received from the Contract Documents.

7.9.2 The Contractor shall not perform any portion of the Work requiring submittal and review of Shop Drawings, Product Data or Samples unless and until such submittal shall have been approved by the Engineer. Approval by the Engineer, however, shall not be evidence that Work installed pursuant thereto conforms with the requirements of this Contract.

7.10 CLEANING THE SITE AND THE PROJECT

7.10.1 The Contractor shall keep the site reasonably clean during performance of the Work. Upon final completion of the Work, the Contractor shall clean the site and the Project and remove all waste, rubbish, temporary structures, and other materials together with all of the Contractor's property therefrom. Contractor shall dispose of all refuse at a Texas Natural Res

Conservation Commission approved landfill. The Contractor shall further restore all property damaged during the prosecution of the Work and shall leave the site in a clean and presentable condition. No additional payment shall be made by the Owner for this work, the compensation having been considered and included in the contract price.

7.11 ACCESS TO WORK AND INSPECTIONS

7.11.1 The Owner and the Engineer shall have access to the Work at all times from commencement of the Work through final completion. The Contractor shall take whatever steps necessary to provide access when requested. When reasonably requested by the Owner or the Engineer, the Contractor shall perform or cause to be performed such testing as may be necessary or appropriate to insure suitability of the jobsite or the Work's compliance with the Contract requirements.

7.12 INDEMNITY AND DISCLAIMER

7.12.1 OWNER SHALL NOT BE LIABLE OR RESPONSIBLE FOR, AND SHALL BE INDEMNIFIED, DEFENDED, HELD HARMLESS AND RELEASED BY CONTRACTOR FROM AND AGAINST ANY AND ALL SUITS, ACTIONS, LOSSES, DAMAGES, CLAIMS, OR LIABILITY OF ANY CHARACTER, TYPE, OR DESCRIPTION, INCLUDING ALL EXPENSES OF LITIGATION, COURT COSTS, AND ATTORNEY'S FEES FOR INJURY OR DEATH TO ANY PERSON, OR INJURY OR LOSS TO ANY PROPERTY, RECEIVED OR SUSTAINED BY ANY PERSON OR PERSONS, INCLUDING THE CONTRACTOR, OR PROPERTY, ARISING OUT OF, OR OCCASIONED BY, DIRECTLY OR INDIRECTLY, THE PERFORMANCE OF CONTRACTOR UNDER THIS AGREEMENT, INCLUDING CLAIMS AND DAMAGES ARISING IN WHOLE OR IN PART FROM THE NEGLIGENCE OF OWNER, WITHOUT, HOWEVER, WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE OWNER UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW. THE PROVISIONS OF THIS INDEMNIFICATION ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND NOT INTENDED TO CREATE OR GRANT ANY RIGHTS, CONTRACTUAL OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY. IT IS THE EXPRESSED INTENT OF THE PARTIES TO THIS AGREEMENT THAT THE INDEMNITY PROVIDED FOR IN THIS CONTRACT IS AN INDEMNITY EXTENDED BY CONTRACTOR TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF THE CONTRACTOR'S AS WELL AS THE OWNER'S NEGLIGENCE, WHETHER SUCH NEGLIGENCE IS THE SOLE OR PARTIAL CAUSE OF ANY SUCH INJURY, DEATH, OR DAMAGE.

7.12.2 The Contractor will secure and maintain Contractual Liability insurance to cover this indemnification agreement that will be primary and non-contributory as to any insurance maintained by the Owner for its own benefit, including self-insurance. In addition, Contractor shall obtain and file with Owner a Standard Certificate of Insurance evidencing the required coverage.

7.12.3 In claims against any person or entity indemnified under this Paragraph 7.12 by an employee of the Contractor, a Subcontractor, anyone directly or

indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 7.12 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

7.13 NONDISCRIMINATION

7.13.1 The Contractor shall not discriminate in any way against any person, employee or job applicant on the basis of race, color, creed, national origin, religion, age, sex, or disability where reasonable accommodations can be effected to enable the person to perform the essential functions of the job. The Contractor shall further insure that the foregoing nondiscrimination requirement shall be made a part and requirement of each subcontract on this Project.

7.14 PREVAILING WAGE RATES

7.14.1 The Contractor shall comply in all respects with all requirements imposed by any laws, ordinances or resolutions applicable to the Project with regard to the minimum prevailing wage rates for all classes of employees, laborers, subcontractors, mechanics, workmen and persons furnishing labor and services to the Project. The City of Lancaster has adopted US Department of Labor's Davis Bacon Wage Determinations as the Prevailing Wage Rate Schedule, available to the Contractor by request, which specifies the classes and wage rates to be paid to all persons. The Contractor shall pay not less than the minimum wage rates established thereby for each class, craft or type of labor, workman, or mechanic employed in the execution of this Contract. The failure of the Contractor to comply with this requirement shall result in the forfeiture to the City of \$10.00 of a sum of not less than Sixty Dollars (\$60.00) for each person per day, or portion thereof, that such person is paid less than the prevailing rate. Upon request by the Owner, Contractor shall make available for inspection and copying its books and records, including but not limited to its payroll records, account information and other documents as may be required by the Owner to insure compliance with this provision.

Wage Determination number for this project shall be TX27 dated 07-20-2012.

7.15 JOB SITE SAFETY PRECAUTIONS

7.15.1 The Contractor shall at all times exercise reasonable precautions for the safety of its employees, laborers, subcontractors, mechanics, workmen and others on and near the jobsite and shall comply with all laws, ordinances, regulations, and standards of federal, state and local safety laws and regulations. The Contractor shall provide such machinery guards, safe walk-ways, ladders, bridges, and other safety devices as may be necessary or appropriate to insure a safe and secure jobsite and shall require its subcontractors to comply with this requirement. The Contractor shall immediately comply with any and all safety require

imposed by the Engineer during the progress of the Work.

7.16 WARNING DEVICES AND BARRICADES

7.16.1 The Contractor shall furnish and maintain such warning devices, barricades, lights, signs, pavement markings, and other devices as may be necessary or appropriate or required by the Engineer to protect persons or property in, near or adjacent to the jobsite, including . No separate compensation shall be paid to the Contractor for such measures. Where the Work is being conducted in, upon or near streets, alleys, sidewalks, or other rights-of-way, the Contractor shall insure the placement, maintenance and operation of any and all such warning devices as may be required by the City of Lancaster and shall do so until no longer required by the City. Such devices shall be in compliance with and conform to the manual and specifications for the uniform system of traffic control devices adopted by the Texas Department of Transportation.

7.17 PROTECTION OF UTILITIES & OTHER CONTRACTORS

7.17.1 The Contractor shall use best efforts to leave undisturbed and uninterrupted all utilities and utility services provided to the jobsite or which presently exists at, above or beneath the location where the Work is to be performed. In the event that any utility or utility service is disturbed or damaged during the progress of the Work, the Contractor shall forthwith repair, remedy or restore the utility at Contractor's sole expense.

7.17.2 The Contractor understands and acknowledges that other contractors of the Owner or of other entities may be present at the jobsite performing other work unrelated to the Project. The Contractor shall use best efforts to work around other contractors without impeding the work of others while still adhering to the completion date established herein. In the event that the Contractor's work is or may be delayed by any other person, the Contractor shall immediately give notice thereof to the Engineer and shall request a written Change Order in accordance with the procedures set forth by this Contract. The Contractor's failure to provide such notice and to request such Change Order shall constitute a waiver of any and all claims associated therewith.

ARTICLE VIII: CONTRACT ADMINISTRATION

8.1 THE ENGINEER

8.1.1 When used in this Contract the term "Engineer" does not necessarily denote a duly licensed, trained or certified Engineer; as used herein, the term shall be used interchangeably and shall mean a designated Engineer, Engineer, or Contract Administrator (who may not be an Engineer or engineer) for the Owner, said person to be designated or redesignated by the Owner prior to or at any time during the Work hereunder. The Engineer may be an employee of the Owner or may be retained by the Owner as an independent contractor but, in either event, the Engineer's duties and authority shall be as set forth hereinafter. The Contractor understands

and agrees that it shall abide by the decisions and instructions of the Engineer notwithstanding the contractual relationship between the Owner and Engineer. All of the Owner's instructions to the Contractor shall be through the Engineer.

In the event the Owner should find it necessary or convenient to replace the Engineer, the Owner shall retain a replacement Engineer and the status of the replacement Engineer shall be that of the former Engineer.

8.2 ENGINEER'S ADMINISTRATION

8.2.1 The Engineer, unless otherwise directed by the Owner in writing, will perform those duties and discharge those responsibilities allocated to the Engineer as set forth in this Contract. The Engineer shall be the Owner's representative from the effective date of this Contract until final payment has been made.

8.2.2 The Owner and the Contractor shall communicate with each other in the first instance through the Engineer.

8.2.3 The Engineer shall be the initial interpreter of the requirements of the drawings and specifications and the judge of the performance thereunder by the Contractor. The Engineer shall render written or graphic interpretations necessary for the proper execution or progress of the Work with reasonable promptness on request of the Contractor.

8.2.4 The Engineer will review the Contractor's Applications for Payment and will certify to the Owner for payment to the Contractor, those amounts then due the Contractor as provided in this Contract.

8.2.5 The Engineer shall have authority to reject Work which is defective or does not conform to the requirements of this Contract. If the Engineer deems it necessary or advisable, the Engineer shall have authority to require additional inspection or testing of the Work for compliance with Contract requirements.

8.2.6 The Engineer will review and approve, or take other appropriate action as necessary, concerning the Contractor's submittals including Shop Drawings, Product Data and Samples. Such review, approval or other action shall be for the sole purpose of determining conformance with the design concept and information given through the Contract Documents.

8.2.7 The Engineer will prepare Change Orders and may authorize minor changes in the Work by Field Order as provided elsewhere herein.

8.2.8 The Engineer shall, upon written request from the Contractor, conduct inspections to determine the date of Substantial Completion and the date of final completion, will receive and forward to the Owner for the Owner's review and records, written warranties and related documents required by this Contract and will issue a final Certificate for Payment upon compliance with the requirements of this Contract.

8.2.9 The Engineer's decisions in matters relating to aesthetic effect shall be final if consistent with the intent of this Contract.

8.3 CLAIMS BY THE CONTRACTOR

8.3.1 The Engineer shall determine all claims and matters in dispute between the Contractor and Owner with regard to the execution, progress, or sufficiency of the Work or the interpretation of the Contract Documents, including but not limited to the plans and specifications. Any dispute shall be submitted in writing to the Engineer within seven (7) days of the event or occurrence or the first appearance of the condition giving rise to the claim or dispute who shall render a written decision within a reasonable time thereafter. The Engineer's decisions shall be final and binding on the parties. In the event that either party objects to the Engineer's determination as to any submitted dispute, that party shall submit a written objection to the Engineer and the opposing party within ten (10) days of receipt of the Engineer's written determination in order to preserve the objection. Failure to so object shall constitute a waiver of the objection for all purposes.

8.3.2 Pending final resolution of any claim of the Contractor, the Contractor shall diligently proceed with performance of this Contract and the Owner shall continue to make payments to the Contractor in accordance with this Contract.

8.3.3 CLAIMS FOR CONCEALED, LATENT OR UNKNOWN CONDITIONS - The Contractor expressly represents that it has been provided with an adequate opportunity to inspect the Project site and thoroughly review the Contract Documents and plans and specifications prior to submission of its bid and the Owner's acceptance of the bid. Subject to the conditions hereof, Contractor assumes full responsibility and risk for any concealed, latent or unknown condition which may affect the Work. No claims for extra work or additional compensation shall be made by Contractor in connection with concealed, latent or unknown conditions except as expressly provided herein. Should concealed, latent or unknown conditions encountered in the performance of the Work (a) below the surface of the ground or (b) in an existing structure be at variance with the conditions indicated by this Contract, or should unknown conditions of an unusual nature differing materially from those ordinarily encountered in the area and generally recognized as inherent in Work of the character provided for in this Contract, be encountered, the Contract Price shall be equitably adjusted by Change Order upon the written notice and claim by either party made within seven (7) days after the first observance of the condition. As a condition precedent to the Owner having any liability to the Contractor for concealed or unknown conditions, the Contractor must give the Owner and the Engineer written notice of, and an opportunity to observe, the condition prior to disturbing it. The failure by the Contractor to make the written notice and claim as provided in this Subparagraph shall constitute a waiver by the Contractor of any claim arising out of or

relating to such concealed, latent or unknown condition and the Contractor thereby assumes all risks and additional costs associated therewith.

8.3.4 CLAIMS FOR ADDITIONAL COSTS - If the Contractor wishes to make a claim for an increase in the Contract Price, as a condition precedent to any liability of the Owner therefore, the Contractor shall give the Engineer written notice of such claim within seven (7) days after the occurrence of the event, or the first appearance of the condition, giving rise to such claim. Such notice shall be given by the Contractor before proceeding to execute any additional or changed Work. The failure by the Contractor to give such notice and to give such notice prior to executing the Work shall constitute a waiver of any claim for additional compensation.

8.3.4.1 In connection with any claim by the Contractor against the Owner for compensation in excess of the Contract Price, any liability of the Owner for the Contractor's costs shall be strictly limited to direct costs incurred by the Contractor and shall in no event include indirect costs or consequential damages of the Contractor. The Owner shall not be liable to the Contractor for claims of third parties, including Subcontractors. The Owner shall not be liable to the Contractor for any claims based upon delay to the Contractor for any reason whatsoever including any act or neglect on the part of the Owner.

8.3.5 CLAIMS FOR ADDITIONAL TIME - If the Contractor is delayed in progressing any task which at the time of the delay is then critical or which during the delay becomes critical, as the sole result of any act or neglect to act by the Owner or someone acting in the Owner's behalf, or by changes ordered in the Work, unusual delay in transportation, unusually adverse weather conditions not reasonably anticipated, fire or any causes beyond the Contractor's control, then the date for achieving Substantial Completion of the Work shall be extended upon the written notice and claim of the Contractor to the Owner and the Engineer, for such reasonable time as the Engineer may determine. Any notice and claim for an extension of time by the Contractor shall be made not more than seven (7) days after the occurrence of the event or the first appearance of the condition giving rise to the claim and shall set forth in detail the Contractor's basis for requiring additional time in which to complete the Project. In the event the delay to the Contractor is a continuing one, only one notice and claim for additional time shall be necessary. If the Contractor fails to make such claim as required in this Subparagraph, any claim for an extension of time shall be waived. The procedures and remedies provided by this provision shall be the sole remedy of Contractor and Contractor shall not assert nor be entitled to any additional delays or damages associated therewith.

8.4 FIELD ORDERS

8.4.1 The Engineer shall have authority to order minor changes in the Work not involving a change in the Contract Price or in Contract Time and not in con-

with the intent of the Contract. Such changes shall be effected by Field Order and shall be binding upon the Contractor. The Contractor shall carry out such Field Orders promptly.

8.5 MEDIATION

8.5.1 In the event that a dispute arises under the terms of this Contract, following an adverse determination by the Engineer and proper preservation of the issue as required herein, the parties agree to submit to mediation. In such event, the parties shall agree to a designated person to serve as mediator and each party shall be responsible for payment of one-half of the total mediation fees. The parties shall submit the dispute to mediation as soon as practical and in no event later than one (1) year after the Engineer's written decision on the matter. At least one designated representative of each party must attend and participate in good faith in an effort to resolve the matters in dispute.

8.5.2 In no event shall the foregoing provision justify or authorize any delay in the progress of the Work; the parties shall abide by the decision of the Engineer in accomplishing the timely completion of the Project.

ARTICLE IX: SUBCONTRACTORS

9.1 DEFINITION

9.1.1 A Subcontractor is an entity which has a direct contract with the Contractor to perform a portion of the Work. No Subcontractor shall be in privity with the Owner.

9.2 AWARD OF SUBCONTRACTS

9.2.1 Upon execution of the Contract, the Contractor shall furnish the Owner, in writing, the names of persons or entities proposed by the Contractor to act as a Subcontractor on the Project. The Owner shall promptly reply to the Contractor, in writing, stating any objections the Owner may have to such proposed Subcontractor. The Contractor shall not enter into a subcontract with a proposed Subcontractor with reference to whom the Owner has made timely objection. The Contractor shall not be required to subcontract with any party to whom the Contractor has objection.

9.2.2 All subcontracts shall afford the Contractor rights against the Subcontractor which correspond to those rights afforded to the Owner against the Contractor herein, including those rights afforded to the Owner by Subparagraph 12.2.1 below. All subcontracts shall incorporate by reference the provisions hereof and shall provide that no claims, causes or demands shall be made by any Subcontractor against the Owner.

9.2.3 The Contractor shall indemnify, defend and hold harmless the Owner from and against any and all claims, demands, causes of action, damage, and liability asserted or made against the Owner by or on behalf of any Subcontractor.

ARTICLE X: CHANGES IN THE WORK

10.1 CHANGES PERMITTED

10.1.1 Changes in the Work within the general scope of this Contract, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Contract, by Change Order or by Field Order.

10.1.2 Changes in the Work shall be performed under applicable provisions of this Contract and the Contractor shall proceed promptly with such changes.

10.2 CHANGE ORDER DEFINED

10.2.1 Change Order shall mean a written order to the Contractor executed by the Owner and the Engineer, issued after execution of this Contract, authorizing and directing a change in the Work or an adjustment in the Contract Price or the Contract Time, or any combination thereof. The Contract Price and the Contract Time may be changed only by written Change Order.

10.3 CHANGES IN THE CONTRACT PRICE

10.3.1 Any change in the Contract Price resulting from a Change Order shall be determined as follows: (a) by mutual agreement between the Owner and the Contractor as evidenced by (1) the change in the Contract Price being set forth in the Change Order, (2) such change in the Contract Price, together with any conditions or requirements related thereto, being initialed by both parties and (3) the Contractor's execution of the Change Order, or (b) if no mutual agreement occurs between the Owner and the Contractor, then, as provided in Subparagraph 10.3.2 below.

10.3.2 If no mutual agreement occurs between the Owner and the Contractor as contemplated in Subparagraph 10.3.1 above, the change in the Contract Price, if any, shall then be determined by the Engineer on the basis of the reasonable expenditures or savings of those performing, deleting or revising the Work attributable to the change, including, in the case of an increase or decrease in the Contract Price, a reasonable allowance for direct job site overhead and profit. In such case, the Contractor shall present, in such form and with such content as the Owner or the Engineer requires an itemized accounting of such expenditures or savings, plus appropriate supporting data for inclusion in a Change Order. Reasonable expenditures or savings shall be limited to the following: reasonable costs of materials, supplies, or equipment including delivery costs, reasonable costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance, reasonable rental costs of machinery and equipment exclusive of hand tools whether rented from the Contractor or others, reasonable costs of premiums for all bonds and insurance, permit fees, and sales, use or other taxes related to the Work, and reasonable cost of direct supervision and jobsite field office overhead directly attributable to the change. In no event shall

expenditure or savings associated with the Contractor's home office or other non-jobsite overhead expense be included in any change in the Contract Price. Pending final determination of reasonable expenditures or savings to the Owner, payments on account shall be made to the Contractor on the Engineer's Certificate for Payment.

10.3.3 If unit prices are provided in the Contract, and if the quantities contemplated are so changed in a proposed Change Order that application of such unit prices to the quantities of Work proposed will cause substantial inequity to the Owner or to the Contractor, the applicable unit prices shall be equitably adjusted.

10.4 MINOR CHANGES

10.4.1 The Engineer shall have authority to order minor changes in the Work not involving a change in the Contract Price or an extension of the Contract Time and not inconsistent with the intent of this Contract. Such minor changes shall be made by written Field Order, and shall be binding upon the owner and the Contractor. The Contractor shall promptly carry out such written Field Orders.

10.5 EFFECT OF EXECUTED CHANGE ORDER

10.5.1 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order.

10.6 NOTICE TO SURETY; CONSENT

10.6.1 The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval is required by the Contractor's surety or by law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the Owner that the surety has been notified of and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

ARTICLE XI: UNCOVERING & CORRECTING WORK

11.1 UNCOVERING WORK

11.1.1 If any of the Work is covered contrary to the Engineer's request or to any provisions of this Contract, it shall, if required by the Engineer or the Owner, be uncovered for the Engineer's inspection and shall be properly replaced at the Contractor's expense without change in the Contract Time.

11.1.2 If any of the Work is covered in a manner not inconsistent with Subparagraph 11.1.1 above, it shall, if required by the Engineer or Owner, be uncovered for the Engineer's inspection. If such Work conforms strictly

with this Contract, costs of uncovering and proper replacement shall by Change Order be charged to the Owner. If such Work does not strictly conform with this Contract, the Contractor shall pay the costs of uncovering and proper replacement.

11.2 CORRECTING WORK

11.2.1 The Contractor shall immediately proceed to correct Work rejected by the Engineer as defective or failing to conform to this Contract. The Contractor shall pay all costs and expenses associated with correcting such rejected Work, including any additional testing and inspections, and reimbursement to the Owner for the Engineer's services and expenses made necessary thereby.

11.2.2 If within one (1) year after Substantial Completion of the Work any of the Work is found to be defective or not in accordance with this Contract, the Contractor shall correct it promptly upon receipt of written notice from the Owner. This obligation shall survive final payment by the Owner and termination of this Contract. With respect to Work first performed and completed after Substantial Completion, this one year obligation to specifically correct defective and nonconforming Work shall be extended by the period of time which elapses between Substantial Completion and completion of the subject Work.

11.2.3 Nothing contained in this Paragraph 11.2 shall establish any period of limitation with respect to other obligations which the Contractor has under this Contract. Establishment of the one year time period in Subparagraph 11.2.2 relates only to the duty of the Contractor to specifically correct the Work.

11.3 OWNER MAY ACCEPT DEFECTIVE OR NONCONFORMING WORK

11.3.1 If the Owner chooses to accept defective or nonconforming Work, the Owner may do so. In such event, the Contract Price shall be reduced by the greater of (a) the reasonable cost of removing and correcting the defective or nonconforming Work, and (b) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the Owner for its acceptance of defective or nonconforming Work, the Contractor shall, upon written demand from the Owner, pay the Owner such remaining compensation for accepting defective or nonconforming Work.

ARTICLE XII: CONTRACT TERMINATION

12.1 TERMINATION BY THE CONTRACTOR

12.1.1 If the Work is stopped for a period of ninety (90) days by an order of any court or other public authority, or as a result of an act of the Government, through no fault of the Contractor or any person or entity working directly or indirectly for the Contractor, the Contractor may, upon ten (10) days' written notice to the Owner and

Engineer, terminate performance under this Contract and recover from the Owner payment for the actual reasonable expenditures of the Contractor (as limited in Subparagraph 10.3.2 above) for all Work executed and for materials, equipment, tools, construction equipment and machinery actually purchased or rented solely for the Work, less any salvage value of any such items.

12.1.2 If the Owner shall persistently or repeatedly fail to perform any material obligation to the Contractor for a period of fifteen (15) days after receiving written notice from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance under this Contract by written notice to the Engineer and the Owner. In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance under this Contract for convenience pursuant to Subparagraph 12.2.1 hereunder.

12.2 TERMINATION BY THE OWNER

12.2.1 FOR CONVENIENCE

12.2.1.1 The Owner may for any reason whatsoever terminate performance under this Contract by the Contractor for convenience. The Owner shall give written notice of such termination to the Contractor specifying when termination becomes effective.

12.2.1.2 The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The Owner may direct the Contractor to assign the Contractor's right, title and interest under terminated orders or subcontracts to the Owner or its designee.

12.2.1.3 The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

12.2.1.4

(a) The Contractor shall submit a termination claim to the Owner and the Engineer specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the Engineer. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Owner shall pay the Contractor, an amount derived in accordance with subparagraph (c) below.

(b) The Owner and the Contractor may agree to the compensation, if any, due to the Contractor hereunder.

(c) Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts:

(i) Contract prices for labor, materials, equipment and other services accepted under this Contract;

(ii) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages), provided however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

(iii) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Subparagraph 12.2.1.2 of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 12.2.1 shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

12.2.2 FOR CAUSE

12.2.2.1 If the Contractor persistently or repeatedly refuses or fails to prosecute the Work in a timely manner, abandons the jobsite and fails to resume work within five (5) days of written notice thereof by the Owner, fails to grant or allow access to the jobsite by the Owner or Engineer, fails to supply enough properly skilled workers, supervisory personnel or proper equipment or materials, fails to make prompt payment to Subcontractors or for materials or labor, persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a violation of a material provision of this Contract, then the Owner may by written notice to the Contractor, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

12.2.2.2 If the unpaid balance of the Contract Price does not exceed the cost of finishing the work, including compensation for the Engineer's additional services and expenses made necessary thereby, such difference shall be paid by the Contractor to the Owner. This obligation for payment shall survive the termination of the Contract.

12.2.2.3 In the event the employment of the Contractor is terminated by the Owner for cause pursuant to Subparagraph 12.2.2 and it is subsequently determined by a Court of competent jurisdiction

such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Subparagraph 12.2.1 and the provisions of Subparagraph 12.2.1 shall apply.

ARTICLE XIII: INSURANCE

13.1 CONTRACTOR SHALL MAINTAIN INSURANCE

13.1.1 The Contractor at his own expense shall purchase, maintain and keep in force during the life of this contract, adequate insurance that will protect the Contractor and/or any Additional Insured from claims which may arise out of or result from operations under this contract. The insurance required shall provide adequate protections from all claims, whether such operations be by the Contractor or by any Additional Insured or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts of any of them may be liable and from any special hazards, such as blasting, which may be encountered in the performance of this contract in the amounts as shown below in Paragraph 13.2.1.

13.1.2 The Contractor shall not commence work on any Contract in the City of Lancaster until the Contractor has obtained all the insurance required under this paragraph and such insurance has been approved by the City.

13.2 TYPES AND AMOUNTS OF INSURANCE

13.2.1. The Contractor shall furnish and maintain during the life of the contract adequate Insurance in such amounts as follows:

<u>Type of Insurance</u>	<u>Amount</u>
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<u>Worker's Compensation</u> as set forth in the Worker's Compensation Act.	
---	--

<u>Commercial General Liability</u>	
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\$1,000,000 Each Accident/Occurrence. The policy shall have no coverage removed by exclusions.	
--	--

Limit of Insurance per Project or Owner's and Contractor's Protective Liability Insurance for the Project.	
--	--

<u>Automobile Liability</u>	
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\$500,000 Combined single limit per occurrence.	
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13.2 INSTALLATION FLOATER

This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverage's designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise

insured under builder's risk insurance.

13.3 Builders Risk

This insurance shall be written in completed value form and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance.

Equipment installed under this contract shall be insured under installation floater Insurance when the aggregate value of the equipment exceeds \$10,000.00.

If the work does not include the construction of building structures, builder's risk Insurance may be omitted providing the installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

13.4 ADDITIONAL INSURED / PROJECT INFORMATION

The Owner shall be named as an additional insured on the Commercial General Liability (Public), Policies furnished by the Contractor.

The project name and bid/contract number shall be listed on the certificate.

13.5 WRITTEN NOTIFICATION

Each insurance policy shall contain a provision requiring that thirty (30) days prior to expiration, cancellation, non-renewal or any material change in coverage, a notice there of shall be given by certified mail to the Purchasing Agent, City of Lancaster, PO Box 940, Lancaster, Texas, 75146.

13.6 PREMIUMS AND ASSESSMENTS

Companies issuing the insurance policies shall have no recourse against the City for payment of any premiums or assessments for any deductibles which are at the sole responsibility and risk of the Contractor.

13.7 CERTIFICATE OF INSURANCE

Proof that the insurance is in force shall be furnished to the City of Lancaster on a Standard Certificate of Insurance Form. In the event any insurance policy shown on the Certificate of Insurance has an expiration date that is prior to the completion and final acceptance of the project by the City of Lancaster, the contractor shall furnish the City proof of identical continued coverage no later than thirty (30) days prior to the expiration date shown on the Certificate of Insurance.

13.8 PRIMARY COVERAGE

The coverage's provided herein shall be primary and noncontributory with any other insurance maintained by the City of Lancaster, Texas, for its benefit, including self insurance.

13.9 WORKER'S COMPENSATION INSURANCE COVERAGE

13.9.1 The Contractor shall:

1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;

2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;

3) provide the governmental entity prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;

4) obtain from each person providing services on a project, and provide to the governmental entity:

(A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;

7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the Texas Worker's Compensation

Commission on the sample notice, without any additional words or changes:

Required Workers' Compensation Coverage

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

and

(8) contractually require each person with whom it contracts to provide services on a project, to:

(A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;

(B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;

(C) include in all contracts to provide services on the project the language in subsection (e) (3) of this rule;

(D) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(E) obtain from each other person with whom it contracts, and provide to the Contractor:

(i) a certificate of coverage, prior to the other person beginning work on the project; and

(ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects

provision of coverage of any person providing services on the project; and

(H) contractually require each other person with whom it contracts, to perform as required by sub-paragraphs (A) - (H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

ARTICLE XIV: MISCELLANEOUS

14.1 LAWS AND ORDINANCES

14.1.1 The Contractor shall at all times and in all respects observe and comply with all federal, state and local laws, ordinances, and regulations applicable to the Project and Work. The Contractor shall further insure that all Subcontractors observe and comply with said laws, ordinances and regulations.

14.2 GOVERNING LAW

14.2.1 The Contract shall be governed by the laws of the State of Texas. Venue for any causes of action arising under the terms or provisions of this Contract or the Work to be performed hereunder shall be in the courts of Dallas County, Texas.

14.3 SUCCESSORS AND ASSIGNS

14.3.1 The Owner and Contractor bind themselves, their successors, assigns and legal representatives to the other party hereto and to successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in this Contract. The Contractor shall not assign this Contract without written consent of the Owner.

14.4 SURETY BONDS

14.4.1 If the Contract Price exceeds the sum of \$25,000.00, the Contractor shall furnish separate performance and payment bonds to the Owner, according to the requirements set out in the bid documents and state statutes to guaranty full and faithful performance of the Contract and the full and final payment of all persons supplying labor or materials to the Project. Each bond required by the bid documents or state statute shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by

like amount. The performance and payment bonds furnished by the Contractor shall be in form suitable to the Owner and shall be executed by a surety, or sureties, reasonably suitable to the Owner and authorized to do business in the State of Texas by the State Board of Insurance.

14.4.2 If the Contract Price exceeds the sum of \$25,000.00, the Contractor, upon execution of the Contract and prior to commencement of the Work, shall furnish to the Owner a two-year maintenance bond in the amount of one hundred percent (100%) of the Contract Price covering the guaranty and maintenance prescribed herein, written by an approved surety authorized and duly licensed to conduct business in the State of Texas. The cost of said maintenance bond shall be included in the Contractor's unit bid prices and shall be paid by the Contractor.

14.5 SEVERABILITY

14.5.1 The provisions of this Contract are herein declared to be severable; in the event that any term, provision or part hereof is determined to be invalid, void or unenforceable, such determination shall not affect the validity or enforceability of the remaining terms, provisions and parts, and this Contract shall be read as if the invalid, void or unenforceable portion had not been included herein.

14.6 AMENDMENTS

14.6.1 This Contract may be amended by the parties only by a written agreement duly executed by both parties. The failure of the Owner to object to any nonperformance or nonconforming work or to enforce any provision hereof shall in no event be regarded as or construed to be a waiver, release or modification of any term or provision in this Contract, nor shall such failure to object or enforce stop the Owner from insisting on strict compliance with this Contract or from recovering damages, costs or expenses arising as a result of such nonperformance or nonconforming work.

14.7 NOTICES

14.6.1 All notices required by this Contract shall be presumed received when deposited in the mail properly addressed to the other party or Engineer at the address set forth herein or set forth in a written designation of change of address delivered to all parties and the Engineer.

EXECUTED in single or multiple originals, this _____ day of **December, 2012.**

CITY OF LANCASTER

Landmark Structures I, LP.

Opal Mauldin Robertson, City Manager

ATTEST:

Dolle K. Downe, City Secretary

1665 Harmon Rd.
Fort Worth, TX 76177

City of Lancaster, Texas (Purchasing)

Supplier Response

Bid Information		Contact Information		Ship to Information
Bid Creator	Dawn Berry Purchasing Agent	Address	PO Box 940	Address
Email	dberry@lancaster-tx.com		Lancaster, TX 75146	
Phone	(972) 218-1329	Contact	Dawn Berry	Contact
Fax	(972) 218-3621		Purchasing Agent	
			Purchasing	Department
Bid Number	2012-45 Addendum 3	Department		Building
Title	2.0 Million Gallon Elevated Storage Tank	Building		
Bid Type	ITB	Floor/Room		Floor/Room
Issue Date	10/20/2012	Telephone	(972) 218-1329	Telephone
Close Date	11/14/2012 2:00:00 PM CST	Fax	(972) 218-3621	Fax
Need by Date		Email		Email
			dberry@lancaster-tx.com	

Supplier Information

Company LANDMARK STRUCTURES I, L.P.
Address 1665 HARMON RD.

FORT WORTH, TX 76177
Contact DIANE GENTRY
Department
Building
Floor/Room
Telephone 1 (817) 4398888 1313
Fax 1
Email dgentry@teamlandmark.com
Submitted 11/14/2012 11:41:50 AM CST
Total \$3,366,000.00

Signature _____

Supplier Notes

Bid Notes

Bid Activities

Date	Name	Description
10/17/2012 8:00:00 AM	Week 1	Week 1 Advertisement - Focus News
10/24/2012 8:00:00 AM	Week 2	Week 2 Advertisement
11/14/2012 8:00:00 AM	Bid Review - November 14-21	Review November 14-21
12/10/2012 7:00:00 PM	Council Approval	Council Approval

Bid Messages

Please review the following and respond where necessary

#	Name	Note	Response
1	Errors	<p>The system checks for errors upon submittal. If you have not completed a required attribute, the system will not accept your bid. Please do not wait until 5 minutes before the response is due. If you have an error, you may not have time to correct and re-submit.</p> <p>Please see the Navigating the E-Procurement System document located at www.lancaster-tx.com/bids for information on errors.</p>	Understood
2	Late Submission	Bids/RFQs are not accepted after the closing date and time. The City of Lancaster is not responsible computer, mail or carrier issues/problems. The server time located in the top right corner of this software is the official clock. It is the responsibility of the user to ensure you have chosen the correct time zone for your company.	Understood
3	Response Term	Responses shall be valid for ninety (90) calendar days after the opening date and shall constitute an irrevocable offer to the City of Lancaster for the 90 calendar day period. The 90 calendar day period may be extended by mutual agreement of the parties.	Agree
4	Company Ownership	Is your company currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, please explain the impact both in organizational and directional terms.	No
5	Electronic Payment	If you would like your payment sent electronically (EFT), please provide your accounts receivable contact information. Please provide name and email.	Diane Gentry - dgentry@teamlandmark.com
6	Financial Default	Is your company currently in default on any loan agreement or financing agreement with any bank, financial institution or other entity? If yes, specify date(s), details, circumstances, and prospects for resolution.	No
7	Financial Rating	Provide a financial rating of your company and any documentation (e.g. a Dunn & Bradstreet analysis/number), which indicates the financial stability of the company.	Dunn & Bradstreet #017617171
8	Litigation with City of Lancaster	Is your firm involved in any litigation (past or pending) with the city of Lancaster? If yes, please provide details.	No
9	NEPOTISM STATEMENT	The Bidder or Proposer or any officer, if the Bidder or Proposer is other than an individual, shall state whether Bidder or Proposer has a relationship, either by blood or marriage, with any official or employee of the City of Lancaster:	Not Related
10	Non-Performance	Identify if your firm has had any contracts terminated due to non-performance over the past five (5) years.	None

11	Open Records Act	All responses will be maintained confidential until award is finalized. At that time, all proposals are subject to the Open Records Act.	Agreed
12	PROPERTY TAXES	Please indicate whether you or your company, owe delinquent property taxes to the City whether an assumed name, partnership, corporation, or any other legal form.	Do Not
13	Regulatory Sanctions	Identify adverse actions sanctioned by any regulatory authorities over the past five (5) years.	None
14	Website Address	Enter product website information	www.teamlandmark.com
15	T&C Acknowledgement	I have read and agree to the terms and conditions of this bid.	Agreed
16	Bid Acknowledgement	Bidder affirms that they have read and understand all requirements of this proposal. Additionally, the bidder affirms that they are duly authorized to execute this contract and that this company has not prepared this proposal in collusion with any other proposer, and that the contents of this proposal as to prices, terms or conditions of said proposal have not been communicated by the bidder nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this type of business prior to the official opening of this proposal.	Agreed
17	Insurance	Vendor shall provide insurance as listed in the insurance requirements attached.	Understood
18	County	What county is your principal place of business located?	Tarrant County, Texas
19	Immigration	Employers may hire only persons who may legally work in the United States (i.e., citizens and nationals of the US) and aliens authorized to work in the US. The employer must verify the identity and employment eligibility of anyone to be hired, which includes completing the Employment Eligibility Verification Form (I9). The Contractor shall establish appropriate procedures and controls so no services or products under the Contract Documents will be performed or manufactured by any worker who is not legally eligible to perform such services or employment.	(No Response Required)
20	Audit	The City reserves the right to audit the records and performance of the Contractor during the term of the contract and for three years thereafter.	(No Response Required)
21	Contractor Responsibility	Keep project area in a safe and clean environment at all times during the contract period. Ensure all work is executed in accordance with OSHA (Occupational Safety and Health Administration) Requirements. Contractor must ensure that all Federal, State, and Local regulation are met.	(No Response Required)
22	Damage	Contractors are responsible for repairs caused by their negligence for any damage to public right of way and/or private property.. Repairs must be completed prior to final acceptance of job for payment.	(No Response Required)
23	Construction Uniform	Do your field employees wear uniforms? Provide a brief description.	No
24	Workmanship	All work and workmanship must be of good quality and adhere to all applicable laws and regulations. Contractor must possess all necessary licenses.	(No Response Required)

25	Laws and ordenances	The Contractor shall at all times observe and comply with all Federal, State, and local laws, ordinances and regulations which in any manner affect the Contract or the work.	Understood
26	Payment Terms	The City of Lancaster's payment terms are Net 30.	Agreed
27	Road & Lane Closures	Road or lane closures must be approved in writing at least 48 hours prior to closing by the City Engineer.	Agreed
28	Change Orders	No oral statement of any person shall modify or otherwise change, or affect the terms, conditions, or specifications stated in the resulting contract. All change orders to the contract will be made in writing by the city of Lancaster.	Agreed
29	MODIFICATION OF A SUBMITTED BID / PROPOSALS	A proposer may modify a response electronically by logging into the e-procurement system and retracting their bid. Changes can be made up to the closing date and time. It is the vendor's responsibility to save any changes and re-submit their response.	Understood
30	AWARD OF CONTRACT	The contractor shall not commence work under these terms and conditions of the contract until all applicable Certificates of Insurance, Performance and Payment Bonds and have been approved by the City of Lancaster and he/she has received notice to proceed in writing and an executed copy of the contract from the City of Lancaster.	Agreed
31	Questions	During the term of this RFP, the Proposer shall not contact any City staff except those designated in the RFP or subsequent addendums/ correspondence. All questions should be addressed in writing to the City's Purchasing Agent via email at Email Purchasing or by fax at 972-218-3621 at least five (5) business days prior to the Due Date. Non-compliance with this provision may result in rejection of the Proposal.	Agree
32	Deviation	DEVIATIONS: In the event, you the Proposer, intends to deviate from the general terms, conditions, special conditions or specifications contrary to those listed in the "Terms and Conditions" and other information attached hereto, all such deviations must be detailed and uploaded in the RESPONSE ATTACHMENTS section of the e-pro system with the description DEVIATION. <P>NO DEVIATIONS: In the absence of any deviation, Proposer assures the City of Proposer's compliance with the Terms, Conditions, Specifications, and information contained in this RFP.	None
33	Award	Response to specifications, location of vendor, history/relationship, price and vendor's ability to perform the work are the primary factors in determining the lowest responsible bid.	(No Response Required)
34	Contractor Independence	Contractor will operate as an independent contractor and not an agent, representative, partner, or employee of the City of Lancaster, and shall control his operations at the work site, and be solely responsible for the acts or omissions of his employee(s). All wages, taxes, and worker's compensation of all contract employees shall be paid by the contractor.	(No Response Required)
35	MWBE 1	Is your company M/WBE or HUB certified?	No

36	MWBE 2	If yes, what is your certification number?	N/A
37	MWBE 3	If yes, what agency completed the certification?	N/A
38	MWBE 4	If yes, what is the expiration date of your certification?	N/A
39	Contractor Registration	The awarded vendor will be required to register with the City as a contractor. The current fee is \$100. Application is available at www.lancaster-tx.com or at Building Inspection. <BLOCKQUOTE>700 E. Main Street Lancaster, TX 75146 Hours of operation M-Th 7:00 AM - 5:30 PM.	Understood
40	Permits	The awarded vendor will be required to obtain all required permits. Permit fees are waived for all City Projects. Permit information can be obtained at www.lancaster-tx.com or at Building Inspection. <BLOCKQUOTE>700 E. Main Street Lancaster, TX 75146 Hours of operation M-Th 7:00 AM - 5:30 PM.	Understood
41	BID PROTESTS	All protests regarding the bid solicitation process must be submitted in writing to the Purchasing Agent within five (5) working days following the opening of bids. This includes all protests relating to advertising of bid notices, deadlines, bid opening, and all other related procedures under the Local Government Code, as well as protests relating to alleged improprieties or ambiguities in the specifications. <p> The limitation does not include protests relating to staff recommendations as to award of a bid. Protests relating to staff recommendations may be directed to the City Council by contacting the City Secretary PRIOR to Council Award.	Agreed
42	Reciprocal Information 1	The City of Lancaster, as a governmental agency of the State of Texas, may not award a contract for general construction, improvements, services or public works projects or purchases of supplies, materials, or equipment to a non-resident bidder unless the non-resident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a non-resident bidder to obtain a comparable contract in the state in which the non-resident's principal place of business is located (Article 601g v.t.c.s.). Bidder shall answer all the following questions by encircling the appropriate response or completing the blank provided. <p>**Where is your principal place of business?	Texas
43	Reciprocal Information 2	For Businesses not located in Texas, does your state favor resident bidders (bidders in your state) by some dollar increment or percentage?	N/A
44	Reciprocal Information 3	If Yes, What is the dollar increment or percentage?	N/A
45	Notification	How did you here about this bid opportunity?	e-pro
46	Plan Room - Other	If yes for a plan room or other, please list which plan room or other means of notification.	City of Lancaster

47	Terminology	Throughout this document, the terms Contractor, Bidder, Proposer, and/or Vendor may be used interchangeably. Reference to any of these terms throughout this document should be construed by the reader as meaning any bidder for the products/services being requested (e.g., Bidder, Proposer); or the bidder who has been awarded a bid/RFQ or contract (e.g., Contractor, Vendor).	Agree
48	Response Term	Responses shall be valid for ninety (90) calendar days after the opening date and shall constitute an irrevocable offer to the City of Lancaster for the 90 calendar day period. The 90 calendar day period may be extended by mutual agreement of the parties.	Agree
49	Bid Bond	A bid bond in the amount of 5% is required for this project. Please scan and attach a copy to this bid. Please mail or deliver original to:<P> City of Lancaster Attn: Purchasing PO Box 940 Lancaster, TX 75146. <P> **The original must be received prior to the due date and time. A Sample is attached for reference.	Understood
50	Payment Bond	A payment bond in the amount of 100% of the contract amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood
51	Performance Bond	A performance bond in the amount of 100% of the contract amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood
52	Maintenance Bond	A maintenance bond in the amount of 100% of the contract amount will be required from the awarded vendor. A sample document is attached and must be used by issuing bonding agent.	Understood
53	Addendum 1	Addendum 1 dated November 5, 2012 has been added.	ACK
54	Addendum 2	Addendum 2 dated November 9, 2012 has been added.	ACK
55	Addendum 3	Addendum 2 dated November 13, 2012 has been added.	ACK

Line Items

#	Qty	UOM	Description	Response
1	1	Package A	2.0 Million Gallon elevated Storage Tank<p>	\$2,665,000.00

PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL

Item Notes: Please review payment procedures outlined in Division 01.
01 29 00 PAYMENT PROCEDURES

Supplier Notes:

Package Line Items: You are not required to respond to all lines in the package

#	Qty	UOM	Description	Response
1.1	1	LS	2.0 Million Gallon Elevated Storage Tank<p>	2,665,000.00

PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL

Supplier
Notes:

2	1	Package B	Supporting Items	\$580,000.00
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Item Notes: Please review payment procedures outlined in Division 01.
01 29 00 PAYMENT PROCEDURES

Supplier Notes:

Package Line Items: You are not required to respond to all lines in the package

#	Qty	UOM	Description	Response
2.1	1,115	LF	24" C905 PVC C905 DR-18 WATER PIPE	100.00

Supplier
Notes:

2.2	91	LF	12" C905 PVC C900 DR-18 WATER PIPE	60.00
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Supplier
Notes:

2.3	2	EA	24" BUTTERFLY VALVE	12,000.00
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Supplier
Notes:

2.4	2	EA	12" GATE VALVE	2,000.00
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Supplier
Notes:

2.5	1	EA	24" VALVE WITH 90 DEGREE BEVEL GEAR	21,000.00
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Supplier
Notes:

2.6	1	EA	2" COMBINATION AIR VALVE	4,000.00
Supplier Notes:				
2.7	1	EA	1" WATER SERVICE & METER BOX	2,000.00
Supplier Notes:				
2.8	1	EA	FIRE HYDRANT ASSEMBLY (Includes 6" Gate Valve & Lead)	4,000.00
Supplier Notes:				
2.9	1	EA	CONNECT TO EXISTING 30" WATERLINE (N. HOUSTON SCHOOL RD)	8,000.00
Supplier Notes:				
2.10	1	EA	CONNECT TO EXISTING 12" WATERLINE (W. WINTERGREEN RD)	6,000.00
Supplier Notes:				
2.11	1	LS	TRENCH SAFETY - Please list in the notes the estimated quantity.	1,294.00
Item Notes: Contractor shall estimate the quantity required for trench safety and include in the unit price above. In no case shall the quantity be less than 1,294 linear feet.				
Supplier Notes: 1,294 linear feet				
2.12	1	LS	SITE PREPARATION AND GRADING	54,007.00
Supplier Notes:				
2.13	483	SY	6" CONCRETE ACCESS DRIVE AND PARKING	40.00
Supplier Notes:				
2.14	11	SY	CONCRETE SIDEWALK REPLACEMENT	40.00
Supplier Notes:				
2.15	33	SY	ASPHALT PAVING REPLACEMENT	32.00
Supplier Notes:				

2.16	8,923	SY	HYDROMULCH	1.00
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Supplier
Notes:

2.17	1	LS	TANK / SITE ELECTRICAL AND SCADA	100,000.00
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Supplier
Notes:

2.18	1	LS	MOBILIZATION (MAX 5%)	150,000.00
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Supplier
Notes:

2.19	1	LS	STORM WATER POLLUTION PREVENTION PLAN	3,000.00
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Supplier
Notes:

2.20	1	LS	TRAFFIC CONTROL PLAN	2,000.00
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Supplier
Notes:

2.21	1	LS	GENERAL CONSTRUCTION CONTINGENCY - ENTER \$50,000 IN THE UNIT PRICE	50,000.00
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Supplier
Notes:

3	1	PACKAGE	ALTERNATE ITEMS<p> C	\$121,000.00
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PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL

Item Notes: Please review payment procedures outlined in Division 01.
 01 29 00 PAYMENT PROCEDURES

Supplier Notes:

Package Line Items: You are not required to respond to all lines in the package

#	Qty	UOM	Description	Response
3.1	1	EA	ADD - ELEVATED TANK 2ND FLOOR	121,000.00

Supplier
Notes:

Response Total:	\$3,366,000.00
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CONTRACTOR'S BID BOND

Bond No. 7199966

KNOW ALL MEN BY THESE PRESENTS,

That we Landmark Structures I, L.P., Principal, and Fidelity and Deposit Company of Maryland a corporation duly organized under the laws of the State of Maryland, and authorized to issue surety bonds in the State of Texas, Surety herein, are held and firmly bound unto the City of Lancaster, owner, in the sum of FIVE PERCENT Dollars (\$ 5%) for the payment of which sum we will bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted or is about to submit a bid to Owner on a contract for:

2.0 Million Gallon Elevated Storage Tank (Bid 2012-45)

NOW, THEREFORE, if the Owner shall accept the bond of the Principal and the Principal shall enter into a contract with the Owner in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or contract documents with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, then this obligation shall be null and void, otherwise to remain in full force and effect and the amount hereof shall be paid to and retained by Owner as liquidated damages for Principal's failure to do so.

IN WITNESS WHEREOF, this instrument has been executed by the duly authorized representatives of the Principal and the Surety.

Signed and sealed this 8 day of November, ~~2010~~ 2012

Principal (Signature)

Mike Lamon
Typed / Printed Name

By: Vice President of Landmark Structures Management Inc., General Partner of Landmark Structures I, L.P.

Title

(NAME OF SURETY), FIDELITY AND DEPOSIT COMPANY OF MARYLAND

By: Robyn Rost
Attorney-in-Fact Robyn Rost, Attorney-in-Fact

LANDMARK STRUCTURES MANAGEMENT INC.

ACTION BY SOLE DIRECTOR WITHOUT A MEETING

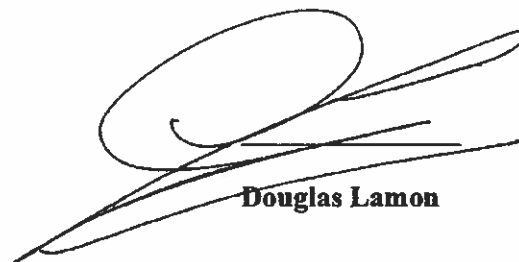
The undersigned, being the sole director of LANDMARK STRUCTURES MANAGEMENT INC, does hereby take the following action by written consent, pursuant to the provisions of section 141(f) of the General Corporation Law of the State of Delaware.

Adoption of the following Resolutions:

RESOLVED :

- 1) that Mike Lamon, being Vice President of Landmark Structures Management Inc., general partner of Landmark Structures I, LP, is hereby authorized as follows:
 - a) to submit bids and/or to negotiate contracts and/or to enter into contracts for and on behalf of Landmark Structures I, LP, and
 - b) to execute and deliver such documents and to take such other actions as he considers necessary or advisable to give effect to this resolution and the transactions provided for herein.
- 2) that any bid submitted and/or any contract negotiated and/or any contract entered into by Mike Lamon in his capacity as Vice President of Landmark Structures Management Inc. as witnessed by his signature thereto is hereby recognized as binding upon Landmark Structures I, LP, and Landmark Structures Management Inc.

Dated as of the 16th day of January, 2001.



Douglas Lamon

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **GEOFFREY DELISIO**, Vice President, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Robyn ROST, Anthony GRIECO, Joseph J. DEMEO, Raymond GIL and Victoria L. ERNEST**, all of Madison, New Jersey, **EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York, the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland, and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland, in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 25th day of July, A.D. 2012.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



By:

Eric D. Barnes

*Assistant Secretary
Eric D. Barnes*

Geoffrey Delisio

*Vice President
Geoffrey Delisio*

State of Maryland
City of Baltimore

On this 25th day of July, A.D. 2012, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **GEOFFREY DELISIO**, Vice President, and **ERIC D. BARNES**, Assistant Secretary, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Constance A. Dunn

*Constance A. Dunn, Notary Public
My Commission Expires: July 14, 2015*



EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 8 day of November, 2012.



A handwritten signature in cursive script that reads "James M. Carroll".

James M. Carroll, Vice President

FIDELITY AND DEPOSIT COMPANY

OF MARYLAND

600 Red Brook Blvd., Suite 600, Owings Mills, MD 21117

Statement of Financial Condition As Of December 31, 2011

ASSETS

Bonds	\$ 167,477,539
Stocks	23,576,974
Cash and Short Term Investments	235,580
Reinsurance Recoverable	12,886,175
Other Accounts Receivable	39,980,988
TOTAL ADMITTED ASSETS	\$ 244,157,256

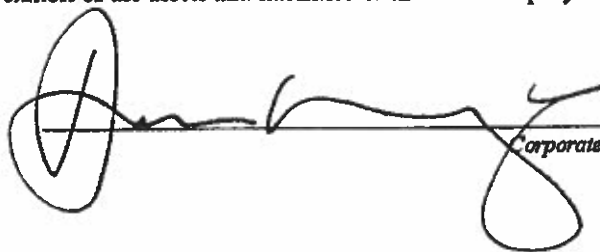
LIABILITIES, SURPLUS AND OTHER FUNDS

Reserve for Taxes and Expenses	\$ 127,987
Ceded Reinsurance Premiums Payable	48,215,682
Securities Lending Collateral Liability	1,022,500
TOTAL LIABILITIES	\$ 49,366,169
Capital Stock, Paid Up	\$ 5,000,000
Surplus	189,791,087
Surplus as regards Policyholders	194,791,087
TOTAL	\$ 244,157,256

Securities carried at \$59,049,993 in the above statement are deposited as required by law.

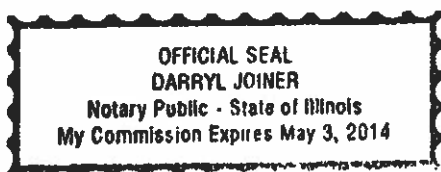
Securities carried on the basis prescribed by the National Association of Insurance Commissioners. On the basis of December 31, 2011 market quotations for all bonds and stocks owned, the Company's total admitted assets would be \$253,778,028 and surplus as regards policyholders \$204,411,859.

I, DENNIS F. KERRIGAN, Corporate Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing statement is a correct exhibit of the assets and liabilities of the said Company on the 31st day of December, 2011.


Corporate Secretary

State of Illinois }
City of Schaumburg } SS:

Subscribed and sworn to, before me, a Notary Public of the State of Illinois, in the City of Schaumburg, this 15th day of March, 2012.




Notary Public

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT, _____ whose address is _____, as PRINCIPAL, and _____, a CORPORATION organized and existing under the laws of the State of Texas, and fully authorized to transact business in the State of Texas, as Sureties, do hereby expressly acknowledge ourselves to be held and bound to pay unto the city of Lancaster, Texas, hereinafter called CITY, a municipal corporation organized and existing under the laws of Texas, at Lancaster, Dallas County, Texas, the sum of Enter Script Amount Dollars (\$xxx,xxx.00) in lawful money of the United States, for the payment of which sum will and truly to be made unto said City of Lancaster, and its successors, said PRINCIPAL AND SURETIES do hereby bind ourselves, our heirs, executors, administrators, their assigns and successors, jointly and severally, firmly by these presents. This bond shall automatically be increased by the amount of any Change Order or Supplemental Agreement which increases the Contract price, but in no event shall a Change Order or Supplemental Agreement which reduces the Contract price decreases the sum of this Bond.

THIS obligation is conditioned, however, that whereas said _____ has this _____ day of _____, 2010, entered into a written Contract with the said CITY to construct a **2.0 Million Gallon Elevated Storage Tank (Bid 2012-45)** located in the City of Lancaster, Texas, which Contract and Specifications therein mentioned adopted by the CITY, are hereby expressly made a part thereof as though the same were written and embodied herein.

WHEREAS, said Contract was entered into pursuant to the requirements of the CITY, and

WHEREAS, in said Contract, CONTRACTOR binds itself to use of materials and methods of construction such that all improvements including but not limited to the construction and installation of a **2.0 Million Gallon Elevated Storage Tank (Bid 2012-45)** will be initially completed free of perceptible defects and will remain in good repair and condition and free of perceptible defects for and during the period of two (2) years after the date of acceptance of the completed improvements by the CITY, and

WHEREAS, said CONTRACTOR binds itself to construct said improvements in such a manner and obtain inspection approvals in proper sequence as are required to obtain acceptance by the CITY and to repair or reconstruct the said improvements in whole or in part at any time within said two (2) years period to such an extent as the CITY deems necessary to properly correct all defects except those which have been caused by circumstances and conditions occurring after the time of construction over which the CONTRACTOR had no control and which are other than those arising from defect of construction by the CONTRACTOR; and,

WHEREAS, after the acceptance of the improvements by the CITY, said CONTRACTOR binds itself, upon receiving notice from the CITY of the need thereof to repair or reconstruct said improvements and if the CONTRACTOR fails to make the necessary corrections, within ten (10) days after being notified, the CITY may do or have done all said corrective work and shall have recovery hereon for all expenses thereby incurred.

WHEREAS, under the Plans and Specifications, and Contract, it is provided that the CONTRACTOR will maintain and keep in good repair the work herein contracted to be done and performed for a period of two year (2) from the date of acceptance; it being understood that the purpose of this section is to cover all defective conditions arising by reason of defective material, work, or labor performed by said CONTRACTOR; and in case the said CONTRACTOR shall fail to do so, within ten (10) days after being notified, it is agreed that the CITY may do said work and supply such materials, and charge to same against the said CONTRACTOR, AND SURETIES, on this obligation, and said CONTRACTOR AND SURETIES hereon shall be subject to the liquidated damages mentioned in said contract.

NOW THEREFORE, if the said CONTRACTOR, shall keep and perform its said agreement to maintain said work and keep the same in repair for the said maintenance period of Two (2) Year from the date of acceptance by the City, as provided, then these presents shall be null and void, and have no further effect, but if default shall be made by the said CONTRACTOR in the performance of his contract to so maintain and repair said work, then these presents shall have full force and effect, and said CITY shall have and recover from said CONTRACTOR and SURETIES damages in the premises, as provided, and it is further agreed that this obligation shall be a continuing one against the PRINCIPAL and SURETIES hereon, and that successive recoveries may be had thereon for successive breaches until the full amount shall have been exhausted; and it is further understood that the obligation herein to maintain said work shall continue throughout said maintenance period, and the same shall not be changed, diminished, or in any manner affected from any cause during said time.

PROVIDED FURTHER, that if any legal action be filed upon this Bond, exclusive venue shall lie in Dallas County, State of Texas.

AND PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder or the specifications accompanying the same shall in anyway affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

This Bond complies with the provisions of Chapter 2253, Texas Government Code, and any other applicable statutes of the State of Texas.

The undersigned and designated agent is hereby designated by the Surety herein as the Resident agent in Dallas County to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship, as provided by Article 7.19-1 of the Insurance Code, Vernon's Annotated Civil Statutes of the State of Texas.

IN WITNESS WHEREOF, the said _____ has caused these presents to be executed by them; and the said _____ has caused these presents to be executed by its ATTORNEY-IN-FACT _____ and the said ATTORNEY-IN-FACT _____ has hereunto set his hand this the day of _____, 2012.

Principal

Surety

By: _____

By: _____

Print or Type Name

Print or Type Name

Title: _____

Title: _____

Address: _____

Address: _____

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

PAYMENT BOND

STATE OF TEXAS §
COUNTY OF DALLAS §

KNOW ALL MEN BY THESE PRESENTS: That **Contractor Name** of the City of _____, County of _____, and State of **Texas**, as principal, and _____ authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bond unto the city of Lancaster (Owner), in the penal sum of **Enter Dollar Amount Dollars (\$xx,xxx.00)** for the payment whereof, the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

2.0 Million Gallon Elevated Storage Tank (Bid 2012-45)

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the __ day of _____, **2012**, for the construction of **2.0 Million Gallon Elevated Storage Tank Bid #2012-45** which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal and its subcontractors shall well and faithfully make payment to each and every claimant (as defined in Chapter 2253, Texas Government Code, as amended) supply labor or materials in the prosecution of the work under the contract, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code, as currently amended, and all liabilities on this bond shall be determined in accordance with the provisions of said statute to the same extent as if it were copied at length herein.

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

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this ____ day of _____, 2012.

Principal

Surety

By: _____

By: _____

Print or Type Name

Print or Type Name

Title: _____

Title: _____

Address: _____

Address: _____

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

PERFORMANCE BOND

STATE OF TEXAS §
COUNTY OF DALLAS §

KNOW ALL MEN BY THESE PRESENTS: That Contractor Name of the City of _____, County of Dallas, and State of Texas, as principal, and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto the City of Lancaster, Texas (Owner), in the sum of Enter Script Amount dollars (\$xx,xxx.00) as an appropriate measure of liquidated damages for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the ____ day of _____, 2012 for the construction of a 2.0 Million Gallon Elevated Storage Tank (2012-45), which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall faithfully perform the work in accordance with the plans, specifications, and contract documents and shall fully indemnify and save harmless Owner from all costs and damages which Owner may suffer by reason of Principals default, and reimburse and repay Owner all outlay and expense which Owner may incur in making good such default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code, as currently amended, and all liabilities on this bond shall be determined in accordance with the provisions of said statute to the same extent as if it were copied at length herein.

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

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____, 20____.

Principal

Surety

By: _____

By: _____

Title: _____

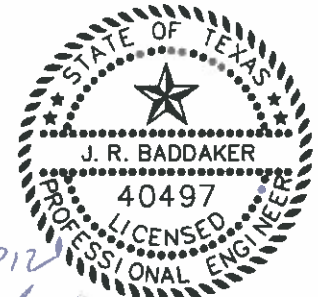
Title: _____

Address: _____

Address: _____

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

City of Lancaster
2.0 MG Elevated Storage Tank
Bid No. 2012-45
PRP12100
ADDENDUM NO. 1
November 5, 2012



FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

The time for the submission of Bids is unchanged.

The location for the submission of bids is unchanged.

00 91 13 ADDENDUM No. 1

The following additions, deletions, modifications, or clarifications shall be made to the appropriate sections of the Contract Documents. Bidders shall acknowledge receipt of this Addendum in the space provided on the Bid Form.

CLARIFICATIONS:

1. There is no pre-bid meeting for this project.
2. Questions will be accepted from Bidders until Monday, November 12 at 2:00 p.m. Reference General Specifications, Addenda Paragraph: "Bidders desiring further information, or interpretation of the plans or specification, must make request for such information in writing to the Purchasing Agent, prior to 48 hours before the bid opening."
3. The Bid Bond is located in the Attachments Tab, Page 2, Item 31.
4. Addendums and responses to questions will be posted to the City's website.
5. Bid results will be posted to the City's website.
6. The following forms will be submitted as follows:
 - a) Form W-9 – With Bid
 - b) Conflict of Interest Questionnaire – With Bid
 - c) Vendor Compliance to State Law – With Bid

BIDDING REQUIREMENTS:

City of Lancaster General Specifications

Reference Page 1, Working Hours

Modification: Modify this section to read: "Working hours are not to begin prior to 7:00 a.m. or extend past 7:00 4:00 p.m."

Reference Page 4, Payment for Overtime Charges

Modification: Modify the first sentence to read: "The Contractor will be responsible for payment of overtime charges for the Construction Inspector before 7:30 a.m. and after 7:30 4:00 p.m. (Monday through Friday) and on Saturdays."

Section 01 32 33 Photographic Documentation

Reference Page 1, Paragraph 1.01, A.

Modification: Modify the paragraph to read: "Provide ~~one~~ four digital photographs taken from the top of the tank, facing north, south, east and west. Provide four digital photographs of the tank taken from the ground from the north, south, east and west for a total of eight digital photographs. All photographs will be taken when construction is complete ~~.aerial photograph of the completed Project from an angle and height to include the entire Site.~~"

Reference Page 1, Paragraph 1.01, B.

Modification: Modify the first sentence to read: "All digital photographs provided under this Section ~~and digital copies of these photographs~~ are to become the property of the Owner."

Reference Page 1, Paragraph 2.01, C.

Modification: Modify the paragraph to read: "Provide ~~two color prints of each photograph and~~ a digital copy of each photograph taken."

Reference Page 1, Paragraph 2.01

Deletion: Delete Paragraphs D, E and F.

Section 01 33 00.01 Table of Required Submittals

Reference 1st Row of Table

Addition: Add a new 1st Row and add the following:

Spec Number: 01 32 33

Description: Photographic Documentation

Record Data: X

REPLACE THE FOLLOWING SECTIONS (ATTACHMENTS):

Replace Section	With Attached Section
City of Lancaster Standard Fixed Price Construction Agreement (Bid Attachment #11)	City of Lancaster Standard Fixed Price Construction Agreement* (Bid Attachment #11)
Maintenance Bond (Bid Attachment #32)	Maintenance Bond (Bid Attachment #32)
Payment Bond (Bid Attachment #33)	Payment Bond (Bid Attachment #33)

*The following items have changed in the City of Lancaster Standard Fixed Price Construction Agreement:

- Liquidated Damages changed from \$120.00 to \$500.00 per day in Paragraph 3.1.2
- The word "ARCHITECT" was replaced by "ENGINEER" throughout the entire document
- Wage Determination number of TX27 was added to Paragraph 7.14.

DELETE THE FOLLOWING SECTIONS (ATTACHMENTS):

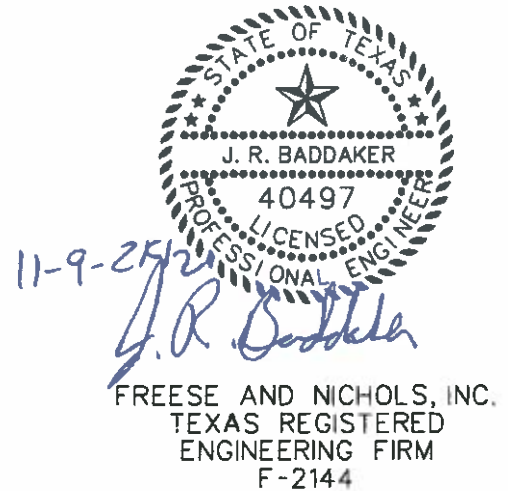
Delete Section
Debarment Certification (Bid Attachment #14)
Lobbying Certification (Bid Attachment #15)

ADD THE FOLLOWING ATTRIBUTES:

Add Attribute
Bid Bond (Bid Attribute #49)
Payment Bond (Bid Attribute #50)
Performance Bond (Bid Attribute #51)
Maintenance Bond (Bid Attribute #52)

END OF ADDENDUM NO. 1

City of Lancaster
2.0 MG Elevated Storage Tank
Bid No. 2012-45
PRP12100
ADDENDUM NO. 2
November 09, 2012



The time for the submission of Bids is unchanged.

The location for the submission of bids is unchanged.

00 91 13 ADDENDUM No. 2

The following additions, deletions, modifications, or clarifications shall be made to the appropriate sections of the Contract Documents. Bidders shall acknowledge receipt of this Addendum in the space provided on the Bid Form.

CLARIFICATIONS:

1. A list of proposed subcontractors shall be submitted with the bid. The list shall include the subcontractor name, type of work, address, phone number, contact person and email address.
2. Reference the updated documents for contract time limits, liquidated damages, permit fees and other miscellaneous changes.
3. The City has received an administrative order from the Texas Commission on Environmental Quality for providing additional elevated storage in this pressure plane. This administrative order is a major factor in setting the time for the tank to be operating.
4. The pipe material for the overflow and inlet/outlet pipe must be Schedule 10 as per technical specification 33 16 19.13, Composite Elevated Water Utility Storage Tank. Schedule 10S will not be accepted.
5. Reference Detail 1 on Sheet C-7, SEQ8. Depth and location of the inlet/outlet pipe will be per tank manufacturer's design.
6. Safety climbing system and ladder cages shall remain on pedestal interior ladders even if platforms are less than 20-feet apart.
7. Section 01 11 00 Item 1.05.B.2 states "the cost for providing permanent power shall be paid for by the Contractor." There is currently an existing power pole on the site. The Contractor will remain responsible for and paying for extending service from the power pole to the site.
8. Reference City of Lancaster General Specifications, Page 4, Payment for Overtime Charges and Addendum #1, Page 1, for information on working overtime Monday through Friday and Saturdays.
9. Preconstruction photographs and preconstruction video is not required on this project. Monthly progress photographs are not required on this project. Reference Section 01 32 33 and Addendum #1.
10. The following forms shall be submitted with the bid:
 - a. Attachment #10 – 00 42 23.03 Contractor Compliance to Texas Sales Tax Code.

- b. Attachment #13 – Contractor Compliance with Worker’s Compensation Law.
- c. Attachment # 18 (Appendix C) – Certification Regarding Lobbying.

BIDDING REQUIREMENTS:

Section 01 29 00 Payment Procedures

Reference 2.03.A, Item No.: C1 – Elevated Tank 2nd Floor.

Addition: Add the following after the first sentence: **“The 1-ton jib crane shall be included in this bid item.”**

Modification: Modify the second sentence to read: **“The opening shall have a removable hand rail or safety chain with a separate opening for the ladder, but shall not have stairwells.”**

Section 01 31 13 Project Coordination

Reference Item 1.04 A.3

Modification: Modify the paragraph to read as follows: **“3. The time of the meeting will be determined by the Engineer but will be after the Notice of Award is issued and not later than 15 10 days after the Notice to Proceed is issued.”**

Reference Item 1.04 A.6

Deletion: Delete the entire paragraph as follows:

~~“6. Letter indicating the agents of authority for the Contractor and the limit of that authority with respect to the execution of legal documents, contract modifications and payment requests.”~~

Reference Item 1.08 A.3.C 9)

Deletion: Delete the entire paragraph as follows:

~~9). Home office cost.~~

Section 01 32 33 Photographic Documentation

Reference Paragraph 2.01, D and Addendum #1.

Addition: Add a new Paragraph D to read as follows:

“D. Digital photographs shall be submitted by the Contractor to the Owner on a CD, DVD or digital storage device.”

TECHNICAL SPECIFICATIONS:

Section 33 16 19.13 Composite Elevated Water Utility Storage Tank

Reference Item 1.06.A.1

Modification: Modify to read as follows: "Permits or licenses required for permanent structures, changes in existing facilities or advancement of the construction shall be secured and paid for by the Tank manufacturer prior to the start of construction. **Except as otherwise specified, the Owner waives all fees except the Contractor registration fees and inspection fees.** These include building permits, code inspections, etc."

Reference Item 2.01 A.2

Modification: Modify to read as follows: "Driveways, mow strips, sidewalks, flumes, and other miscellaneous concrete items shall be **Class A (3,000 psi)** in accordance with ~~Section 03-30-00 "Cast-In-Place Concrete.~~ **NCTCOG Standard Specifications for Public Works Construction, 3rd Edition, Item 5.8 Portland Cement Concrete Pavement.**"

Reference Item 2.05.L.4.

Modification: Modify the paragraph to read: "Ductile Iron Pipe in accordance with ~~Section 33-05-01.02 "Ductile Iron Pipe and Fittings.~~ **NCTCOG Standard Specifications for Public Works Construction, 3rd Edition, Item 212.8, Ductile-Iron Pressure Pipe and Fittings.**"

Reference Item 2.05.N.2.d.

Deletion: Delete Paragraph 2.05.N.2.d as follows: "~~d. Provide a galvanized steel access stairway adjacent to the support wall. Access openings through the structural floor shall be protected with 42 inch high galvanized steel handrails.~~"

Addition: Add Paragraph 2.05.N.2.d as follows: "**Provide an opening in the structural floor for a 1-ton jib crane protected with a 42" high galvanized steel handrail. Provide a separate opening in the structural floor for the access ladder.**"

DRAWINGS:

SHEET G-1, SEQ1

Reference: City of Lancaster Water Notes, paragraph 2.

Modification: Modify the note to read: "PIPES 12 INCHES IN DIAMETER AND SMALLER SHALL BE POLYVINYL CHLORIDE (P.V.C.) MEETING THE REQUIREMENTS OF AWWA C900 DR18 OR DUCTILE IRON PIPE (D.I.P) MEETING THE REQUIREMENTS OF AWWA C151 **PRESSURE CLASS 50-250** Pipe. ALL D.I.P SHALL BE WRAPPED WITH A POLYETHYLENE LINER ENCASEMENT. **ALL FITTINGS (ALL SIZES) SHALL BE AWWA C153 COMPACT FITTINGS PRESSURE CLASS 250. TAPPING SLEEVES SHALL BE DUCTILE IRON PRESSURE CLASS 250 "**

SHEET C-6, SEQ7

Reference: ELEVATION – SECTION

Modification: Modify the tank bowl diameter to 95', +/- 5' on the drawing.

Reference: Note 2.

Modification: Modify the first sentence of Note 2 to read: "The pedestal diameter **may be adjusted +/- 5'** and head range may be adjusted by up to 5' to match the manufacturer's dimension. Head range may not exceed 45'."

SHEET C-7, SEQ8

Reference: Detail 1, SECTION TANK PIPING, Note 1.

Modification: Modify Note 1 to read: "All ~~below ground tank piping shall be epoxy coated and lined (AWWA C-116)~~ ductile iron pipe shall be coated with a 1 mil bituminous coating in accordance with AWWA C153 and AWWA C151. Wrap buried pipe in polyethylene encasement in accordance with AWWA C105. Ductile iron pipe shall have a cement mortar lining in accordance with AWWA C104. Thickness of lining shall be as specified in AWWA C104."

Reference: Detail 1, SECTION TANK PIPING, Note 2.

Modification: Modify Note 2 to read: "Floor slab shall be structural slab constructed ~~on earthen forms with a shallow ring-beam footing system~~ in accordance with the Geotechnical Report."

SHEET C-10, SEQ11

Reference: Typical Service Connection with Meter Box

Modification: Revise the meter setter callout to read as follows: "METER SETTER W/ MULTI PURPOSE END CONNECTIONS SHALL BE MUELLER OR APPROVED EQUAL"

REPLACE THE FOLLOWING SECTIONS (ATTACHMENTS):

Replace Section	With Attached Section
City of Lancaster Standard Fixed Price Construction Agreement (Bid Attachment #11)	City of Lancaster Standard Fixed Price Construction Agreement* (Bid Attachment #11)
Procurement Construction Specifications –General Specifications (Bid Attachment #4)	Procurement Construction Specifications –General Specifications** (Bid Attachment #4)
City of Lancaster General Conditions (Bid Attachment #5)	City of Lancaster General Conditions (Bid Attachment #5)***

*Changes have been made to the following paragraphs in the City of Lancaster Standard Fixed Price Construction Agreement:

- Paragraph 2.2, Work, Paragraph 1.
- Paragraph 3.1, Time and Liquidated Damages, Paragraph 1 and 2.
- Paragraph 5.5, Substantial Completion, Paragraph 1.
- Paragraph 5.6, Completion and Final Payment, Paragraph 1 and 1.1.

** Changes have been made to the following paragraphs in the City of Lancaster Procurement Construction Specifications – General Specifications:

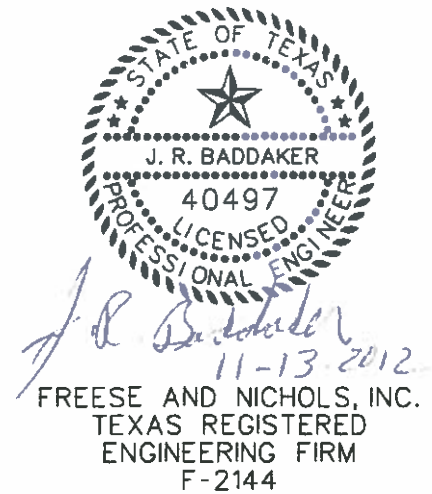
- Barricades, Warning and Detour Signs.
- Locations of Mains.

*** Changes have been made to the following paragraphs in the City of Lancaster General Conditions:

- Paragraph 9, Reference Standards and Laws and Regulations.

END OF ADDENDUM NO. 2

**City of Lancaster
2.0 MG Elevated Storage Tank
Bid No. 2012-45
PRP12100
ADDENDUM NO. 3
November 13, 2012**



The time for the submission of Bids is unchanged.

The location for the submission of bids is unchanged.

00 91 13 ADDENDUM No. 3

The following additions, deletions, modifications, or clarifications shall be made to the appropriate sections of the Contract Documents. Bidders shall acknowledge receipt of this Addendum in the space provided on the Bid Form.

BIDDING REQUIREMENTS:

Section 01 29 00 Payment Procedures

Reference 2.02.A

Modification: Modify the Bid Item title to read: "Item No.: B1 & B2 – 24" C905 DR-18 ~~DR-25~~ PVC & 12" C900 DR-18 PVC WATER PIPE."

END OF ADDENDUM NO. 3

2.0 MG Elevated Water Storage Tank Bid No. 2012-45
Site Visit POC's

Paul Hardy
Construction Inspector
City of Lancaster
700 E. Main Street
Lancaster, TX 75146
214-500-1394 (Cell)
PHardy@lancaster-tx.com

Robin Ernstrom, EIT
Water / Wastewater Transmission and Utilities
Freese and Nichols, Inc.
1701 N. Market St.
Dallas, TX 75202
214-217-2253 (Office)
214-217-2201 (Fax)
robin.ernstrom@freese.com

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK**

**CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 00 BIDDING AND CONTRACT REQUIREMENTS

00 42 23.02 Vendor Compliance to State Law
00 42 23.03 Contractor Compliance to Texas Sales Tax Code
Special Conditions



J. R. Baddaker 10-12-2012

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

00 42 23.02 VENDOR COMPLIANCE TO STATE LAW

Chapter 2252 of the Texas Government Code applies to the award of government contract to nonresident bidders. This law provides that:

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

"Nonresident Bidder" refers to a person who is not a resident of Texas

"Resident Bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

Check the statement that is correct for Bidder.

☐ Nonresident bidders in _____ (give state), our principal place of business, are required to be _____ percent lower than resident bidders by State law. A copy of the statute is attached.

☐ Nonresident bidders in _____ (give state), our principal place of business, are not required to under bid resident bidders.

☒ Our principal place of business or corporate offices are in the State of Texas.

Bidder:

Company Name: LANDMARK STRUCTURES I, L.P.
(typed or printed)

By: 
(Signature -- attach evidence of authority to sign)

Name: Mike Lamon
(typed or printed)

Title: Vice President of Landmark Structures Management Inc., General Partner
(Signature of Corporate Secretary)

Business Address: 1665 Harmon Road
Fort Worth, Texas 76177

Phone: 817-439-8888 Facsimile: 817-230-2070 E-mail estimating@teamlandmark.com

END OF SECTION

LANDMARK STRUCTURES MANAGEMENT INC.

ACTION BY SOLE DIRECTOR WITHOUT A MEETING

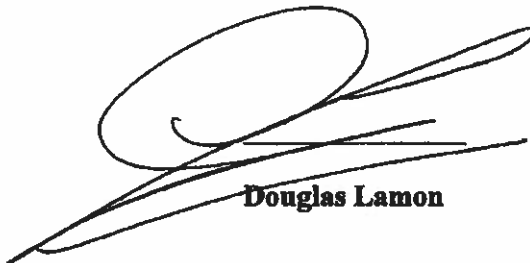
The undersigned, being the sole director of LANDMARK STRUCTURES MANAGEMENT INC, does hereby take the following action by written consent, pursuant to the provisions of section 141(f) of the General Corporation Law of the State of Delaware.

Adoption of the following Resolutions:

RESOLVED :

- 1) that Mike Lamon, being Vice President of Landmark Structures Management Inc., general partner of Landmark Structures I, LP, is hereby authorized as follows:
 - a) to submit bids and/or to negotiate contracts and/or to enter into contracts for and on behalf of Landmark Structures I, LP, and
 - b) to execute and deliver such documents and to take such other actions as he considers necessary or advisable to give effect to this resolution and the transactions provided for herein.
- 2) that any bid submitted and/or any contract negotiated and/or any contract entered into by Mike Lamon in his capacity as Vice President of Landmark Structures Management Inc. as witnessed by his signature thereto is hereby recognized as binding upon Landmark Structures I, LP, and Landmark Structures Management Inc.

Dated as of the 16th day of January, 2001.



Douglas Lamon

00 42 23.03 CONTRACTOR COMPLIANCE TO TEXAS SALES TAX CODE

Comply with all requirements of the Texas Sales Tax Code. The Contractor hereby certifies that the Contract Amount is divided as follows:

Material permanently incorporated into the Project and resold to the Owner as defined in Tax Code.

\$ 1,000,000.00

All other charges and costs

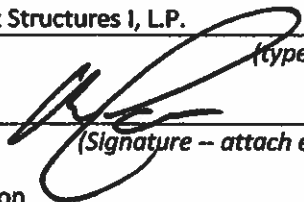
\$ 2,245,000.00

Total (Total must equal the Contract Price)

\$ 3,245,000.00

Contractor:

Company Name: Landmark Structures I, L.P.
(typed or printed)

By: 
(Signature -- attach evidence of authority to sign)

Name: Mike Lamon
(typed or printed)

Title: Vice President of Landmark Structures Management Inc., General Partner
(Signature of Corporate Secretary)

Business Address: 1665 Harmon Road
Fort Worth, Texas 76177

Phone: 817-439-8888 Facsimile: 817-230-2070 E-mail: estimating@teamlandmark.com

Note to Specifier: Execute this form at time of execution of contract and make a part of the contract.

Notes:

1. The Total Amount of Bid for Materials and Services must equal the sum of the Total Amount Bid for Materials and the Total Amount Bid for Services as well as the sum of all individual bid items.
2. Materials are those items which are tax exempt and are physically incorporated into the facilities constructed for the Owner. Materials include, but are not limited to, purchased items such as pipe, embedment, concrete, manholes, asphalt, road base, machinery, and equipment, etc.
3. Services are those items which are not tax exempt and are used by the Contractor but are not physically incorporated into the Owner's facilities and/or items that are consumed by construction. Services include, but are not limited to, supplies, tools, concrete forms, scaffolding, temporary buildings, the rental of equipment, skill, and labor, etc.

END OF SECTION

LANDMARK STRUCTURES MANAGEMENT INC.

ACTION BY SOLE DIRECTOR WITHOUT A MEETING

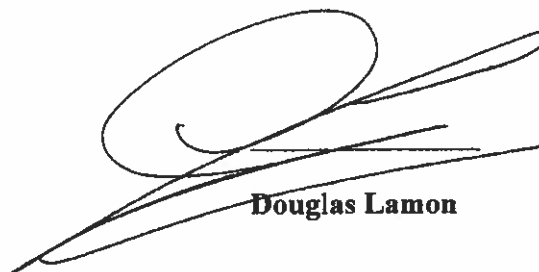
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Adoption of the following Resolutions:

RESOLVED :

- 1) that Mike Lamon, being Vice President of Landmark Structures Management Inc., general partner of Landmark Structures I, LP, is hereby authorized as follows:
 - a) to submit bids and/or to negotiate contracts and/or to enter into contracts for and on behalf of Landmark Structures I, LP, and
 - b) to execute and deliver such documents and to take such other actions as he considers necessary or advisable to give effect to this resolution and the transactions provided for herein.
- 2) that any bid submitted and/or any contract negotiated and/or any contract entered into by Mike Lamon in his capacity as Vice President of Landmark Structures Management Inc. as witnessed by his signature thereto is hereby recognized as binding upon Landmark Structures I, LP, and Landmark Structures Management Inc.

Dated as of the 16th day of January, 2001.



Douglas Lamon

SPECIAL CONDITIONS

The General Conditions of the Standard Specifications for Public Works Construction, NCTCG, 3rd Edition are hereby modified as follows:

1. 1.0 Definitions- Substitute the following for the definition of “Engineer”:
“Engineer”: The Owner’s City Engineer or duly authorized representative overseeing administration of the contract and the Contractor’s performance thereunder. Unless otherwise specifically provided in the contract documents, the Owner’s City Engineer is an employee of the City of Lancaster and is not the Consulting Engineer.
2. 1.0 Definitions- Add the following definition: “Consulting Engineer: The person, firm, or entity hired as an independent consultant by the OWNER to design the project. The Consulting Engineer shall be understood to be the Consulting Engineer of the Owner and nothing contained in the Contract Documents shall be construed to make the Consulting Engineer an employee of the Owner, nor shall they be construed to create any contractual or agency relationship between the Consulting Engineer and the Contractor. The term includes the officers, employees, associates, agents and subconsultants of the Consulting Engineer, if any.”
3. 1.9 Irregular Proposals- Add to the end of the second paragraph: “If the conflict is not brought to the Owner’s attention prior to the bid opening, it will be assumed that the more expensive alternative is included in the Contractor’s bid price.”
4. 1.10 Rejection of Proposals – In the second sentence, change the word “shall” to “may”.
5. Item 1.13 – Replace “written work order” with “Notice to Proceed.”
6. Item 1.15 - This item incorrectly references Article 5160 for Bond requirements. Change to: Chapter 2253 of the Texas Government Code.
7. Item 1.21.1 - This item incorrectly references Article 5160 for Bond requirements. That Article was changed to Chapter 2253 of the Texas Government Code.
8. Item 1.22.3 - In the second sentence, the word “safety” should be added to the list of items the Contractor is totally responsible for.
9. Item 1.22.6 – Replace the term “work order” in the first sentence with “Notice to Proceed.”
10. Item 1.24.4 - The definition of this item should be expanded to recognize that structural excavations can be considered for trench safety once walls are erected next to excavated slopes.
11. Item 1.24.5 - Replace the word “any” with the words “included in the bid

proposal.”

12. Item 1.26.1a – Delete and replace with:

- a. "Worker's Compensation and Employer's Liability Insurance as required by Texas law, with the policy endorsed to provide a waiver of subrogation as to the OWNER and CONSULTING ENGINEER; to provide coverage for not less than the following amounts or greater where required by Laws and Regulations."

Workers' Compensation, etc.,	
State	Statutory
Applicable Federal (e.g., Longshore)	Statutory
Employers' Liability	
Bodily Injury by Accident	\$500,000
Bodily Injury by Disease - Each Employee	\$500,000
Bodily Injury by Disease - Policy Limit	\$500,000
Maritime Coverage Endorsement	
Insurance shall include a waiver of subrogation in favor of the Additional Insured identified in Paragraph 1.26.1d	

13. Item 1.26.1b – Insert the words "and CONSULTING ENGINEER" after the word "OWNER." Replace the table with the following table:

Insurance for Claims of Damages	
General Aggregate (Except Products - Completed Operations)	\$1,000,000 / Occurrence \$2,000,000 / Aggregate
Products - Completed Operations Aggregate	\$1,000,000 / Occurrence \$2,000,000 / Aggregate
Personal and Advertising Injury (One Person/Organization)	\$1,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000
Limit Per Person - Medical Expense	\$5,000
Personal Injury Liability coverage will include claims arising out of Employment Practices Liability, limited to coverage provided under standard contract.	1,000,000

Insurance for Claims of Damages	
Property Damage Liability insurance will provide explosion, collapse and underground coverage where applicable	\$1,000,000
Watercraft Liability Policy. Coverage shall apply to all self-propelled vessels	\$1,000,000
Excess Liability, Umbrella Form to include coverage of Watercraft Liability. General Aggregate - Each Occurrence	\$1,000,000

14. Item 1.26.1c – Replace entire paragraph with the following: "Contractor's comprehensive automobile and truck liability insurance required by Texas law, covering owned, hired and non-owned vehicles, with coverage for not less than the following amounts or greater where required by Laws and Regulations."

Bodily Injury	
Each Person	\$1,000,000
Each Accident	\$1,000,000
Property Damage	
Each Accident, or	\$1,000,000
Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000

15. Item 1.26.1 – Add the following as paragraph (d):
 "(d) additional insured on all insurance policies include:
1. City of Lancaster, TX
 2. Freese and Nichols, Inc.
 3. Brittain & Crawford, LLC."
16. Item 1.26.2 – In the last sentence, replace "\$600,000 per occurrence" with "1,000,000 per occurrence."
17. Item 1.26.3 - Delete the words "If required by OWNER" in the first sentence.
18. Item 1.26.5a(1) - Insert the words "and CONSULTING ENGINEER" after the word "OWNER."
19. Item 1.26.5a(4) - Insert the words "CONSULTING ENGINEER" after the first "OWNER" and "and CONSULTING ENGINEER" after the second "OWNER."

20. Item 1.26.5c - Insert the words "or CONSULTING ENGINEER" after the word "OWNER" throughout the paragraph.
21. Item 1.28 - In the seventh paragraph, replace the word "any" with "only" in the second sentence. Also, add the requirement for the Contractor to stamp his shop drawing with "the Contractor has reviewed this shop drawing and found it to be in compliance."
22. Item 1.32.1 - Change so that "The Contractor shall provide the required construction surveying and staking. The OWNER will provide engineering surveys to establish reference and control points necessary to enable the Contractor to proceed with the work."
23. Item 1.37.1 - Add the words "and OWNER" to the end of the last sentence of the last paragraph.
24. Item 1.38c - Change "15%" to "5%" to match the Engineers Joint Contract Documents Committee of ASCE instead of the wording that is shown in the NCTCOG documents.
25. Item 1.41 - Delete "... manner of work performed, rate of progress of the work, sequence of the construction ..." from the second sentence. These are items the Contractor should control.
26. EDA Grant Documents that are applicable to this project are located in Appendix C of the Specifications.

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK
CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 01 GENERAL REQUIREMENTS

01 11 00	Summary of Work
01 23 10	Alternates and Allowances
01 29 00	Payment Procedures
01 31 00	Project Management and Coordination
01 31 13	Project Coordination
01 31 13.13	Forms
01 32 16	Construction Progress Schedule
01 32 33	Photographic Documentation
01 33 00	Submittal Procedures
01 33 00.01	Table of Required Submittals
01 42 16	Definitions
01 57 00	Temporary Controls
01 70 00	Execution and Closeout Requirements
01 74 23	Final Cleaning
01 78 23	Operation and Maintenance Data



J. R. Baddaker 10-17-2012

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

01 11 00 SUMMARY OF WORK

1.00 GENERAL

1.01 WORK INCLUDED

- A. Construct Work as described in the Contract Documents.
1. Provide the materials, equipment, and incidentals required to make the Project completely and fully operable.
 2. Provide the labor, equipment, tools, and consumable supplies required for a complete Project.
 3. Provide the civil, architectural, structural, mechanical, electrical, instrumentation and all other Work required for a complete and operable Project.
 4. Test and place the completed Project in operation.
 5. Provide the special tools, spare parts, lubricants, supplies, or other materials as indicated in Contract Documents for the operation and maintenance of the Project.
 6. Install Owner provided products and place in operation.
 7. The Contract Documents do not indicate or describe all of the Work required to complete the Project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Engineer.

1.02 JOB CONDITIONS

- A. The General Conditions, the Supplementary Conditions, and General Requirements apply to each Section of the Specifications.
- B. Comply with all applicable state and local codes and regulations pertaining to the nature and character of the Work being performed.

1.03 DESCRIPTION OF WORK

- A. Work is described in general, non-inclusive terms as:
1. Construction of one 2.0 million gallon composite elevated water storage tank and associated site improvements and appurtenances.
 2. Approximately 1,201 linear feet of 24" PVC water pipe and approximately 91 linear feet of 12" PVC water pipe.

1.04 OWNER-PROVIDED PRODUCTS

- A. Owner will provide the following products to the Contractor for installation:

Description	Supplier
Generac Guardian Series 8kW Generator	City of Lancaster
500 Gallon Propane Fuel Tank	City of Lancaster

1. Obtain clarification from the Engineer in the case of a disagreement between the above list and those specified elsewhere in the Contract Documents.
- B. Assume responsibilities for coordination, installation and startup of Owner provided products as for products selected and purchased by the Contractor.
- C. Provide labor, materials, equipment, tools, consumable supplies, and incidentals not specifically required by the contract between the Owner and Supplier but required to provide a complete and operable product.
- D. Payment for the product will be made directly from the Owner to the product provider.
- E. Include all other costs for the product in the proposed bid price.

1.05 CONSTRUCTION OF UTILITIES

- A. Utility companies or their contractors will provide new or enhanced utilities for this Project.
- B. Power and Electrical Services:
 1. Contractor shall provide permanent power connections for the Site through the power utility unless indicated otherwise in the Contract Documents.
 2. Cost for providing permanent power shall be paid for by the Contractor.
 3. Contractor is required to coordinate and cooperate with others performing this Work.
 4. Power utility will provide the construction to the property line.
 5. Provide conduit, conductors, pull boxes, manholes, and other appurtenances for the installation of power cable between the property line and the transformer and between the transformer and the main power switch.
 6. Test conductors in accordance with NCTCOG Standards and coordinate with the power utility to energize the system when ready.
 7. Pay for temporary power, including but not limited to construction cost, meter connection, fees and permits.
 8. When permanent power is available at the Site, the Contractor may use this power source in lieu of temporary power source previously used.
 - a. Notify Engineer and Owner of intent to use the permanent power source.
 - b. Arrange with the power utility and pay the charges for connections and monthly charges for use of this power.
 9. Pay for the power consumed until the Project has been accepted as substantially complete.

1.06 OCCUPANCY

- A. As soon as any portion of the structure and equipment are ready for use, the Owner shall have the right to occupy or operate that portion upon written notice to the Contractor.
- B. Testing of equipment and appurtenances including specified test periods, training, and startup does not constitute acceptance for operation.

- C. Owner may accept the facility for continued use after startup and testing at the option of the Owner. If acceptance is delayed at the option of the Owner, shut down facilities per approved Operation and Maintenance procedures.
- D. The execution of bonds is understood to indicate the consent of the surety to these provisions.
- E. Provide an endorsement from the insurance carrier permitting occupancy of the structures and use of equipment during the remaining period of construction.
- F. Conduct operations to insure the least inconvenience to the Owner and general public.

2.00 PRODUCTS

2.01 MATERIALS

- A. Provide materials and products per the individual Sections of the Specifications.

END OF SECTION

01 23 10 ALTERNATES AND ALLOWANCES

1.00 GENERAL

1.01 REQUIREMENTS

A. Alternates:

1. This Section describes each alternate by number and describes the basic changes to be incorporated into the Work when this alternate is made a part of the Work in the Agreement.
2. The Contract Documents will outline the extent of Work to be included in the alternate Contract Price.
3. Coordinate related Work and modify surrounding Work as required to properly integrate the Work under each alternate, and provide a complete and functional system as required by the Contract Documents.
4. Alternates will be accepted or rejected at the option of the Owner.
5. Alternate prices will be maintained a minimum of 120 days, unless noted otherwise.

B. Allowances:

1. Include specified allowance amount in Contract Price.
2. The amount of each allowance includes:
 - a. The cost of the product to the Contractor less any applicable trade discounts.
 - b. Delivery to the Site.
 - c. Applicable taxes.
3. Include in the Contract Price all costs for:
 - a. Handling at the Site, including unloading, uncrating, and storage per Section 01 31 00 "Project Management and Coordination."
 - b. Cost for labor and equipment for installation and finishing.
 - c. Cost for related products not specifically listed in the allowance required for installation, including consumable supplies and materials.
 - d. All overhead, profit, and related costs.
4. Assist Owner in the selection of products.
 - a. Determine qualified Suppliers.
 - b. Obtain proposals from qualified Suppliers.
 - c. Present available alternates to the Owner through the Engineer. Notify Engineer of:
 - 1). Any objections to a particular Supplier or product.
 - 2). Effect on the Construction Schedule anticipated by the selection of each option.
 - 3). Cost of each option.

5. Upon selection of the product:
 - a. Purchase and install the product.
 - b. Contractor's responsibilities for products shall be the same as for products selected by the Contractor.
6. Submit a Contract Modification Request per Section 01 31 13 "Project Coordination" to adjust Contract Price if the net cost of the product is more or less than the specified amount.
 - a. For products specified as Unit Price Work, the unit cost shall apply to the quantities installed per the method of payment described in Section 01 29 00 "Payment Procedures."
 - b. Do not perform Work until selection of alternate has been approved in writing by the Owner.
 - c. Provide actual invoices for the materials.

1.02 SUBMITTALS

- A. Provide submittals for materials furnished as part of the alternate in accordance with Section 01 33 00 "Submittal Procedures."

1.03 DESCRIPTION OF ALTERNATES

- A. Alternate Additive: Bid Item C1: Construction of an elevated tank floor.

1.04 GUARANTEES

- A. Provide guarantees for products furnished under alternate bids / proposals or purchased by allowances as required by the Contract Documents.

END OF SECTION

01 29 00 PAYMENT PROCEDURES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Payments for Work shall conform to the provisions of the General Conditions, the Supplementary Conditions, the Agreement, and this Section. Apply provisions for payments in the Section to all Subcontractors and Suppliers.
- B. Submit Applications for Payment at the amounts indicated in the Agreement:
 - 1. Amounts for each item in the Agreement shall include but not be limited to cost for:
 - a. Mobilization, demobilization, cleanup, bonds, and insurance.
 - b. Professional services including but not limited to engineering and legal fees.
 - c. The products to be permanently incorporated into the Project.
 - d. The products consumed during the construction of the Project.
 - e. The labor and supervision to complete the Project.
 - f. The equipment, including tools, machinery, and appliances required to complete the Project.
 - g. The field and home office administration and overhead costs related directly or indirectly to the Project.
 - h. Any and all kinds, amount or class of excavation, backfilling, pumping or drainage, sheeting, shoring and bracing, disposal of any and all surplus materials, permanent protection of all overhead, surface or underground structures; removal and replacement of any poles, conduits, pipelines, fences, appurtenances and connections, cleaning up, overhead expense, bond, public liability and compensation and property damage insurance, patent fees, and royalties, risk due to the elements, and profits, unless otherwise specified.
 - 2. Provide Work not specifically set forth as an individual payment item but required to provide a complete and functional system. These items are a subsidiary obligation of the Contractor and are to be included in the Cost of Work.
 - 3. Payment will be made for materials on hand.
 - a. Store materials properly on-site per Section 01 31 00 "Project Management and Coordination."
 - 1). Payment will be made for the invoice amount less the specified retainage.
 - 2). Provide invoices at the time materials are included on the materials-on-hand tabulation.
 - b. Provide documentation of payment for materials-on-hand with the next payment request. Adjust payment to the amount actually paid if this differs from the invoice amount. Remove items from the materials on hand tabulation if this documentation is not provided so payment will not be made.

- c. Payment for materials-on-hand is provided for the convenience of the Contractor and does not constitute acceptance of the product.
- 4. The Work covered by progress payments becomes the property of the Owner at the time of payment.

1.02 SCHEDULE OF VALUES AND PAYMENTS

A. Submit a detailed Schedule of Values for the Work to be performed on the Project.

- 1. Submit schedule within 10 days prior to submitting the first Application for Payment.
- 2. Line items in the Agreement are to be used as line items in the schedule.
- 3. Payment will be made on the quantity of Work completed per Contract Documents during the payment period and as measured per this Section.
 - a. Payment amount is the Work quantity measured multiplied by the unit prices for that line item in the Agreement.
 - b. Payment on a unit price basis will not be made for Work outside finished dimensions shown in the Contract Documents.
 - c. Partial payments will be made for lump sum line items in the Agreement.
 - 1). Lump sum line items in the Agreement are to be divided into smaller unit prices to allow more accurate determination of the percentage of the item that has been completed.
 - a). Provide adequate detail to allow more accurate determination of the percentage of Work completed for each item.
 - b). Provide amounts for items that do not exceed \$50,000.00. An exception may be made for equipment packages that cannot be subdivided into units or subassemblies.
 - c). Separate product costs and installation costs.
 - (1). Product costs include cost for product, delivery and unloading costs, royalties and patent fees, taxes, and other cost paid directly to the Subcontractor or Supplier.
 - (2). Installation costs include cost for the supervision, labor and equipment for field fabrication, erection, installation, start up, initial operation and overhead and profit.
 - d). Lump sum items may be divided into an estimated number of units.
 - (1). The estimated number of units times the cost per unit must equal the lump sum amount for that line item.
 - (2). Payment will be made for all of the lump sum line item amount.
 - e). Include a directly proportional amount of overhead and profit for each line item.
 - f). Divide principal subcontract amounts into an adequate number of line items to allow determination of the percentage of Work completed for each item.

- 2). These line items may be used to establish the value of Work to be added or deleted from the Project.
- 3). Correlate line items with other administrative schedules and forms:
 - a). Progress schedule.
 - b). List of Subcontractors.
 - c). Schedule of allowances.
 - d). Schedule of alternatives.
 - e). List of products and principal Suppliers.
 - f). Schedule of Submittals.
- 4). Costs for mobilization shall be listed as a separate line item and shall be actual cost for:
 - a). Bonds and insurance.
 - b). Transportation and setup for equipment.
 - c). Transportation and/or erection of all field offices, sheds and storage facilities.
 - d). Salaries for preparation of submittals required before the first Application for Payment.
 - e). Salaries for field personnel assigned to the Project related to the mobilization of the Project.
 - (1). Mobilization may not exceed 5 percent of the total Contract Amount.
Cost for mobilization may be submitted only for Work completed.
- 5). The sum of all values listed in the schedule must equal the total Contract Price.
4. Submit a schedule indicating the anticipated schedule of payments to be made by the Owner. Schedule shall indicate:
 - a. The Application for Payment number.
 - b. Date the request is to be submitted.
 - c. Anticipated amount of payment to be requested.
5. Update the Schedule of Values quarterly or more often if necessary to provide a reasonably accurate indication of the funds that the Owner will need to have available to make payment to the Contractor for the Work performed.
- B. Provide written approval of the Schedule of Values, Application for Payment form, and method of payment by the Surety Company providing performance, and bonds prior to submitting the first Application for Payment. Payment will not be made without this approval.

1.03 PAYMENT PROCEDURES

- A. Submit Applications for Payment per the procedures indicated in Section 01 33 00 "Submittal Procedures." Submit a Schedule of Values in the Application for Payment format to be used.
 - B. Applications for Payment may be submitted on an approved form provided by the Owner.
 - C. Progress payments shall be made as the Work progresses on a monthly basis and will be completed in accordance with the Owner's procedures.
 - D. Provide a revised and up-to-date Progress Schedule per Section 01 32 16 "Construction Progress Schedules" with each Application for Payment.
 - E. Provide Project photographs per Section 01 32 33 "Photographic Documentation" with final Application for Payment.
-

1.04 ALTERNATES AND ALLOWANCES

- A. Include amounts for specified Alternate Work in the Agreement in accordance with Section 01 23 10 "Alternates and Allowances."
- B. Include amounts for specified Allowances for Work in the Agreement in accordance with Section 01 23 10 "Alternates and Allowances."

1.05 MEASUREMENT PROCEDURES

- A. Measure the Work described in the Agreement for payment. Payment will be made only for the actual measured and/or computed length, area, solid contents, number and weight, unless otherwise specifically provided. No extra or customary measurements of any kind will be allowed.

1.06 BASIS OF PAYMENT

- A. The Basis of Payment will be established in the Contract Documents.

2.00 BID ITEMS

2.01 BID ITEM A

- A. Item No.: A1 – 2.0 MILLION GALLON ELEVATED STORAGE TANK

Payment will be made per lump sum complete and in place unit. Payment shall be at the bid price and shall be full compensation for supplying all labor, equipment, and materials and installing the elevated storage tank, including clearing and grubbing, removal of trees, soil foundation, tank foundation, design of elevated storage tank, design of tank and soil foundations, supply and erection of foundation, tank pedestal, tank bowl, tank roof, all piping interior and exterior to tank, overflow facilities and rip rap, concrete mow strip, 6-foot chain link fence with 16-foot vehicle access gate, gate operator with illuminated key pad as specified in the plans, Knox Box, 12-inch concrete pads for generator and fuel tank, drain, control valve, isolation valves, bowl inlet and outlet valves, manways, ladders, platforms, railing, bowl painting including both logos, 24-inch ductile iron yard piping, testing, disinfection, and all other appurtenances and items related to the work and not included in other bid items. The bid price shall also include any supplemental geotechnical

engineering the Contractor chooses to perform to supplement the Geotechnical report included in the specifications.

2.02 BID ITEM B

A. Item No.: B1 & B2 –24" C905 DR-25 PVC & 12" C900 DR-18 PVC WATER PIPE

Measurement for PVC pipe shall be per linear foot of pipe installed for the nominal diameter listed in the Bid Proposal and Contract Documents, measured horizontally from center of fitting to center of fitting or end of pipe without any deduction for the length of intermediate fittings, specials, or valves.

Payment made at the unit price for this item shall be for pipe and fittings per the Contract Documents. Payment shall include furnishing, hauling and laying of pipe and fittings; pipe restraint; trench excavation, shoring and pumping where necessary; backfilling of trench, including embedment material, flowable fill and metallic detection tape; waterline markers; replacement of topsoil; replacement of landscaping to a condition as good or better than existing conditions prior to construction; protection or replacement of existing structures and utilities, including but not limited to water service connections, power poles and guy wires, buried electric services, buried telephone cable, buried fiber optic cable, etc.; protection or replacement of existing irrigation and sprinkler systems; disposal of surplus materials; construction, maintenance, and removal of temporary fencing; project site clean-up and maintenance; removal and replacement of existing barbed wire, chain link, pipe rail, wood, or other type of fence; removal and replacement of brick, masonry, wood, or any other type of driveway entrance; installation of new pavement markings as required; sign removal and replacement; mailbox removal and replacement; surveying and replacement of monuments; dust control; removal of mud from roadways; testing and disinfection; connections to existing waterlines, all fittings and adaptors, unless otherwise noted; and any incidental work and materials not otherwise provided for in this Section, all in strict accordance with the Contract Documents.

Construction and maintenance of required access roadways and driveways and test plugs used for testing shall also be included in the unit price.

Payment for pipe shall include any and all extra precautions or construction requirements necessary to adequately protect and support existing utilities and relocate existing utilities as necessary for construction of the waterline. The Contractor is responsible for all fees assessed by utility companies to provide utility support for existing utility lines or relocation, at no additional cost to the Owner. Payment shall include all costs required to have utility companies repair any damage to their lines caused by the Contractor's activities and any cleanup, property damages, fines, etc., resulting from damage caused by the Contractor.

No separate payment will be made for rock excavation, and the cost thereof shall be included in the unit price. The Contractor is not responsible for crop damage inside the

permanent easement(s). The Contractor is responsible for any crop or other property damage outside the permanent easement(s) caused by his operations, and shall negotiate a settlement with the landowner that will ensure that no claim will be filed against the Owner. All special easement requirements as listed in the Contract Documents shall be made incidental to this bid item. If an existing utility, sidewalk, or structure is damaged or must be relocated for construction, the cost of the repair or relocation shall be borne by the Contractor.

B. Item No.: B3 – 24" BUTTERFLY VALVE

Payment for butterfly valves shall be at the unit price per each and shall be full compensation for furnishing and installing butterfly valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, concrete pads, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

C. Item No.: B4 – 12" GATE VALVE

Payment for gate valves shall be at the unit price per each and shall be full compensation for furnishing and installing gate valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, concrete pads, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

D. Item No.: B5 – 24" GATE VALVE WITH 90° BEVEL GEAR

Payment for gate valves with 90° bevel gear shall be at the unit price per each and shall be full compensation for furnishing and installing gate valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, concrete pads, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

E. Item No.: B6 – 2" COMBINATION AIR VALVE

Payment for combination air valves shall be at the unit price per each and shall be full compensation for furnishing and installing 2" combination air valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

F. Item No.: B7 – 1" WATER SERVICE

Payment for water services and connections shall be made at the unit price bid per each and shall be full compensation for providing a 1-inch type "K" copper ASTM-B-88 service connection with a bullhead to be used as a sample point and a future irrigation connection by the City of Lancaster as indicated on the plans. Payment shall include double brass strap saddle, service line placement, embedment, backfill, all fittings, couplings and adaptors, reducers, meter box and all other items required for installation.

G. Item No.: B8 – FIRE HYDRANT ASSEMBLY

Payment for fire hydrant assemblies shall be made at the unit price bid per each and shall be full compensation for furnishing and installing fire hydrant assemblies as indicated in the Contract Drawings and in accordance with the Project Specifications, including all trenching, MJ x FLG 6" tee or MJ x FLG 12" x 6" reducer off main water line, 6" pipe after 6" gate valve (regardless of length), pipe placement, 6" gate valves, embedment, backfill, connections to water main and all other items required for installation.

H. Item No.: B9 – CONNECT TO EXISTING 30" WATERLINE (N. HOUSTON SCHOOL RD)

Payment for connection to the existing waterline shall be at the unit price bid for each item. Payment shall be full compensation for providing one (1) 30" x 24" tapping sleeve, and installing all pipe, valves, fittings, connections to existing lines, waterline shutdowns, disinfection, testing, and all other items necessary to complete the work. Bid price for this item shall include all coordination, temporary blocking and restraint, adaptors, specials, and fittings to make the connection at any time during the elevated tank construction contract.

I. Item No.: B10 – CONNECT TO EXISTING 12" WATERLINE (W. WINTERGREEN RD)

Payment for connection to the existing waterline shall be at the unit price bid for each item. Payment shall be full compensation for providing one (1) 12" tapping sleeve, and installing all pipe, valves, fittings, connections to existing lines, waterline shutdowns, disinfection, testing, and all other items necessary to complete the work. Bid price for this item shall include all coordination, temporary blocking and restraint, adaptors, specials, and fittings to make the connection at any time during the elevated tank construction contract.

J. Item No.: B11 – TRENCH SAFETY

The price bid per linear foot for this item shall be full compensation for trench safety as outlined in the Specifications. The Contractor shall estimate the quantity for trench safety and include that estimate in the Proposal. In no case shall the estimated quantity be less than 1,294 linear feet. Partial payment for trench safety shall be based on the total amount of trench safety installed.

K. Item No.: B12 – SITE PREPARATION AND GRADING

Payment shall be at the price bid, and shall be full compensation for site grading, including all earthwork, excavation, drainage work, fill, and compaction necessary to obtain the contours indicated on the plans for the tank site, entrance road, and ditch work.

L. Item No.: B13 – 6" CONCRETE ACCESS DRIVE AND PARKING

Payment for the 6" concrete access drive and parking shall be at the unit cost bid per square yard and shall be full compensation for concrete drive and striping installed per the project

plans and specifications. This bid item shall include all costs for labor, material, and coordination required.

M. Item No.: B14 – CONCRETE SIDEWALK REPLACEMENT

Payment for concrete sidewalk replacement shall be at the unit price per square yard and shall be full compensation for replacing sidewalk concrete along N. Houston School Road in accordance with the plans and specifications. This bid item shall include all costs for labor, material, and coordination required.

N. Item No.: B15 – ASPHALT PAVING REPLACEMENT

Payment for asphalt pavement replacement shall be at the unit price per square yard and shall be full compensation for replacing asphalt in W. Wintergreen Road in accordance with the plans and specifications. This bid item shall include all costs for labor, material, and coordination required.

O. Item No.: B16 – HYDROMULCH

Payment for hydromulch shall be at the unit cost bid per square yard and shall be full compensation for hydromulch installed at the tank site per the project plans and specifications.

P. Item No.: B17 – TANK/SITE ELECTRICAL AND SCADA

Payment made at the unit price bid shall be full compensation for furnishing all labor, equipment, and materials and installation of all SCADA, electrical and lighting on the tank site, including coordination with the electrical utility company, connections to the utility and the site appurtenances, antenna appurtenances, conduits, cables, panels, switches, lights and poles, supports and attachments, coordination with controls and instrumentation, manholes, testing, start-up, and all other items related to the work.

Q. Item No.: B18 – MOBILIZATION

Payment for mobilization shall be at the unit cost bid per lump sum and shall be full compensation for those items noted above in paragraph 1.02A.3.c.4, and shall not exceed 5% of the contract price.

R. Item No.: B19– STORM WATER POLLUTION PREVENTION PLAN

Payment for mobilization shall be at the unit cost bid per lump sum and shall be full compensation for preparation of the SWPPP by a registered engineer, submission of all forms for both the City and the Contractor, posting of documentation, required inspections and reports, and adjustments to the SWPPP where required. It shall also include furnishing, installing, and maintaining erosion and sediment control structures and procedures for the duration of the construction period, and the proper removal when no longer required.

S. Item No.: B20 – TRAFFIC CONTROL PLAN

Payment for traffic control shall be made at the lump sum price bid, and shall include design and all materials necessary for providing and maintaining traffic control around construction and providing a traffic control plan to meet all City of Lancaster standards. The lump sum bid price shall include temporary paving, cones, signs, barricades, flag med, temporary signal modifications, temporary striping and buttons, temporary drainage, and any other items required to provide for the safe movement of traffic. Traffic control will be paid in equal monthly installments based on the time remaining to achieve substantial completion.

T. Item No.: B21 – GENERAL CONSTRUCTION CONTINGENCY

The construction contingency item shall be the amount shown on the bid proposal and shall be used by the City for changes or unforeseen items during the construction process. This item may be used in full, partial, or not at all during construction

2.03 ADDITIVE ALTERNATE BID ITEM C

A. Item No.: C1 – Elevated Tank 2nd Floor

The additive alternate item of "Elevated Tank 2nd Floor" includes the design and construction of a corrugated metal deck covered with a smooth, unpainted concrete finish, with a 4 to 6 foot wide opening for a 1-ton jib crane mounted to the wall. The opening shall have a removable hand rail or safety chain with an opening for the ladder, but shall not have stairwells. Floor shall be designed for a 250 psf heavy loading. This additive alternate shall include lighting and general receptacles for the second floor.

END OF SECTION

01 31 00 PROJECT MANAGEMENT AND COORDINATION

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish equipment, manpower, products, and other items necessary to complete the Project with an acceptable standard of quality and within the Contract Time. Construct Project in accordance with current safety practices.
- B. Manage Site to allow access to Site and control construction operations.
- C. Provide labor, materials, equipment and incidentals necessary to construct temporary facilities to provide and maintain control over environmental conditions at the Site. Remove temporary facilities when no longer needed.
- D. Construct temporary impounding works, channels, diversions, furnishing and operation of pumps, installing piping and fittings, and other construction for control of conditions at the Site. Remove temporary controls at the end of the Project.
- E. Provide temporary controls for pollutions, management of water and management of excess earth as required in Section 01 57 00 "Temporary Controls."
- F. Cost for Project Management and Coordination as described in this Section are to be included in the Contract Price.

1.02 QUALITY ASSURANCE

- A. Employ competent workmen, skilled in the occupation for which they are employed. Provide Work meeting quality requirements of the Contract Documents as determined by the Engineer and Owner.
- B. Remove defective Work from the Site immediately unless provisions have been made and approved by the Engineer to allow repair of the product at the Site. Clearly mark the Work as "defective" until it is removed or allowable repairs have been completed.

1.03 SUBMITTALS

- A. Provide submittals in accordance with Section 01 33 00 "Submittal Procedures."
 - 1. Provide copies of Supplier's printed storage instructions prior to furnishing materials or products and installation instructions prior to beginning the installation. Maintain one copy of these documents at the Site until the Project is complete. Incorporate this information into submittals.
 - 2. Incorporate field notes, sketches, recordings, and computations made by the Contractor in Record Drawings.

1.04 STANDARDS

- A. Perform Work to comply with local, state and federal ordinances and regulations.
- B. Provide materials and equipment that has National Science Foundation 60/61 approval for use in potable water supply systems. Advise the Engineer of any material requirements in

these Contract Documents that conflict with National Science Foundation 60/61 requirements.

1.05 PERMITS

- A. Obtain a building permit for the Project from the local authorities having jurisdiction. Building permit fees will be waived by the Owner.
- B. Retain copies of permits and licenses at the Site and observe and comply with all regulations and conditions of the permit or license, including additional insurance requirements.
- C. Obtain and pay for all other necessary permits including any and all necessary highway, street and road permits for transporting pipe and/or heavy equipment necessary for construction of the Project.
- D. Obtain and pay for other permits necessary to conduct any part of the Work.
- E. Arrange for inspections and certification by agencies having jurisdiction over the Work.
- F. Make arrangements with private utility companies and pay for fees associated with obtaining services, or for inspection fees.

1.06 SAFETY REQUIREMENTS

- A. Assume sole responsibility for safety at the Site. Protect the safety and welfare of persons at the Site.
- B. Provide safe access to move through the Site. Provide and maintain barricades, guard rails, covered walkways, and other protective devices to warn and protect from hazards at the Site.
- C. Comply with latest provisions of the Occupational Health and Safety Administration and other regulatory agencies in performing Work.
- D. Cooperate with accident investigations related to the Site. Provide two copies of all reports, including insurance company reports, if requested by the Owner, prepared concerning accidents, injury, or death on the Site to the Engineer as Record Data per Section 01 33 00 "Submittal Procedures."

1.07 COORDINATION

- A. Coordinate the Work of various trades having interdependent responsibilities for installing, connecting to, and placing equipment in service.
- B. Coordinate requests for substitutions to provide compatibility of space, operating elements, effect on the Work of other trades, and on the Work scheduled for early completion.
- C. Coordinate the use of Project space and the sequence of installation of equipment, elevators, walks, mechanical, electrical, plumbing, or other Work that is indicated diagrammatically on the Drawings.
 - 1. Follow routings shown for tubes, pipes, ducts, conduits, and other items as closely as practical, with due allowance for available physical space.
 - 2. Utilize space efficiently to maximize accessibility for Owner's maintenance and repairs.

3. Schematics are diagrammatic in nature. Adjust routing of piping, ductwork, utilities, and location of equipment as needed to resolve spatial conflicts between the various trades. Document the actual routing on the Record Drawings.
- D. Conceal ducts, pipes, wiring, and other non-finish items in finished areas, except as otherwise shown. Coordinate locations of concealed items with finish elements.
- E. Coordinate with architectural reflected ceiling plans the exact location and dimensioning of items which occur within hung ceilings. Request clarification from the Engineer prior to proceeding with fabrication or installation if a conflict exists.
- F. Schedule construction activities in sequence required to obtain best results where installation of one part of the Work is dependent on installation of other components, either before or after its own installation.
- G. Make adequate provisions to accommodate items scheduled for later installation, including:
 1. Accepted alternates.
 2. Installation of products purchased with allowances.
 3. Work by others.
 4. Owner-supplied, Contractor-installed items.
- H. Sequence, coordinate, and integrate the various elements of mechanical, electrical, and other systems, materials, and equipment. Comply with the following requirements:
 1. Coordinate mechanical and electrical systems, equipment, and materials installation with other building components.
 2. Verify all dimensions by field measurements.
 3. Arrange for chases, slots, and openings in other building components during progress of construction.
 4. Coordinate the installation of required supporting devices and sleeves to be set in cast-in-place concrete and other structural components, as they are constructed.
 5. Install systems, materials, and equipment as permitted by codes to provide the maximum headroom possible where mounting heights are not detailed or dimensioned.
 6. Coordinate the connection of systems with exterior underground and overhead utilities and services. Comply with the requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
 7. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to the greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Adjust routing of piping, ductwork, utilities, and location of equipment as needed to resolve spatial conflicts between the various trades. Document changes in the indicated routings on the Record Drawings.
 8. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components.

9. Install systems, materials, and equipment to facilitate servicing, maintenance, and repair or replacement of components. As much as practical, connect for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to accessible locations.
10. Install access panel or doors where units are concealed behind finished surfaces.
11. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.

1.08 CONTRACTOR'S USE OF SITE

- A. Limit the use of Site for Work and storage to those areas designated on the Drawings or approved by the Engineer. Coordinate the use of the premises with the Engineer.
- B. Repair or correct any damage to existing facilities, including contamination, caused by the Contractor's personnel, visitors, materials, or equipment.
- C. Do not permit alcoholic beverages or illegal substances on the Site. Do not allow persons under the influence of alcoholic beverages or illegal substances to enter or remain on the Site at any time. Persons on Site under the influence of alcoholic beverages or illegal substances will be permanently prohibited from returning to the Site. Criminal or civil penalties may also apply.
- D. Park construction equipment in designated areas only and provide spill control measures as discussed in Section 01 57 00 "Temporary Controls."
- E. Park employees' vehicles in designated areas only.
- F. Obtain written permission of the Owner before entering privately-owned land outside of the Owner's property, rights-of-way, or easements.
- G. Do not allow the use of audio devices, obnoxious, vulgar or abusive language, or sexual harassment in any form. These actions will cause immediate and permanent removal of the offender from the premises. Criminal or civil penalties may apply.
- H. Require Workers to wear clothing that is inoffensive and meets safety requirements. Do not allow sleeveless shirts, shorts, exceedingly torn, ripped or soiled clothing to be worn on the Project.
- I. Do not allow firearms or weapons of any sort to be brought on to the Site under any conditions. No exception is to be made for persons with concealed handgun permits. Remove any firearms or weapons and the person possessing these firearms or weapons permanently and immediately from the Site.

1.09 ACCESS TO THE SITE

- A. Maintain access to the facilities at all times. Do not obstruct roads, pedestrian walks, or access to the various buildings, structures, stairways, or entrances. Provide safe temporary walks or other structures to allow access for normal operations during construction.
- B. Provide adequate and safe access for inspections. Leave ladders, bridges, scaffolding and protective equipment in place until inspections have been completed. Construct additional safe access if required for inspections.

- C. Provide security at the Site as necessary to protect against vandalism and loss by theft.
- D. Use state, county, or city roadways for construction traffic only with written approval of the appropriate representatives of each entity. State, county, or city roadways may not all be approved for construction traffic. Obtain written approval to use state, county, city or private roads to deliver pipe and/or heavy equipment to the Site. Copies of the written approvals must be furnished to the Owner as Record Data before Work begins. No additional compensation will be paid because the Contractor is unable to gain access to the easement from public roadways.

1.10 PROPERTY PROVISIONS

- A. Make adequate provisions to maintain the flow of storm sewers, sanitary sewers, drains and water courses encountered during the construction. Provide temporary service around the construction or otherwise construct the structure in a manner that the flow is not curtailed. Restore structures which may have been disturbed during construction to their original position as soon as construction in the area is completed.
- B. Protect trees, fences, signs, poles, guy wires, and all other property unless their removal is authorized. Restore any property damaged to equal or better condition per Paragraph 1.11.

1.11 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Examine the Site and review the available information concerning the Site. Locate utilities, streets, driveways, fences, drainage structures, sidewalks, curbs, and gutters. Verify the elevations of the structures adjacent to excavations. Report these to the Engineer before beginning construction.
- B. Determine if existing structures, poles, piping, or other utilities at excavations will require relocation or replacement. Prepare a Plan of Action and submit to the City. Coordinate Work with Contractor, local utility company and others. Include cost of demolition and replacement, restoration or relocation of these structures in the Cost of Work.
- C. Protect buildings, utilities, street surfaces, driveways, sidewalks, curb and gutter, fences, wells, drainage structures, piping, valves, manholes, electrical conduits, and other systems or structures unless they are shown to be replaced or relocated on the Drawings. Restore damage to items to be protected to the satisfaction of the Engineer, utility owner and Owner without additional compensation from the Owner.
- D. Carefully support and protect all structures and/or utilities so that there will be no failure or settlement where excavation or demolition endangers adjacent structures and utilities. Do not take existing utilities out of service unless show in the Contract Documents or approved by the Engineer. Notify and cooperate with the utility owner if it is necessary to move services, poles, guy wires, pipelines or other obstructions. Include the cost of relocation and permits required to move existing utilities in the Cost of Work.
- E. Protect existing trees and landscaping at the Site.
 - 1. Visit Site with Engineer to identify trees that may be removed during construction.
 - 2. Mark trees to be removed with paint.

3. Protect trees to remain from damage by wrapping trunks with 2 x 4 timbers around the perimeter, securely wired in place, where machinery must operate around existing trees. Protect branches and limbs from damage by equipment.
- F. Protect buildings from damage when handling material or equipment. Protect finished surfaces, including floors, doors, and jambs. Remove doors and install temporary wood protective coverings over jambs.

1.12 DISRUPTION TO SERVICES / CONTINUED OPERATIONS

- A. Existing facilities are to continue in service as usual during the construction unless noted otherwise. Owner or utilities must be able to operate and maintain the facilities. Disruptions to existing utilities, piping, process piping, or electrical services shall be kept to a minimum.
 1. Do not restrict access to critical valves, operators, or electrical panels.
 2. Do not store material or products inside structures.
 3. Limit operations to the minimum amount of space needed to complete the specified Work.
 4. Maintain storm sewers and sanitary sewers in service at all times. Provide temporary service around the construction or otherwise construct the structure in a manner that the flow is not restricted.
- B. Provide a Plan of Action to the City of Lancaster if facilities must be taken out of operation.

1.13 FIELD MEASUREMENTS

- A. Perform complete field measurements for products required to fit existing conditions prior to purchasing products or beginning construction.
- B. Verify property lines, control lines, grades, and levels indicated on the Drawings.
- C. Verify pipe class, equipment capacities, existing electrical systems and power sources for existing conditions.
- D. Check Shop Drawings and indicate the actual dimensions available where products are to be installed.
- E. Include field measurements in Record Drawings as required in Section 01 31 13 "Project Coordination."

1.14 REFERENCE DATA AND CONTROL POINTS

- A. The Engineer will provide the following control points:
 1. Base line or grid reference points for horizontal control.
 2. Benchmarks for vertical control.
 3. Designated control points may be on an existing structure or monument.
- B. Locate and protect control points prior to starting the Work and preserve permanent reference points during construction. Do not change or relocate points without prior

approval of the Engineer. Notify Engineer when the reference point is lost, destroyed, or requires relocation. Replace Project control points on the basis of the original survey.

- C. Provide complete engineering layout of the Work needed for construction.
 - 1. Provide competent personnel. Provide equipment including accurate surveying instruments, stakes, platforms, tools, and materials.
 - 2. Provide surveying with accuracy meeting the requirements established for Category 5 Construction Surveying as established in the Manual of Practice of Land Surveying in Texas published by the Texas Society of Professional Surveyors, latest revision.
 - 3. Record data and measurements per standards.

1.15 DELIVERY AND STORAGE

- A. Deliver products and materials to the Site in time to prevent delays in construction.
- B. Deliver packaged products to Site in original undamaged containers with identifying labels attached. Open cartons as necessary to check for damage and to verify invoices. Reseal cartons and store properly until used. Leave products in packages or other containers until installed.
- C. Deliver products that are too large to fit through openings to the Site in advance of the time enclosing walls and roofs are erected. Set in place, raised above floor on cribs.
- D. Assume full responsibility for the protection and safekeeping of products stored at the Site.
- E. Store products at locations acceptable to the Engineer and to allow Owner access to maintain and operate existing facilities.
- F. Store products in accordance with the Supplier's storage instructions immediately upon delivery. Leave seals and labels intact. Arrange storage to allow access for maintenance of stored items and for inspection. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
- G. Obtain and pay for the use of any additional storage areas as needed for construction. Store products subject to damage by elements in substantial weather-tight enclosures or storage sheds. Provide and maintain storage sheds as required for the protection of products. Provide temperature, humidity control and ventilation within the ranges stated in the Supplier's instructions. Remove storage facilities at the completion of the Project.
- H. Protect the pipe interior. Keep all foreign materials such as dirt, debris, animals, or other objects out of the pipe during the Work. Cap or plug ends of installed pipe in an approved manner when pipe is not being installed. Clean or wash out pipe sections that become contaminated before continuing with installation. Take precautions to prevent the pipe from floating or moving out of the proper position during or after laying operations. Immediately correct any pipe that moves from its correct position.
- I. Provide adequate exterior storage for products that may be stored out-of-doors.
 - 1. Provide substantial platforms, blocking, or skids to support materials and products above ground; slope to provide drainage. Protect products from soiling or staining.

2. Cover products subject to dislocation or deterioration from exposure to the elements, with impervious sheet materials. Provide ventilation to prevent condensation below covering.
 3. Store loose, granular materials on clean, solid surfaces, or on rigid sheet materials, to prevent mixing with foreign matter.
 4. Provide surface drainage to prevent erosion and ponding of water.
 5. Prevent mixing of refuse or chemically injurious materials or liquids with stored materials.
 6. Pipes and conduits stored outdoors are to have open ends sealed to prevent the entrance of dirt, moisture, and other injurious materials. Protect PVC pipe from ultraviolet light exposure.
 7. Store light weight products to prevent wind damage.
- J. Protect and maintain mechanical and electrical equipment in storage.
1. Provide Supplier's service instructions on the exterior of the package.
 2. Service equipment on a regular basis as recommended by the Supplier. Maintain a log of maintenance services. Submit the log as Record Data at the completion of the Project.
 3. Provide power to and energize space heaters for all equipment for which these devices are provided.
 4. Provide temporary enclosures for all electrical equipment, including electrical systems on mechanical devices. Provide and maintain heat in the enclosures until equipment is energized.
- K. Maintain storage facilities. Inspect stored products on a weekly basis and after periods of severe weather to verify that:
1. Storage facilities continue to meet specified requirements.
 2. Supplier's required environmental conditions are continually maintained.
 3. Surfaces of products exposed to the elements are not adversely affected.
- L. Replace any stored item damaged by inadequate protection or environmental controls.
- M. Payment may be withheld for any products not properly stored.

1.16 CLEANING DURING CONSTRUCTION

- A. Provide positive methods to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from disbursing into the atmosphere. Control dust and dirt from demolition, cutting, and patching operations.
- B. Clean the Project as Work progresses and dispose of waste materials, keeping the Site free from accumulations of waste or rubbish. Provide containers on Site for waste collection. Do not allow waste materials or debris to blow around or off of the Site. Control dust from waste materials. Transport waste materials with as few handlings as possible.

- C. Comply with codes, ordinances, regulations, and anti-pollution laws. Do not burn or bury waste materials. Remove waste materials, rubbish and debris from the Site and legally dispose of these at public or private dumping areas.

1.17 MAINTENANCE OF ROADS, DRIVEWAYS, AND ACCESS

- A. Maintain roads and streets in a manner that is suitable for safe operations of public vehicle during all phases of construction unless the Owner approves a street closing. Submit a written request for Owner's approval of a street closing. The request shall state:
 - 1. The reason for closing the street.
 - 2. How long the street will remain closed.
 - 3. Procedures to be taken to maintain the flow of traffic.
 - 4. Do not close public roads overnight.
- B. Construct temporary detours, including by-pass roads around construction, with adequately clear width to maintain the free flow of traffic at all times. Maintain barricades, signs, and safety features around the detour and excavations.
- C. Maintain barricades, signs, and safety features around the Work in accordance with all provisions of the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- D. Assume responsibility for any damage resulting from construction along roads or drives.

1.18 BLASTING

- A. Blasting for excavations is not allowed.

1.19 ARCHAEOLOGICAL REQUIREMENTS

- A. Cease operations immediately and contact the Owner for instructions if an historical or archaeological find is made during construction.
- B. Conduct all construction activities to avoid adverse impact on the Sites where significant historical or archaeological Sites have been identified at the Site.
 - 1. Obtain details for Working in these areas.
 - 2. Maintain confidentiality regarding the Site.
 - 3. Adhere to the requirements of the Texas Historical Commission.
 - 4. Notify the Owner, Texas Water Development Board and the Texas Historical Commission.
- C. Do not disturb Archaeological Sites.
 - 1. Obtain the services of a qualified archaeological specialist to instruct construction personnel on how to identify and protect archaeological finds on an emergency basis.
 - 2. Coordinate activities to permit archaeological work to take place within the area.
 - a. Attempt to archaeologically clear areas needed for construction as soon as possible.
 - b. Provide a determination of priority for such areas.

- D. Assume responsibility for any unauthorized destruction that might result to such Sites by construction personnel, and pay all penalties assessed by the state or federal agencies for non-compliance with these requirements.
- E. Contract Time will be modified to compensate for delays caused by such archaeological finds. No additional compensation shall be paid for delays.

1.20 CUTTING AND PATCHING

- A. Perform cutting, fitting, and patching required to complete the Work or to:
 - 1. Uncover Work to provide for installation of new Work or the correction of defective Work.
 - 2. Provide routine penetrations of non-structural surfaces for installation of mechanical, electrical, and plumbing work.
 - 3. Uncover Work that has been covered prior to observation by the Engineer.
- B. Submit written notification to the Engineer in advance of performing any cutting which affects:
 - 1. Work of any other Contractor or the Owner.
 - 2. Structural integrity of any structure or system of the Project.
 - 3. Integrity or effectiveness of weather exposed or moisture resistant structure or systems.
 - 4. Efficiency, operational life, maintenance, or safety of any structure or system.
 - 5. Appearance of any structure or surfaces exposed occasionally or constantly to view.
- C. The notification shall include:
 - 1. Identification of the Project.
 - 2. Location and description of affected Work.
 - 3. Reason for cutting, alteration, or excavation.
 - 4. Effect on the Work of any separate contractor or Owner.
 - 5. Effect on the structural or weatherproof integrity of the Project.
 - 6. Description of proposed Work, including:
 - a. Scope of cutting, patching, or alteration.
 - b. Trades that will perform the Work.
 - c. Products proposed for use.
 - d. Extent of refinishing to be performed.
 - e. Cost proposal, when applicable.
 - 7. Alternatives to cutting and patching.
 - 8. Written authorization from any separate Contractor whose Work would be affected.
 - 9. Date and time Work will be uncovered or altered.

- D. Examine the existing conditions, including structures subject to damage or to movement during cutting or patching.
 - 1. Inspect conditions affecting installation of products or performance of the Work after uncovering the Work.
 - 2. Provide a written report of unacceptable or questionable conditions to the Engineer. The Contractor shall not proceed with the Work until Engineer has provided further instructions. Beginning the Work will constitute acceptance of existing conditions by the Contractor.
- E. Protect the structure and other parts of the Work and provide adequate support to maintain the structural integrity of the affected portions of the Work. Provide devices and methods to protect adjacent Work and other portions of the Project from damage. Provide protection from the weather for portions of the Project that may be exposed by cutting and patching Work.
- F. Execute cutting and demolition by methods which will prevent damage to other Work, and will provide proper surfaces to receive installation of repairs.
- G. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- H. Cut, remove, and legally dispose of selected mechanical equipment, components, and materials as indicated, including but not limited to, the removal of mechanical piping, heating units, plumbing fixtures and trim, and other mechanical items made obsolete by the modified Work.
- I. Restore Work which has been cut or removed. Install new products to provide completed Work per the Contract Documents.
- J. Fit Work air-tight to pipes, sleeves, ducts, conduit, and other penetrations through the surfaces. Where fire rated separations are penetrated, fill the space around the pipe or insert with materials with physical characteristics equivalent to fire resistance requirements of penetrated surface.
- K. Patch finished surfaces and building components using new products specified for the original installation.
- L. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
 - 1. For continuous surfaces, refinish to the nearest intersection.
 - 2. For an assembly, refinish the entire unit.

1.21 PRELIMINARY OCCUPANCY

- A. Owner may deliver, install and connect equipment, furnishings, or other apparatus in buildings or other structures. These actions do not indicate acceptance of any part of the building or structure and does not affect the start of warranties or correction periods.
- B. Protect the Owner's property after installation is complete.
- C. Owner or Engineer may use any product for testing or determine that the product meets the requirements of the Contract Documents. This use does not constitute acceptance by either

the Owner or Engineer. These actions do not indicate acceptance of any part of the product and does not affect the start of warranties or correction periods.

1.22 INITIAL MAINTENANCE AND OPERATION

- A. Maintain equipment until the Project is accepted by the Owner. Ensure that mechanical equipment is properly maintained as recommended by the Supplier.
 - B. Do not operate air handling equipment unless filters are in place and are clean. Change filters weekly during construction.
 - C. Provide maintenance and startup services prior to acceptance of equipment, per Section 01 75 00 "Starting and Adjusting."
-
- D. Remove and clean screens and strainers in piping systems.
 - E. Clean insects from intake louver screens.
 - F. Provide documentation of maintenance and operations when Owner takes over operation and control of the Project.

1.23 ENDANGERED SPECIES RESOURCES

- A. No activity is authorized that is likely to jeopardize the continued existence of a threatened or endangered species as listed or proposed for listing under the Federal Endangered Species Act (ESA), and/or the State of Texas Parks and Wildlife Code on Endangered Species, or to destroy or adversely modify the habitat of such species.
- B. If a threatened or endangered species is encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the Owner, who will immediately implement actions in accordance with the ESA and applicable state statutes. These actions shall include reporting the encounter to the TWDB, the U. S. Fish and Wildlife Service, and the Texas Parks and Wildlife Department, obtaining any necessary approvals or permits to enable the Work to continue, or implement other mitigative actions. The Contractor shall not resume construction in the area of the encounter until authorized to do so by the Owner.

2.00 PRODUCTS

2.01 MATERIALS

- A. Provide materials in accordance with the requirements of the individual Sections.

3.00 EXECUTION

3.01 PERFORMANCE OF WORK

- A. Perform the Work per the Supplier's published instructions. Do not omit any preparatory step or installation procedure unless specifically exempted or modified by Field Order.

END OF SECTION

01 31 13 PROJECT COORDINATION

1.00 GENERAL

1.01 WORK INCLUDED

- A. Administer Contract requirements to construct the Project. Provide documentation per the requirements of this Section. Provide information as requested by the Engineer or Owner.

1.02 SUBMITTALS

- A. Provide submittals in accordance with Section 01 33 00 "Submittal Procedures."

1.03 COMMUNICATION DURING THE PROJECT

- A. The Engineer is to be the first point of contact for all parties on matters concerning this Project.
- B. The Engineer will coordinate correspondence concerning:
 - 1. Submittals, including Applications for Payment.
 - 2. Clarification and interpretation of the Contract Documents.
 - 3. Contract modifications.
 - 4. Observation of Work and testing.
 - 5. Claims.
- C. The Engineer will normally communicate only with the Contractor. Any required communication with Subcontractors or Suppliers will only be with the direct involvement of the Contractor.
- D. Direct written communications to the Engineer at the address indicated at the Pre-construction Conference. Include the following with communications as a minimum:
 - 1. Name of the Owner.
 - 2. Project name.
 - 3. Contract title.
 - 4. Project number.
 - 5. Date.
 - 6. A reference statement.
- E. Submit communications on the forms referenced in this Section or in Section 01 33 00 "Submittal Procedures."

1.04 PROJECT MEETINGS

- A. Pre-construction Conference:
 - 1. Attend a pre-construction meeting.
 - 2. The location of the conference will be determined by the Engineer.

3. The time of the meeting will be determined by the Engineer but will be after the Notice of Award is issued and not later than 15 days after the Notice to Proceed is issued.
 4. The Owner, Engineer, representatives of utility companies, the Contractor's project manager and superintendent, and representatives from major Subcontractors and Suppliers.
 5. Provide and be prepared to discuss:
 - a. Preliminary construction schedule per Section 01 32 16 "Construction Progress Schedule."
 - b. Preliminary submittal schedule per Section 01 33 00 "Submittal Procedures."
 - c. Schedule of values and anticipated schedule of payments per Section 01 29 00 "Payment Procedures."
 - d. List of Subcontractors and Suppliers.
 - e. Contractor's organizational chart as it relates to this Project.
 - f. Letter indicating the agents of authority for the Contractor and the limit of that authority with respect to the execution of legal documents, contract modifications and payment requests.
 6. Letter indicating the agents of authority for the Contractor and the limit of that authority with respect to the execution of legal documents, contract modifications and payment requests.
- B. Progress Meetings:
1. Attend meetings with the Engineer and Owner.
 - a. Meet on a monthly basis or as requested by the Engineer to discuss the Project.
 - b. Meet at the Site or other location as designated by the Engineer.
 - c. Contractor's superintendent and other key personnel are to attend the meeting. Other individuals may be requested to attend to discuss specific matters.
 - d. Notify the Engineer of any specific items to be discussed a minimum of 1 week prior to the meeting.
 2. Provide information as requested by the Engineer or Owner concerning this Project. Prepare to discuss:
 - a. Status of overall Project schedule.
 - b. Contractor's detailed schedule for the next month.
 - c. Anticipated delivery dates for equipment.
 - d. Coordination with the Owner.
 - e. Status of submittals.
 - f. Information or clarification of the Contract Documents.
 - g. Claims and proposed modifications to the Contract.
 - h. Field observations, problems, or conflicts.

- i. Maintenance of quality standards.
- 3. Engineer will prepare minutes of meetings. Review the minutes of the meeting and notify the Engineer of any discrepancies within ten days of the date of the meeting memorandum. The minutes will not be corrected after the ten days have expired. Corrections will be reflected in the minutes of the following meeting or as an attachment to the minutes.
- C. Pre-submittal and Pre-installation Meetings:
 - 1. Conduct pre-submittal and pre-installation meetings as required in the individual technical specifications or as determined necessary by the Engineer (for example, instrumentation, roofing, concrete mix design, etc.).
 - 2. Set the time and location of the meetings when ready to proceed with the associated Work. Submit a Notification by Contractor in accordance with Paragraph 1.07 for the meeting 2 weeks before the meeting. Engineer and Owner must approve of the proposed time and location.
 - 3. Attend the meeting and require the participation of appropriate Subcontractors and Suppliers in the meeting.
 - 4. Prepare minutes of the meeting and submit to the Engineer and Owner for review. Owner and Engineer will review the minutes of the meeting and notify the Contractor of any discrepancies within ten days of the date of the meeting memorandum. The minutes will not be corrected after the ten days have expired. Corrections will be reflected in a revised set of meeting minutes.

1.05 REQUESTS FOR INFORMATION

- A. Submit Request for Information (RFI) to the Engineer to obtain additional information or clarification of the Contract Documents.
 - 1. Submit a separate RFI for each item on the form provided by the Engineer.
 - 2. Attach adequate information to permit a written response without further clarification. Engineer will return requests that do not have adequate information to the Contractor for additional information. Contractor is responsible for all delays resulting from multiple submittals due to inadequate information.
 - 3. A response will be made when adequate information is provided. Response will be made on the RFI form or in attached information.
- B. Response to an RFI is given to provide additional information, interpretation, or clarification of the requirements of the Contract Documents, and does not modify the Contract Documents.
- C. Engineer will initiate a Contract Modification Request per Paragraph 1.08 if the RFI indicates that a Contract modification is required.
- D. Use the Project Issues Log to document decisions made at meetings and actions to be taken in Accordance with Paragraph 1.06.

1.06 PROJECT ISSUES LOG

- A. Engineer will maintain a Project issues log to document key decisions made at meeting and track action on these issues:
 - 1. Review the log prior to each regular meeting.
 - 2. Report actions taken subsequent to the previous progress meeting on items in the log assigned to the Contractor or through the Contractor to a Subcontractor or Supplier to the Engineer. Report on status of progress 1 week prior to each progress meeting established in Paragraph 1.04 to allow Engineer to update the log prior to the Progress meetings.
 - 3. Be prepared to discuss the status at each meeting.
 - B. Decisions or action items in the log that require a change in the Contract Documents will have the preparation of a Contract modification as an action items if appropriate. The Contract Documents can only be changed by a Change Order or Field Order.
-

1.07 NOTIFICATION BY CONTRACTOR

- A. Notify the Engineer of:
 - 1. Need for testing.
 - 2. Intent to work outside regular working hours.
 - 3. Request to shut down facilities or utilities.
 - 4. Proposed utility connections.
 - 5. Required observation by Engineer or inspection agencies prior to covering Work.
 - 6. Training.
- B. Provide notification a minimum of 2 weeks in advance in order to allow Owner and Engineer time to respond appropriately to the notification.
- C. Use "Notification by Contractor" form provided by the Engineer.

1.08 REQUESTS FOR MODIFICATIONS

- A. Submit a request to the Engineer for any change in the Contract Documents.
 - 1. Use the "Contract Modification Request" (CMR) form provided by the Engineer.
 - 2. Assign a number to the Contract Modification Request when issued.
 - 3. Include with the Contract Modification Request:
 - a. A complete description of the proposed modification.
 - b. The reason the modification is requested.
 - c. A detailed breakdown of the cost of the change (necessary only if the modification requires a change in Contract Price). The itemized breakdown is to include:
 - 1). List of materials and equipment to be installed.
 - 2). Man hours for labor by classification.
 - 3). Equipment used in construction.

- 4). Consumable supplies, fuels, and materials.
 - 5). Royalties and patent fees.
 - 6). Bonds and insurance.
 - 7). Overhead and profit.
 - 8). Field office costs.
 - 9). Home office cost.
 - 10). Other items of cost.
- d. Provide the level of detail outline in the paragraph above for each Subcontractor or Supplier actually performing the Work if Work is to be provided by a Subcontractor or Supplier. Indicate appropriate Contractor mark-ups for Work provided through Subcontractors and Suppliers. Provide the level of detail outline in the paragraph above for self-performed Work.
 - e. Provide a revised schedule indicating the effect on the critical path for the Project and a statement of the number of days the Project may be delayed by the modification.
4. Submit a Contract Modification Request to the Engineer to request a field change.
 5. A Contract Modification Request is required for all substitutions or deviations from the Contract Documents.
 6. Engineer will evaluate the request for a Contract modification.
- B. Owner will initiate changes through the Engineer.
1. Engineer will prepare a description of proposed modifications to the Contract Documents.
 2. Engineer will use the Contract Modification Request form. Engineer will assign a number to the Contract Modification Request when issued.
 3. Return the Contract Modification Request with a proposal to incorporate the requested change. Include a breakdown of costs into materials and labor in detail outline above to allow evaluation by the Engineer.
- C. Engineer will issue a Field Order or a Change Order per the General Conditions if a contract modification is appropriate.
1. Modifications to the Contract can only be made by a Field Order or a Change Order.
 2. Changes in the Project will be documented by a Field Order or by a Change Order.
 3. Field Orders may be issued by the Engineer for Contract modifications that do not change the Contract Price or Contract Time.
 4. Any modifications that require a change in Contract Price or Contract Time can only be approved by Change Order.
 - a. Proposals issued by the Contractor in response to a Contract Modification Request will be evaluated by the Engineer.
 - b. If a Change Order is recommended, the Engineer will prepare the Change Order.

- c. The Change Order will be sent to the Contractor for execution with a copy to the Owner recommending approval.
- d. Change Orders can only be approved by the Owner.
 - 1). Work performed on the proposed Contract modifications prior to the approval of the Change Order will be performed at the Contractor's risk.
 - 2). No payment will be made for Work on Change Orders until approved by the Owner.
- D. The Contractor may be informed that the Contract Modification Request is not approved and construction is to proceed in accordance with the Contract Documents.

1.09 RECORD DRAWINGS

- A. Maintain at the Site one complete record copy of:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Contract modifications.
 - 5. Approved Shop Drawings and Record Data.
 - 6. One set of construction photographs.
 - 7. Test records.
 - 8. Clarifications and other information provided in Request for Information responses.
 - 9. Reference standards.
- B. Store documents and Samples in the Contractor's field office.
 - 1. Documents are to remain separate from documents used for construction. Do not use these documents for construction.
 - 2. Provide files and racks for the storage of documents.
 - 3. Provide a secure storage space for the storage of Samples.
 - 4. Maintain documents in clean, dry, legible conditions, and in good order.
 - 5. Make documents and Samples available at all times for inspection by the Engineer and Owner.
- C. Marking Drawings:
 - 1. Label each document as "Project Record" in large printed letters.
 - 2. Record information as construction is being performed.
 - a. Do not conceal any Work until the required information is recorded.
 - b. Mark Drawings to record actual construction, including the following:
 - 1). Depths of various elements of the foundation in relation to finished first floor datum or the top of walls.

- 2). Horizontal and vertical locations of underground utilities and appurtenances constructed and existing utilities encountered during construction.
- 3). Location of internal utilities and appurtenances concealed in the construction. Refer measurements to permanent structure on the surface. Include the following equipment:
 - a). Piping.
 - b). Ductwork.
 - c). Equipment and control devices requiring periodic maintenance or repair.
 - d). Valves, unions, traps, and tanks.
 - e). Services entrance.
 - f). Feeders.
 - g). Outlets.
- 4). Changes of dimension and detail.
- 5). Changes made by Field Order and Change Order.
- 6). Details not on the original Drawings. Include field verified dimensions and clarifications, interpretations, and additional information issued in response to RFIs.
- c. Mark Specifications and Addenda to identify products provided.
 - 1). Record product name, trade name, catalog number, and each Supplier (with address and phone number) of each product and item of equipment actually installed.
 - 2). Record changes made by Field Order and Change Order.
- d. Mark additional Work or information in erasable pencil.
 - 1). Use red for new or revised indication.
 - 2). Use purple for Work deleted or not installed (lines to be removed).
 - 3). Highlight items constructed per the Contract Documents in yellow.
- e. Submit record documents to Engineer for review and acceptance 30 days prior to final completion of the Project.
 - 1). Provide one set of marked up Drawings.
 - 2). Provide six sets of Specifications.
- D. Applications for Payment will not be recommended for payment if record documents are found to be incomplete or not in order. Final payment will not be recommended without complete record documents.

END OF SECTION

01 31 13.13 FORMS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Use the forms shown in this Section for contract administration, submittals and documentation of test results. A disk with these forms in Microsoft Word or Excel will be provided to the Contractor before or at the pre-construction conference. Forms included are listed below:
- B. Contract Administration Forms:
 - 1. Request for Information.
 - 2. Notification by Contractor.
 - 3. Contractor's Modification Request.
- C. Application for Payment Forms:
 - 1. Consent of Surety Company to Payment Procedures.
 - 2. Application for Payment forms.
- D. Submittal Forms:
 - 1. Submittal Transmittal.
 - 2. Shop Drawing Deviation Request.
 - 3. Concrete Mix Design:
 - a. Attachment "A" – Basis for Mix Design – Field Strength Test Record.
 - b. Attachment "B" – Basis for Mix Design – Trial Mixture.
- E. Testing Forms:
 - 1. Pressure Pipe Test Report.
 - 2. Protective Coating Test Report.
- F. Equipment Installation and Documentation Forms:
 - 1. Equipment Installation Report.
 - 2. O&M Manual Review Report.
- G. Project Closeout Forms:
 - 1. Consent of Surety Company to Final Payment.
 - 2. Consent of Surety Company to Reduction of or Partial Release of Retainage.
 - 3. Contractor's Affidavit of Payment of Debts and Claims.
 - 4. Contractor's Affidavit of Release of Liens.

END OF SECTION



REQUEST FOR INFORMATION
(4.14 /)

PROJECT: _____ **PROJECT NUMBER:** _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

REFERENCE DATA:

Specification Section No. _____ Page No. _____ Paragraph No. _____
Drawing No. _____ Detail description: _____

CONTRACTOR REQUESTS: ☐ Information ☐ Interpretation ☐ Clarification
for the items described below or in the attached material referenced below:

CONTRACTOR'S PROPOSED SOLUTION:

REQUESTED BY: _____ **DATE:** _____

ENGINEER'S RESPONSE: ☐ Information ☐ Interpretation ☐ Clarification
for the items described above or in the attached material referenced:

RESPONSE BY: _____ **DATE:** _____



NOTIFICATION BY CONTRACTOR
(4.15 /)

PROJECT: _____ **PROJECT NUMBER:** _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

DESCRIPTION: _____ **NO.:** _____

NOTIFICATION IS GIVEN OF THE FOLLOWING:

- | | |
|---|--|
| <input type="checkbox"/> Concrete Placement Notice | <input type="checkbox"/> Electrical Observation Request |
| <input type="checkbox"/> Concrete Testing Request | <input type="checkbox"/> Mechanical Observation Request |
| <input type="checkbox"/> Soils Testing Request | <input type="checkbox"/> Facility Shutdown Request |
| <input type="checkbox"/> Mechanical Testing Request | <input type="checkbox"/> Request to Work Outside Regular Hours |
| <input type="checkbox"/> Structural Observation Request | <input type="checkbox"/> Other (See Below) |

Date When Work is to be Accomplished:

Description:

Requested by: _____ Date: _____

RESPONSE TO NOTIFICATION:

Response by: _____ Date: _____



CONTRACTOR'S MODIFICATION REQUEST
(4.42 /)

PROJECT: _____ PROJECT NUMBER: _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

DESCRIPTION: _____ NO. _____

NOTIFICATION BY CONTRACTOR

The Contractor proposes to make the additions, modifications, or deletions to the Work described in the Contract Documents, as shown in Attachment "A" and requests that you take the following action:

- ☐ Notify us that you concur that this change does not require a change in Contract time or amount and issue a Field Order.
- ☐ Issue a Change Order for performing the described change. Change in Contract amount is indicated in the attached detailed cost breakdown of labor, materials, equipment and all other costs associated with this change. Impacts on Contract Time are shown in the attached revised schedule.
- ☐ Authorize the Contractor to proceed with the described change. Payment will be requested at the unit price bid.
- ☐ Authorize the Contractor to proceed with the change under the time and materials provisions of the Contract.

By: _____ Date: _____

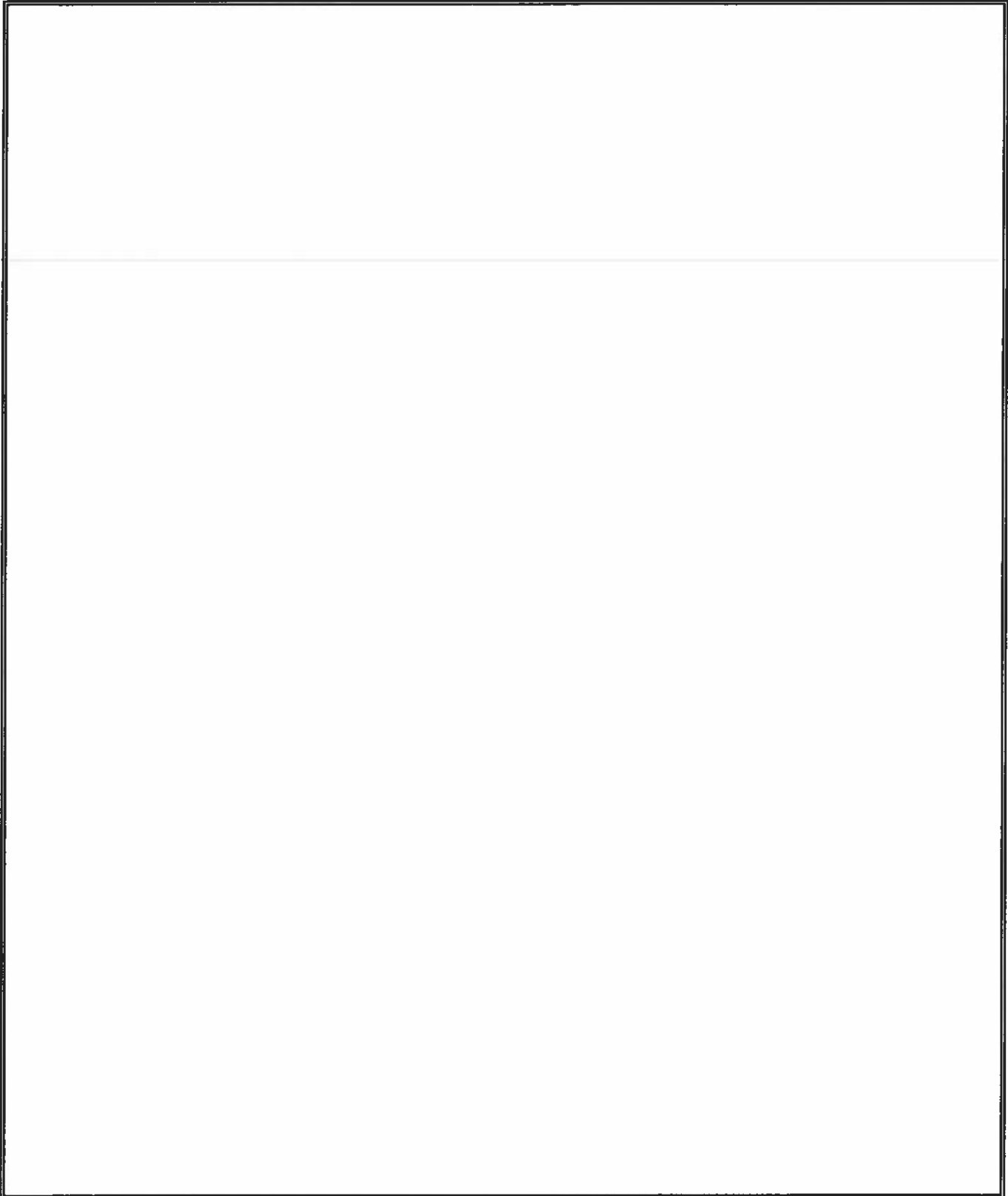
CONSTRUCTION MANAGER'S RESPONSE

We respond to your request as follows:

- ☐ We concur that this is a no cost or time change. See attached/forthcoming Field Order No. ____/ comments.
- ☐ Your proposal is recommended to the Owner. See attached/forthcoming proposed Change Order.
- ☐ Proceed with the change at the unit price bid.
- ☐ Proceed with the change under the time and materials provisions of the Contract.
- ☐ Additional information is required to evaluate this request. Provide information as described in the attached comments and resubmit.
- ☐ Contractor's Modification Request is not accepted.

By: _____ Date: _____

**CONTRACTOR'S MODIFICATION REQUEST
ATTACHMENT A
(4.42 /)**





**CONSENT OF SURETY COMPANY
TO PAYMENT PROCEDURES
(4.86 /)**

PROJECT: _____ **PROJECT NUMBER:** _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

The Surety Company, on bond of the Contractor listed above for the referenced project, in accordance with the Contract Documents, hereby approves schedule of values, payment request form and method of payment for the referenced project.

In witness whereof, the Surety Company has hereunto set its hand this _____ day of _____ 20____.

Surety Company

By _____
Authorized Representative

Title _____

Address:

Attach Power of Attorney

**PAYMENT REQUEST (4.51)**

PROJECT: _____ **PROJECT NUMBER** _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: _____

PAYMENT PERIOD FROM: _____ **TO** _____ **ESTIMATE NO.:** _____

SUMMARY OF PAYMENT ESTIMATE VALUES FROM ATTACHED TABULATIONS

Original Contract Amount	\$ -
Approved Change Orders	\$ -
Current Contract Amount	\$ -
Total Value of Original Contract Performed (Attachment "A" consisting of ___ pages)	\$ -
Extra Work on Approved Change Orders (Attachment "B" consisting of ___ pages)	\$ -
Materials on Hand (Attachment "C" consisting of ___ pages)	\$ -
Total Value of Work to Date	\$ -
Less Amount Retained at _____ %	\$ -
Net Amount Earned on Contract	\$ -
Less Amount of Previous Payments	\$ -
BALANCE DUE THIS STATEMENT	\$ -
Percentage of Contract Paid to Date	\$ -

The undersigned Contractor certifies that all work, including materials on hand, covered by this Periodical Payment has been completed and delivered and stored in accordance with the Contract Documents, that all amounts have been paid by him for work, materials, and equipment for which previous Periodical Payments were issued and received from the Owner, and that the current payment shown herein is now due.

Contractor: _____ By _____

Date: _____

Subscribed and sworn to before me this _____ day of _____, 20____

Notary Public: _____

My Commission expires: _____

**Recommended for Payment by
FREESE AND NICHOLS, INC.**

By _____
Date

**Approved for Payment by
[OWNER]**

By _____
Date

**Approved for Payment by
[OWNER]**

By _____
Date

**Approved for Payment by
[OWNER]**

By _____
Date

ATTACHMENT "A"
PAYMENT REQUEST

TABULATION OF VALUES FOR ORIGINAL CONTRACT WORK PERFORMED

PROJECT: _____ OWNER: _____ CONTRACTOR: _____ ENGINEER: _____								PROJECT NUMBER _____ _____ _____		
PAYMENT PERIOD FROM: _____ TO _____								ESTIMATE NO.: _____		
ITEM NO.	DESCRIPTION OF ITEM	QUANTITY ORIGINAL ESTIMATE	UNIT OF MEASURE	UNIT PRICE	TOTAL CONTRACT AMOUNT	QUANTITY THIS ESTIMATE	WORK COMPLETED FROM PREVIOUS ESTIMATE	BALANCE OF MATERIALS ON HAND	TOTAL VALUE OF WORK COMPLETED	% OF WORK COMPLETE
TOTAL FOR PAGE / PROJECT										

PROJECT: _____	PROJECT NUMBER _____
OWNER: _____	_____
CONTRACTOR: _____	_____
ENGINEER: _____	_____

[illegible]

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ATTACHMENT "C"
PAYMENT REQUEST
TABULATION OF VALUES FOR MATERIALS ON HAND

PROJECT: _____ OWNER: _____ CONTRACTOR: _____ ENGINEER: _____						PROJECT NUMBER _____ _____ _____	
PAYMENT PERIOD FROM: _____ TO _____						ESTIMATE NO.: _____	
ATTACHMENT "A" OR "B" ITEM NO.	TOTAL SCHEDULED VALUE	NAME OF SUPPLIER	INVOICE NO.	TOTAL INVOICE AMOUNT THIS ESTIMATE	TOTAL STORED MATERIAL AT LAST PAY ESTIMATE	AMOUNT INSTALLED TO DATE	BALANCE OF MATERIALS ON HAND
TOTAL FOR PAGE / PROJECT							

ATTACHMENT "D"
PROJECT SUMMARY

PROJECT: _____	PROJECT NUMBER
OWNER: _____	_____
CONTRACTOR: _____	_____
ENGINEER: _____	_____

PAYMENT PERIOD FROM:	TO	ESTIMATE NO.:
-----------------------------	-----------	----------------------

CONTRACT TIME SUMMARY

Date of Notice to Proceed	_____	
Original Contract Duration	_____	Days
Original Date of Contract Substantial Completion	_____	
Original Date of Contract Final Completion	_____	
Approved Time Extensions	_____	Days
Current Contract Duration	_____	Days
Current Date of Contract Substantial Completion	_____	
Current Date of Contract Final Completion	_____	
 Days Charged to Project to Date	_____	Days
Days Remaining in Contract	_____	Days
Percent of Current Project Duration	_____	%
 Current Scheduled Completion Date	_____	
Project is (Ahead/Behind) Schedule	_____	

CONTRACT COST SUMMARY

Original Contract Amount	\$	-	
Approved Change Orders	\$	-	
Current Contract Amount	\$	-	
Contract Earnings to Date on Original Contract	\$	-	
Earnings on Approve Change Orders	\$	-	
Materials on Hand	\$	-	
Total Current Project Amount Earned	\$	-	
Percent of Contract Earned to Date			%
Retainage	\$	-	
Amount Paid to Date	\$	-	
Percent of Contract Paid to Date			%



SUBMITTAL TRANSMITTAL

(4. /)

PROJECT: _____ OWNER: _____ CONTRACTOR: _____ ARCHITECT/ENGINEER: <u>Freese & Nichols, Inc.</u>	PROJECT NUMBER: _____ _____ _____
--	--

REFERENCE DATA: Contractor's Submittal No. _____ Specification Section: _____ Plan Sheet No.: _____ Description: _____	
---	--

CONTRACTOR'S CERTIFICATION: *I hereby certify that this submittal has been reviewed by the Contractor and is in strict conformance with the Contract Documents as modified by Addenda, Change Orders and Field Orders.* **CERTIFIED BY:** _____ **DATE:** _____

TYPE	#	DESCRIPTION	#SENT	#RET'D	STATUS
CMR		Contractor's Modification Request			<div><input type="checkbox"/> Approved</div> <div><input type="checkbox"/> Approved As Corrected</div> <div><input type="checkbox"/> Not Approved</div> <div><input type="checkbox"/> Revise & Resubmit</div> <div><input type="checkbox"/> Filed As Received</div> <div><input type="checkbox"/> Final Distribution</div> <div><input type="checkbox"/> Change Order Issued</div> <div><input type="checkbox"/> Field Order Issued</div> <div><input type="checkbox"/> Recommended For Approval</div> <div><input type="checkbox"/> Returned W/O Review</div> <div><input type="checkbox"/> Add'l Information Required</div> <div><input type="checkbox"/> Cancelled</div> <div><input type="checkbox"/> See Review Comments</div> <div><input type="checkbox"/> Pending Change Order</div>
CTR		Certified Test Report			
EIR		Equipment Installation Report			
O&M		Operation & Maintenance Manual			
NBC		Notification By Contractor			
PCM		Proposed Contract Modification			
PR		Payment Request			
PP		Project Photographs			
RD		Record Data			
RFI		Request For Information			
SAM		Sample			
SCH		Schedule Of Progress			
SD		Shop Drawing			

FOR ARCHITECT / ENGINEER'S USE ONLY

DATE RECEIVED _____ **BY** _____ **DATE RETURNED** _____ **BY** _____

COMMENTS:

DISTRIBUTION				REVIEW			
NO.	SENT TO.	NO.	SENT TO.	DEPT.	BY	DATE SENT	DATE RET=D



SHOP DRAWING DEVIATION REQUEST (4.31 /)

PROJECT: _____ OWNER: _____ CONTRACTOR: _____ ENGINEER: Freese & Nichols, Inc.	PROJECT NUMBER: _____ _____ _____
---	---

Shop Drawing No. SD- _____	Reference Specification/Drawing: _____	Description: _____
--------------------------------------	---	---------------------------

<p><i>With the exception of the deviations noted below, this Shop Drawing was reviewed by the Contractor and was determined to be in strict compliance with the Contract Documents. The Contractor requests that the following specific deviations to the Contract Documents be permitted.</i></p> <p>Contractor=s Signature _____ Date _____</p>	<p align="center">For Engineer' s Use Only</p> <p>When executed here by the Engineer, this form becomes Field Order: FO - _____ on this project, and it is issued to document the deviations approved below by the Engineer.</p>
---	---

To Be Completed By Contractor	Engineer=s Signature _____ Date _____
--------------------------------------	---------------------------------------

Deviation Item No.	Specification No.	Description	Not Approved	Approved By (signature)	Date	Change Order Required
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>

The deviations to the Contract Documents listed above that are signed by the Engineer are approved. It is the Engineer=s opinion that this approval supplements the Contract Documents pursuant to the provision of General Condition 3.04B in the Contract Documents and does not alter the Contract Price or Contract Time. The Contractor shall notify the Engineer prior to commencing the work should he disagree with the Engineer=s opinion and a change order should be requested.

Concrete Mix Design

PROJECT NAME: _____

FNI PROJECT NUMBER: _____

PROJECT LOCATION: _____

OWNER: _____

GENERAL CONTRACTOR: _____

MIX NUMBER / CLASS: _____

A. Mix Design

Cement	=		lb/yd ³
Fly Ash	=		lb/yd ³
Other Cementitious Material:			
	=		lb/yd ³
Fine Aggregate (Dry Weight)	=		lb/yd ³
Coarse Aggregate (Dry Weight)	=		lb/yd ³
Water	=		lb/yd ³
Water Reducing Admixture	=		oz/yd ³
High Range Water Reducer	=		oz/yd ³
Air Entraining Admixture	=		oz/yd ³
Other Admixture:			
	=		oz/yd ³
Slump	=		inches
Gross Weight	=		lb/yd ³
Air Content	=		%
Water/Cement Ratio	=		

B. Materials

	SOURCE	ASTM	TYPE	REMARKS
Cement				
Fly Ash				
Other Cementitious Material:				

Fine Aggregate				
Coarse Aggregate				
Water				
Water Reducer				
High Range Water Reducer				
Air Entraining				
Other Admixture:				

Cast-in-Place Concrete
LCS11454 – 2.0 MG Elevated Storage Tank

C. Determination of Average Strength Required (f_{cr})

1. Test Records Available:

A. Summary of Test Records: (Provide supporting documentation.)

Test Group No.	No. of Consecutive Tests	Specified Strength (psi)	Standard Deviation (psi)

Average Standard Deviation:

B. Standard Deviation Modification Factor
(ACI 301, Table 4.2.3.3.a)

C. Standard Deviation Used

Average Compressive Strength Required

2. Test Records Not Available:

A. Average Compressive Strength Required
(ACI 301, 4.2.3.3.b, if required)

D. Documentation of Required Average Compressive Strength (Check One)

1. Field Strength Test Record (ACI 301, 4.2.3.4.a)

- Complete Attachment A.

2. Trial Mixtures (ACI 301, 4.2.3.4.b)

- Complete Attachment B.

I, _____ certify that the above information is correct and all gradations, cement certifications and test results are located at our place of business for review by the Engineer.

NAME: _____

DATE: _____

TITLE: _____

COMPANY: _____

Cast-in-Place Concrete

LCS11454 – 2.0 MG Elevated Storage Tank

Attachment A

Documentation of Average Strength – Field Strength Test Record (ACI 301, 4.2.3.4.a)

A. Summary of test records: (Provide supporting documentation.)

Test Record No.	No. of Tests in Record	Duration of Record (days)	Water-Cementitious Materials Ratio	Average Strength (psi)

B. Interpolation used? _____
▪ Provide an interpolation calculation or plot of strength versus proportions.

C. Submit the following data for each mix:

1. Brand, type and amount of cement.
2. Brand, type and amount of each admixture.
3. Source of each material used.
4. Amount of water.
5. Proportions of each aggregate material per cubic yard.
6. Gross weight per cubic yard.
7. Measured slump.
8. Measured air content.
9. Results of consecutive strength tests.

Attachment B

Documentation of Average Strength – Trial Mixtures (ACI 301, 4.2.3.4.b)

A. Summary of test record(s):

Trial Mix No.	7-day Tests		28-day Tests		Water-Cementitious Materials Ratio	Slump (in)	Air Content (%)	Temperature (°F)
	No. of Test Cylinders	Strength (psi)	No. of Test Cylinders	Strength (psi)				

B. Maximum water-cementitious materials ratio _____

- Provide an interpolation calculation or plot of strength versus water-cementitious materials ratio.

C. Submit the following data for each mix:

1. Brand, type and amount of cement.
2. Brand, type and amount of each admixture.
3. Amount of water used in trial mixes.
4. Proportions of each aggregate material per cubic yard.
5. Gross weight per cubic yard.
6. Measured slump.
7. Measured air content.
8. Compressive strength developed at 7 days and 28 days, from not less than three test cylinders cast for each 7 and 28 day test.



PROJECT: _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc.
DATE: _____

No.: _____ Description: _____
Specification Section No.: _____ Page No.: _____ Par. No.: _____ Sheet No.: _____
Entitled: _____

System Fluid: _____ Identification No.: _____
Pipe Size: _____ Pipe Material: _____

Structure: _____
N/S Coord.: _____ E/W Coord.: _____ Station: _____ Elev.: _____
Test Section: From: _____ To: _____

Test Fluid _____ Test Pressure _____ Test Time Required _____
Allowable Pressure Loss/Fluid Make-up _____

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PROTECTIVE COATING TEST REPORT

(4. /)

PROJECT: _____ PROJECT NUMBER: _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____
DATE: _____

REFERENCE DATA:
Report No.: _____ Description: _____

APPLICATION AREA:
Item coated (from drawings): _____
Identification No.: _____ Unit No.: _____

LOCATION:
Structure: _____
N/S Coord.: _____ E/W Coord.: _____ Station: _____ Elev.: _____

SURFACE PREPARATION:

<input type="checkbox"/> Shop Primer	<input type="checkbox"/> Field Blast-Commercial Gray	<input type="checkbox"/> Field Blast- Near White
<input type="checkbox"/> Brush Blast	<input type="checkbox"/> Power Tool & Solvent Cleaning	<input type="checkbox"/> Field Blast-White Metal

COATING APPLICATION:

DRY FILM THICKNESS

Coat	Type	Description (Brand, Series, Name/No.)	Color	Req= d	Test	Retest
Primer						
Interim						
Interim						
Finish						

CHECKED FOR HOLIDAYS

☐ Not Required ☐ Tested and Defects Marked Date: _____
☐ Tested and No Defects Discovered Date: _____

Testing By: _____ With: _____

Witnessed by: _____ With: _____



EQUIPMENT INSTALLATION REPORT
(4.36 /)

PROJECT: _____ OWNER: _____ CONTRACTOR: _____ ENGINEER: Freese & Nichols, Inc. _____	PROJECT NUMBER: _____ _____ _____												
REFERENCE DATA: EIR No.: _____ Description: _____ Specification Section No.: _____ Page No.: _____ Par. No.: _____ Sheet No.: _____ Entitled: _____ Detail Designation: _____ Drawing Attached: <input type="checkbox"/> Yes <input type="checkbox"/> No													
EQUIPMENT IDENTIFICATION: Name (from drawings): _____ Identification No.: _____ Unit No.: _____ Manufacturer: _____ Capacity: _____ Model No.: _____ Serial No.: _____													
LOCATION: Structure: _____ N/S Coord.: _____ E/W Coord.: _____ Station: _____ Elev.: _____ Date Installation Completed: _____													
OPERATOR TRAINING HAS BEEN CONDUCTED ON: <table style="width: 100%;"><tr><td><input type="checkbox"/> Operation of Equipment</td><td><input type="checkbox"/> Routine Maintenance</td><td><input type="checkbox"/> Trouble Shooting</td></tr><tr><td><input type="checkbox"/> Emergency Procedures</td><td><input type="checkbox"/> Lubrication Procedures</td><td><input type="checkbox"/> Start up and Shutdown</td></tr><tr><td colspan="3"><input type="checkbox"/> Supplementary Instruction/Training Manuals</td></tr></table> Operator Training Conducted: Dates: _____ No. of Hours _____ Firm/Instructor: _____		<input type="checkbox"/> Operation of Equipment	<input type="checkbox"/> Routine Maintenance	<input type="checkbox"/> Trouble Shooting	<input type="checkbox"/> Emergency Procedures	<input type="checkbox"/> Lubrication Procedures	<input type="checkbox"/> Start up and Shutdown	<input type="checkbox"/> Supplementary Instruction/Training Manuals					
<input type="checkbox"/> Operation of Equipment	<input type="checkbox"/> Routine Maintenance	<input type="checkbox"/> Trouble Shooting											
<input type="checkbox"/> Emergency Procedures	<input type="checkbox"/> Lubrication Procedures	<input type="checkbox"/> Start up and Shutdown											
<input type="checkbox"/> Supplementary Instruction/Training Manuals													
EQUIPMENT HAS BEEN CHECKED FOR: <table style="width: 100%;"><tr><td><input type="checkbox"/> Installation</td><td><input type="checkbox"/> Lubrication</td><td><input type="checkbox"/> Alignment</td></tr><tr><td colspan="3"><input type="checkbox"/> Stress Imposed by Piping and/or Anchor Bolts</td></tr><tr><td colspan="3"><input type="checkbox"/> Operation under Full Load Conditions</td></tr><tr><td colspan="3"><input type="checkbox"/> Other Conditions as Specified _____</td></tr></table>		<input type="checkbox"/> Installation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Alignment	<input type="checkbox"/> Stress Imposed by Piping and/or Anchor Bolts			<input type="checkbox"/> Operation under Full Load Conditions			<input type="checkbox"/> Other Conditions as Specified _____		
<input type="checkbox"/> Installation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Alignment											
<input type="checkbox"/> Stress Imposed by Piping and/or Anchor Bolts													
<input type="checkbox"/> Operation under Full Load Conditions													
<input type="checkbox"/> Other Conditions as Specified _____													
<p><i>I hereby certify that I was present when the equipment described above was placed in operation and have inspected, checked and adjusted the equipment as necessary for its proper operation. As an authorized technical representative of the equipment manufacturer, I approve the installation and authorize operation of the equipment.</i></p> <p>By: _____ Date: _____</p> <p>Representing: _____</p> <p>Witnessed by: _____</p>													



O & M MANUAL REVIEW REPORT
(4.34 /)

PROJECT: _____ **PROJECT NUMBER:** _____
OWNER: _____
CONTRACTOR: _____
CONSTRUCTION MANAGER: Freese & Nichols, Inc. _____

REFERENCE DATA:

O&M No.: _____ Description: _____
Specification Section No.: _____ Page No.: _____ Par. No.: _____ Sheet No.: _____
Entitled: _____
Detail Designation: _____ Drawing Attached: ☐ Yes ☐ No

EQUIPMENT IDENTIFICATION:

Name (from drawings): _____
Identification No.: _____ Unit No.: _____
Manufacturer: _____
Capacity: _____ Model No.: _____ Serial No.: _____

LOCATION:

Structure: _____ N/S Coord.: _____
E/W Coord.: _____ Station: _____ Elevation: _____

SUBMITTAL: ☐ Preliminary O & M ☐ Final O & M ☐ Revised Final

DESCRIPTION OF OPERATION

☐ Equipment Functions ☐ Normal Operating Characteristics
☐ Engineering Data ☐ Limiting Conditions ☐ Safety Conditions

EQUIPMENT MANUFACTURER'S RECOMMENDED STEP BY STEP PROCEDURES FOR

☐ Start-up ☐ Normal Operations ☐ Shut Down ☐ Regulation
☐ Control ☐ Emergency Conditions ☐ Limiting Operating Conditions

MAINTENANCE INSTRUCTION

☐ Preventive/Routine Maintenance Schedule ☐ Guide to Troubleshooting

MAINTENANCE - LUBRICATION

☐ Lubricant Chart ☐ Lubrication Schedule ☐ Cross Reference

MAINTENANCE - ASSEMBLY

☐ Exploded View ☐ Cross Sectional Views ☐ Parts List and Number

EQUIPMENT MANUFACTURER'S RECOMMENDED STEP BY STEP PROCEDURES FOR

☐ Disassembly ☐ Repair/Parts Replacement ☐ Reassembly
☐ Installation ☐ Alignment/Adjustment/Calibration ☐ Preventive Maintenance Procedures

PARTS

☐ Generic Name ☐ Part ID Number ☐ Predicted Life
☐ Parts Subject To Wear ☐ Recommended Spare Parts

ELECTRICAL

- | | |
|---|--|
| <input type="checkbox"/> Operating Procedure | <input type="checkbox"/> Electrical Components (by model) |
| <input type="checkbox"/> Circuit Directories | <input type="checkbox"/> As-installed Wiring Diagrams |
| <input type="checkbox"/> Maintenance Procedures | <input type="checkbox"/> As-Installed Control Diagrams by Control Mfg. |
| <input type="checkbox"/> Written Description of the Sequence of Operation for Electrical Controls | |

WARRANTY AND SERVICE

- | | | |
|--|---|---------------------------------------|
| <input type="checkbox"/> Warranty Included | <input type="checkbox"/> Extended Service Agreement | <input type="checkbox"/> Service Data |
|--|---|---------------------------------------|

MANUAL PRESENTATION

- | | | |
|--|--|---------------------------------|
| <input type="checkbox"/> Manual Text and Drawings Legible | <input type="checkbox"/> Text Pages 8-1/2 x 11 | <input type="checkbox"/> Binder |
| <input type="checkbox"/> Drawing 8-1/2 x 11 or 11 x 17 placed in envelopes bound in Manual | | |
| <input type="checkbox"/> Non Pertinent Data Deleted | <input type="checkbox"/> Table of contents | |

Comment Number	Reviewed By	Review Comments

By: _____



**CONSENT OF SURETY COMPANY
TO FINAL PAYMENT (4.86 /)**

PROJECT: _____ **PROJECT NUMBER:** _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

The Surety Company, on bond of the Contractor listed above for the referenced project, in accordance with the Contract Documents, hereby approves final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to the Owner under the terms of the Contract and as set forth in said Surety Company's bond.

In witness whereof, the Surety Company has hereunto set its hand this _____ day of _____ 20____.

Surety Company

By _____
Authorized Representative

Title _____

Address:

Attach Power of Attorney



**CONSENT OF SURETY COMPANY TO REDUCTION
OF OR PARTIAL RELEASE OF RETAINAGE**

(4.86 /)

PROJECT: _____ **PROJECT NUMBER:** _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

The Surety Company, on bond of the Contractor listed above for the referenced project, in accordance with the Contract Documents, hereby approves a reduction of or partial release of retainage to the Contractor in the amount of _____ and agrees that payment of this amount to the Contractor shall not relieve the Surety Company of any of its obligations to the Owner under the terms of the Contract, and as set forth in said Surety Company's bond.

In witness whereof, the Surety Company has hereunto set its hand this _____ day of _____ 20____.

Surety Company

By: _____
Authorized Representative

Title: _____

Address: _____

Attach Power of Attorney



**CONTRACTOR'S AFFIDAVIT OF
PAYMENT OF DEBTS AND CLAIMS**

(4. /)

PROJECT: _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc. _____

PROJECT NUMBER: _____

The Contractor, in accordance with the Contract Documents, hereby certifies that, except as listed below, all obligations for all materials and equipment furnished, for all work labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible have been paid in full or have otherwise been satisfied in full.

EXCEPTIONS: (If none, write "NONE". The Contractor shall furnish a bond, acceptable to the Owner, for each exception.)

CONTRACTOR _____

BY _____

TITLE _____

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public: _____

My Commission Expires: _____



CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS

(4. /)

PROJECT: _____
OWNER: _____
CONTRACTOR: _____
ENGINEER: Freese & Nichols, Inc.

PROJECT NUMBER: _____

The Contractor, in accordance with the Contract Documents, and in consideration for the full and final payment to the Contractor for all services in connection with the project, does hereby waive and release any and all liens, or any and all claims to liens which the Contractor may have on or affecting the project as a result of its contract(s) for the Project or for performing labor and/or furnishing materials in any way connected with the construction of any aspect of the project. The Contractor further certifies and warrants that all subcontractors of labor and/or materials for the Project, except as listed below, have been paid in full for all labor and/or materials supplied to, for, through or at the direct or indirect request of the Contractor prior to, through and including the date of this affidavit.

EXCEPTIONS: (If none, write "NONE". The Contractor shall furnish a bond, acceptable to the Owner, for each exception.)

CONTRACTOR

By _____

Title _____

Subscribed and sworn to before me this _____ day of _____, 20 _____

Notary Public: _____

My Commission Expires: _____

01 32 16 CONSTRUCTION PROGRESS SCHEDULE

1.00 GENERAL

1.01 REQUIREMENTS

- A. Prepare and submit a Progress Schedule for the Work and update the schedule on a monthly basis for the duration of the Project.
- B. Provide schedule in adequate detail to allow Owner to monitor the Work progress, to anticipate the time and amount of Applications for Payment, and to relate submittal processing to sequential activities of the Work.
- C. Incorporate and specifically designate the dates of anticipated submission of submittals and the dates when submittals must be returned to the Contractor into the schedule.
- D. Assume complete responsibility for maintaining the progress of the Work per the schedule submitted.

1.02 SUBMITTALS

- A. Submit Progress Schedules in accordance with Section 01 33 00 "Submittal Procedures." Submit schedules within the following times:
 - 1. Preliminary schedule within 10 days after the Notice of Award. The schedule is to be available at the pre-construction conference.
 - 2. Detailed schedule at least 10 days prior to the first payment request.
- B. Submit Progress Schedules with Applications for Payment. Schedules may be used to evaluate the Applications for Payment. Failure to submit the schedule may cause delay in the review and approval of Applications for Payment.

1.03 SCHEDULE REQUIREMENTS

- A. Schedule is to be in adequate detail to:
 - 1. Assure adequate planning, scheduling, and reporting during the execution of the Work.
 - 2. Assure the coordination of the Work of the Contractor and the various Subcontractors and Suppliers.
 - 3. Assist in monitoring the progress of the Work.
 - 4. Assist in evaluating proposed changes to Contract Time and Project schedule.
 - 5. Assist the Owner in review of Contractor's Application for Payment.
- B. Provide personnel with 5 years' minimum experience in scheduling construction work comparable to this Project.
- C. Provide the schedule in the form of a time scaled horizontal bar chart which indicates graphically the Work scheduled at any time during the Project. The graph is to indicate:
 - 1. Complete sequence of construction by activity.
 - 2. Identification of the activity by structure, location, and type of Work.

3. Chronological order of the start of each item of Work.
 4. The activity start and stop dates.
 5. The activity duration.
 6. Successor and predecessor relationships for each activity. Group related activities or use lines to indicate relationships.
 7. A clearly indicated critical path. Indicate only one critical path on the schedule. The subsystem with the longest time of completion is the critical path where several subsystems each have a critical path. Float time is to be assigned to other subsystems.
 8. Project percentage of completion, based on dollar value of the Work included in each activity to the last day of the pay period for each Application for Payment.
- D. Submit a separate submittal schedule indicating the dates when the submittals are to be sent to the Engineer.
1. List specific dates submittal is to be sent to the Engineer.
 2. List specific dates submittal must be processed in order to meet the proposed schedule.
 3. Allow a reasonable time to review submittals, taking into consideration the size and complexity of the submittal, the submission of other submittals, and other factors that may affect review time.
 4. Allow time for re-submission of the submittals for each item. Contractor is responsible for delays associated with additional time required to review incomplete or erroneous submittals and for the time lost when submittals are submitted for products that do not meet the requirements of the Specifications.
- E. Update the schedule at the end of each monthly partial payment period to indicate the progress made on the Project to that date.

1.04 SCHEDULE REVISIONS

- A. Submit a written report if the schedule indicates that the Project is more than 30 days behind schedule. The report is to include:
1. Number of days Project is behind schedule.
 2. Narrative description of the steps to be taken to bring the Project back on schedule.
 3. Anticipated time required to bring the Project back on schedule.
 4. Submit a revised schedule indicating the action that the Contractor proposes to take to bring the Project back on schedule.
- B. Revise the schedule to indicate any adjustments in Contract Time approved by Change Order.
1. Revised schedule is to be included with Contract Modification Request for which an extension of time is requested.
 2. Failure to submit a revised schedule indicates that the modification shall have no impact on the ability of the Contractor to complete the Project on time and that the cost

associated with the change of additional plant or work force have been included in the cost proposed for the modification.

- C. Updating the Project schedule to reflect actual progress is not considered a revision to the Project schedule.
- D. Applications for Payment will not be recommended for payment without a revised schedule and if required, the report indicating the Contractor's plan for bringing the Project back on schedule.

1.05 FLOAT TIME

- A. Define float time as the amount of time between the earliest start date and the latest start date of a chain of activities on the construction schedule.
- B. Float time is not for the exclusive use or benefit of either the Contractor or Owner.
- C. Contract Time cannot be changed by the submission of this schedule. Contract Time can only be modified by approved Change Order.
- D. Schedule completion date must be the same as the contract completion date. Time between the end of construction and the contract final completion date is to be indicated as float time.

END OF SECTION

01 32 33 PHOTOGRAPHIC DOCUMENTATION

1.00 GENERAL

1.01 WORK INCLUDED

- A. Provide one aerial photograph of the completed Project from an angle and height to include the entire Site.
- B. All photographs provided under this Section and digital copies of these photographs are to become the property of the Owner. Photographs may not be used for publication, or public or private display without the written consent of the Owner.
- C. Cost of Photographic Documentation is to be included in the Contractor Construction Phase fee.

1.02 QUALITY ASSURANCE

- A. Provide clear photographs taken with proper exposure. View photographs in the field and take new photographs immediately if photos of an adequate print quality cannot be produced. Provide photographs with adequate quality and resolution to permit enlargements.

1.03 SUBMITTALS

- A. Submit Photographic Documentation as Record Data in accordance with Section 01 33 00 "Submittal Procedures."

2.00 PRODUCTS

2.01 PHOTOGRAPHS

- A. Provide photographs in digital format with a minimum resolution of 1280 x 960, accomplished without a digital zoom.
- B. Take photographs at locations acceptable to the Engineer.
- C. Provide two color prints of each photograph and a digital copy of each photograph taken.
- D. Identify each print on back with:
 - 1. Project name.
 - 2. Date, time, location, and orientation of the exposure.
 - 3. Description of the subject of photograph.
- E. Submit photograph in clear plastic sheets designed for photographs. Place only one photograph in each sheet to allow the description on the back to be read without removing the photograph.
- F. Final photographs are to include two 24-by-30-inch glossy color prints for each photograph selected by the Owner.

END OF SECTION

01 33 00 SUBMITTAL PROCEDURES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Submit documentation as required by the Contract Documents and as reasonably requested by the Owner and Engineer to:
 - 1. Record the products incorporated into the Project for the Owner.
 - 2. Provide information for operation and maintenance of the Project.
 - 3. Provide information for the administration of the Contract.
 - 4. Allow the Engineer to advise the Owner if products proposed for the Project by the Contractor conform, in general, to the design concepts of the Contract Documents.
- B. Contractor's responsibility for full compliance with the Contract Documents is not relieved by the Engineer's review of submittals. Contract modifications can only be approved by Change Order or Field Order.

1.02 CONTRACTOR'S RESPONSIBILITIES

- A. Review and certify all submittals prior to submission.
- B. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction requirements.
 - 3. Location of all existing structures, utilities and equipment related to the submittals.
 - 4. Submittals are complete for their intended purpose.
 - 5. Conflicts between the submittals related to the various Subcontractors and Suppliers have been resolved.
 - 6. Quantities and dimensions shown on the submittals.
- C. Submit information per the procedures described in this Section and the detailed Specifications.
- D. Furnish the following submittals:
 - 1. As specified in the attached Submittal Schedule.
 - 2. Schedules, data and other documentation as described in detail in this Section or referenced in the General Conditions and Contract Documents.
 - 3. Documentation required for the administration of the Contract per Section 01 31 13 "Project Coordination."
 - 4. Shop Drawings required for consideration of a contract modification per Paragraph 1.08.
 - 5. Submittals as required in the detailed Specifications.
 - 6. Submittals not required will be returned without Engineer's review.

- E. Submit a schedule indicating the date submittals will be sent to the Engineer and proposed dates that the product will be incorporated into the Project. Make submittals promptly in accordance with the schedule to cause no delay in the Project.
 - 1. Send submittals to the Engineer allowing a reasonable time for delivery, review and marking submittals. Include time for review of a resubmission if necessary. Allow adequate time for the submittal review process, ordering, fabrication, and delivery of the product to not delay progress on the Project.
 - 2. Schedule submittal to provide all information for interrelated Work at one time. No review will be performed on submittals requiring coordination with other submittals. Engineer will return submittals for resubmission as a complete package.
- F. Submit information for all of the components and related equipment required for a complete and operational system in the same submittal.
 - 1. Include electrical, mechanical, and other information required to indicate how the various components of the system function.
 - 2. Provide certifications, warranties, and written guarantees with the submittal package for review when they are required.
 - 3. Fabrication or installation of any products prior to the approval of Shop Drawings is done at the Contractor's risk. Products not meeting the requirements of Contract Documents are defective and may be rejected at the Owner's option.
- G. Payment will not be made for products for which submittals are required until the submittals have been received. Payment will not be made for products for which Shop Drawings or Samples are required until these are approved by the Engineer.

1.03 QUALITY ASSURANCE

- A. Submit legible, accurate, complete documents presented in a clear, easily understood manner. Submittals not meeting these criteria will be returned without review.
- B. Demonstrate that the proposed products are in full and complete compliance with the design criteria and requirements of the Contract Documents including Drawings and Specifications as modified by Addenda, Field Orders, and Change Orders.
- C. Furnish and install products that fully comply with the information included in the submittal.

1.04 SUBMITTAL PROCEDURES

- A. Submit an electronic copy of each submittal through the Project portal (website) provided by the Engineer. The Contractor will be provided access to log onto the website to post submittal documents and check the status of submittals.
 - 1. The complete contents of each submittal, including associated drawings, Product Data, etc., shall be submitted in Portable Document Format (PDF.) Submit PDF document with adequate resolution to allow documents to be printed in a format equivalent to the document original. Documents are to be scalable to allow printing on standard 8-1/2 x 11 or 11 x 17 papers.

2. Create and submit color PDF documents where color is important to the evaluation of the submittal and / or where comments will be lost if only black and white PDF documents are provided. Submit Sample and color charts per Paragraph 1.04.H.
- B. Transmit all submittals, with a properly completed Submittal Transmittal Form as provided by the Engineer.
1. Use a separate transmittal form for each specific product, class of material, and equipment system.
 2. Submit items specified in different Sections of the Specifications separately unless they are part of an integrated system.
- C. Assign a submittal number to the documents originated to allow tracking of the submittal during the review process.
1. Assign the number consisting of a prefix, a sequence number, and a letter suffix. Prefixes shall be as follows:

Prefix	Description	Originator
AP	Application for Payment	Contractor
CO	Change Order	Engineer
CMR	Contract Modification Request	Contractor
CTR	Certified Test Report	Contractor
EIR	Equipment Installation Report	Contractor
FO	Field Order	Engineer
NBC	Notification by Contractor	Contractor
O&M	Operation & Maintenance Manuals	Contractor
PD	Photographic Documentation	Contractor
RD	Record Data	Contractor
RFI	Request for Information	Contractor
SAM	Sample	Contractor
SD	Shop Drawing	Contractor
SCH	Schedule of Progress	Contractor

2. Issue sequence numbers in chronological order for each type of submittal.
3. Issue numbers for resubmittals that have the same number as the original submittal followed by an alphabetical suffix indicating the number of times the same submittal has been sent to the Engineer for processing. For example: "SD 025 A" represents shop drawing number 25 and the letter "A" designates this is the second time this submittal has been sent for review.
4. Clearly note the submittal number on each page or sheet of the submittal.
5. Correct assignment of numbers is essential since different submittal types are processed in different ways.

- D. Submit documents with uniform markings.
1. Mark submittals to:
 - a. Highlight Contractor's corrections in green.
 - b. Highlight items pertinent to the products being furnished in yellow and delete items that are not when the Supplier's standard drawings or information sheets are provided.
 - c. Cloud items and highlight in yellow where selections by the Engineer or Owner are required.
 - d. Mark dimensions with the prefix FD to indicate field verified dimensions on the Shop Drawings.
 - e. Provide an 8-by-3-inch blank space for Contractor's and Engineer's stamp. Contractor may use a digital certification if this is preferred. The certification must bear a digital signature.
 2. Define abbreviations and symbols used in Shop Drawings.
 - a. Use terms and symbols in Shop Drawings consistent with the Contract Drawings.
 - b. Provide a list of abbreviations and their meaning as used in the Shop Drawings.
 - c. Provide a legend for symbols used on Shop Drawings.
- E. Mark submittals to reference the Drawing number and/or Section of the Specifications, detail designation, schedule or location that corresponds with the data submitted. Other identification may also be required, such as layout drawings or schedules to allow the reviewer to determine where a particular product is to be used.
- F. Deliver Samples required by the Specifications to the Site. Provide a minimum of two Samples.
- G. Construct mock-ups from the actual products to be used in construction per detailed Specifications.
- H. Submit color charts and Samples for every product requiring color, texture or finish selection.
1. Submit all color charts and Samples at one time.
 2. Do not submit color charts and Samples until all Record Data have been submitted or Shop Drawings for the products have been approved.
 3. Submit color charts and Samples not less than 30 days prior to when these products are to be ordered or released for fabrication to comply with the schedule for construction of the Project.
- I. Submit Contract Modification Request per Section 01 31 13 "Project Coordination" to request modifications to the Contract Documents.

1.05 REVIEW PROCEDURES

- A. Shop Drawings are reviewed in the order received, unless Contractor request that a different priority be assigned.

- B. Mark a submittal as "Priority" to place the review for this submittal ahead of submittals previously delivered. Priority submittals will be reviewed before other submittals for this Project which have been received but not reviewed. Use discretion in the use of "Priority" submittals as this may delay the review of submittals previously submitted. Revise the Schedule of Contractor's Submittals for substantial deviations from the previous schedule.
- C. Review procedures vary with the type of submittal as described in Paragraph 1.06.

1.06 SUBMITTAL REQUIREMENTS

- A. Shop Drawings are required for those products that cannot adequately be described in the Contract Documents to allow fabrication, erection or installation of the product without additional detailed information from the Supplier.
 - 1. Shop Drawings are requested so that the Engineer can:
 - a. Assist the Owner in selecting colors, textures or other aesthetic features.
 - b. Compare the proposed features of the product with the specified features so as to advise the Owner that the product does, in general, conform to the Contract Documents.
 - c. Compare the performance features of the proposed product with those specified so as to advise the Owner that it appears that the product will meet the designed performance criteria.
 - d. Review required certifications, guarantees, warranties, and service agreements for compliance with the Contract Documents.
 - 2. Certify on the Contractor's stamp that the Contractor has reviewed the Shop Drawings and made all necessary corrections such that the products, when installed, will be in full compliance with the Contract Documents. Shop Drawings submitted without this certification will be returned without review.
 - 3. Submit Shop Drawings for:
 - a. Products indicated in the submittal schedule following this Section.
 - b. When a substitution or equal product is proposed in accordance with Paragraph 1.08.
 - 4. Include a complete description of the material or equipment to be furnished. Information is to include:
 - a. Type, dimensions, size, arrangement, model number, and operational parameters of the components.
 - b. Weights, gauges, materials of construction, external connections, anchors, and supports required.
 - c. Performance characteristics, capacities, engineering data, motor curves, and other information necessary to allow a complete evaluation of mechanical components.
 - d. All applicable standards such as ASTM or Federal Specification numbers.
 - e. Fabrication and installation drawings, setting diagrams, manufacturing instructions, templates, patterns, and coordination drawings.

- f. Wiring and piping diagrams and related controls.
 - g. Mix designs for concrete, asphalt, or other materials proportioned for the Project.
 - h. Complete and accurate field measurements for products which must fit existing conditions. Indicate on the submittal that the measurements represent actual dimensions obtained at the Site.
- 5. Provide all required statements of certification, guarantees, Extended Service Agreements, and other related documents with the Shop Drawing. The effective date of these documents shall be the date of acceptance of the Work by the Owner.
- 6. Comments will be made on items called to the attention of the Engineer for review and comment. Any marks made by the Engineer do not constitute a blanket review of the submittal or relieve the Contractor from responsibility for errors or deviations from the Contract requirements.
 - a. Submittals that are reviewed will be returned with one or more of the following designations:
 - 1). Approved: Submittal is found to be acceptable as submitted.
 - 2). Approved as Noted: Submittal is acceptable with corrections or notations made by Engineer and may be used as corrected.
 - 3). Revise and Resubmit: Submittal has deviations from the Contract Documents, significant errors, or is inadequate and must be revised and resubmitted for subsequent review.
 - 4). Not Approved: Products are not acceptable.
 - b. Drawings with a significant or substantial number of markings by the Contractor may be marked "Approved as Noted" and "Revise and Resubmit." These drawings are to be revised to provide a clean record of the submittal.
 - c. Dimensions or other data that do not appear to conform to the Contract Documents will be marked as "At Variance With" (AVW) the Contract Documents or other information provided. The Contractor is to make revisions as appropriate to comply with Contract Documents.
- B. Certifications, Warranties and Service Agreements include documents as specified in the detailed Specifications, as shown in the submittal schedule or as follows:
 - 1. Certified Test Reports (CTR): A report prepared by an approved testing agency giving results of tests performed on products to indicate their compliance with the Specifications (refer to Section 01 40 00 "Quality Requirements.").
 - 2. Certification of Local Field Service (CLS): A certified letter stating that field service is available from a factory or Supplier approved service organization located within a 300 mile radius of the Site. List names, addresses, and telephone numbers of approved service organizations on or attach it to the certificate.
 - 3. Extended Warranty (EW): A guarantee of performance for the product or system beyond the normal 1 year warranty described in the General Conditions. Issue the warranty certificate in the name of the Owner.

4. **Extended Service Agreement (ESA):** A contract to provide maintenance beyond that required to fulfill requirements for warranty repairs, or to perform routine maintenance for a definite period beyond the warranty period. Issue the service agreement in the name of the Owner.
 5. **Certification of Adequacy of Design (CAD):** A certified letter from the manufacturer of the equipment stating that they have designed the equipment to be structurally stable and to withstand all imposed loads without deformation, failure, or adverse effects to the performance and operational requirements of the unit. The letter shall state that mechanical and electrical equipment is adequately sized to be fully operational for the conditions specified or normally encountered by the product's intended use.
 6. **Certification of Applicator/Subcontractor (CSQ):** A certified letter stating that the Applicator or Subcontractor proposed to perform a specified function is duly designated as factory authorized and trained for the application of the specified product.
- C. **Submit Record Data** to provide information to allow the Owner to adequately identify the products incorporated into the Project and allow replacement or repair at some future date.
1. Provide Record Data for all products per the submittal schedule. Record Data is not required for items for which Shop Drawings and/or operations and maintenance manuals are required.
 2. Provide information only on the specified products. Submit a Contract Modification Request for approval of deviations or substitutions and obtain approval by Field Order or Change Order prior to submitting Record Data.
 3. Provide the same information required for Shop Drawings.
 4. Record Data will be received by the Engineer, logged, and provided to Owner for the Project record.
 - a. Record Data may be reviewed to see that the information provided is adequate for the purpose intended. Inadequate drawings may be returned as unacceptable.
 - b. Record Data is not reviewed for compliance with the Contract Documents. Comments may be returned if deviations from the Contract Documents are noted during the cursory review performed to see that the information is adequate.
- D. **Provide Samples** for comparison with products delivered to the Site for use on the Project.
1. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product, with integrally related parts and attachment devices.
 2. Indicate the full range of color, texture, and patterns.
 3. Dispose of Samples when related Work has been completed and approved, and disposal is requested by the Engineer. At Owner's option Samples will become the property of the Owner.
- E. **Construct mock-ups** for comparison with the Work being performed.
1. Construct mock-ups of the size or area indicated in the detailed Specifications.
 2. Construct mock-ups complete with texture and finish to represent the finished product.
 3. Protect mock-ups until Work has been completed and accepted by the Owner.

- 4. Dispose of mock-ups when related Work has been completed and disposal is approved by the Engineer.
- F. Submit Operation and Maintenance manuals (O&M) for all equipment, mechanical devices, or components described in the Contract Documents per Section 01 78 23 "Operation and Maintenance Data." Include copies of approved Shop Drawings in the manual.
- G. Submit Request for Information (RFI) in accordance with Section 01 31 13 "Project Coordination."
- H. Submit a Schedule of Values and Application for Payment (AP) in accordance with Section 01 29 00 "Payment Procedures."
- I. Submit Progress Schedules (SCH) in accordance with Section 01 32 16 "Construction Progress Schedule."
- J. Submit Certified Test Reports (CTR) from independent testing laboratories in accordance with NCTCOG Standards.
 - 1. Submit test reports for material fabricated for this Project with Shop Drawings for that product.
 - 2. Submit test reports produced at the point of production for standard production products with the Record Data for that product.
- K. Submit a list of Suppliers and Subcontractors as Record Data in accordance with Section 01 31 13 "Project Coordination."
- L. Submit Notifications by Contractor (NBC) in accordance with Section 01 31 13 "Project Coordination."
- M. Submit Photographic Documentation (PD) in accordance with Section 01 32 33 "Photographic Documentation."
- N. Submit Process Performance Bonds (PPB) in accordance with the City of Lancaster's standards.

1.07 SUBMITTALS REQUIRED FOR THIS PROJECT

- A. Furnish the following Submittals:
 - 1. Products as indicated in Section 01 33 00.01 "Table of Required Submittals."
 - 2. When a substitution or equal product is proposed in accordance with Paragraph 1.09 and Paragraph 1.10.

1.08 REQUESTS FOR DEVIATION

- A. Submit requests for deviation from the Contract Documents for any product that does not fully comply with the Contract Documents.
- B. Submit request by Contract Modification Request (CMR) per Section 01 31 13 "Project Coordination." Identify the deviations and the reason the change is requested.

- C. Include the amount of cost savings to the Owner for deviations that result in a reduction in cost.
- D. A Change Order or Field Order will be issued by the Engineer for deviations approved by the Owner. Deviations from the Contract Documents may only be approved by Change Order or Field Order.

1.09 SUBMITTALS FOR EQUAL NON SPECIFIED PRODUCTS

- A. The products of the listed Suppliers are to be furnished where the detailed Specifications list several manufacturers but do not specifically list "or equal" or "or approved equal" products. Use of any products other than those specifically listed is a substitution and must be approved per Paragraph 1.10.
- B. Contractor may submit other manufacturers' products that are in full compliance with the Specifications where the detailed Specifications list one or more manufacturers followed by the phrase "or equal" or "or approved equal."
 - 1. Submit Shop Drawings of adequate detail to document that the proposed product is equal or superior to the specified product.
 - 2. Prove that the product is equal. It is not the Engineer's responsibility to prove the product is not equal.
 - a. Indicate on a point by point basis for each specified feature that the product is equal to the Contract Document requirements.
 - b. Make a direct comparison with the specified manufacturer's published data sheets and available information. Provide this printed material with the submittal.
 - c. The decision of the Engineer regarding the acceptability of the proposed product is final.
 - 3. Provide a typewritten certification that, in furnishing the proposed product as an equal, the Contractor:
 - a. Has thoroughly examined the proposed product and has determined that it is equal or superior in all respects to the product specified.
 - b. Has determined that the product will perform in the same manner and result in the same process as the specified product.
 - c. Will provide the same warranties and/or bonds as for the product specified.
 - d. Will assume all responsibility to coordinate any modifications that may be necessary to incorporate the product into the construction and will waive all claims for additional Work which may be necessary to incorporate the product into the Project which may subsequently become apparent.
 - e. Will maintain the same time schedule as for the specified product.
 - 4. A modification request is not required for any product that is in full compliance with the Contract Documents.

1.10 SUBMITTALS FOR SUBSTITUTIONS

- A. Substitutions are defined as any product that the Contractor proposes to provide for the Project in lieu of the specified product.
- B. Submit the following for consideration of approval of a Supplier or product which is not specified:
 - 1. Contract Modification Request for deviation from the Contract Documents per Paragraph 1.08.
 - 2. Prove that the product is acceptable as a substitute. It is not the Engineer's responsibility to prove the product is not acceptable as a substitute.
 - a. Indicate on a point by point basis for each specified feature that the product is acceptable to meet the intent of the Contract Documents requirements.
 - b. Make a direct comparison with the specified Suppliers published data sheets and available information. Provide this printed material with the submittal.
 - c. The decision of the Engineer regarding the acceptability of the proposed substitute product is final.
 - 3. Provide a written certification that, in making the substitution request, the Contractor:
 - a. Has determined that the substituted product will perform in substantially the same manner and result in the same ability to meet the specified performance as the specified product.
 - b. Will provide the same warranties and/or bonds for the substituted product as specified or as would be provided by the manufacturer of the specified product.
 - c. Will assume all responsibility to coordinate any modifications that may be necessary to incorporate the substituted product into the Project and will waive all claims for additional Work which may be necessary to incorporate the substituted product into the Project which may subsequently become apparent.
 - d. Will maintain the same time schedule as for the specified product.
- C. Pay engineering cost for review of substitutions.
 - 1. Cost for additional review time will be billed to the Owner by the Engineer for the actual hours required for the review and marking of Shop Drawings by Engineer and in accordance with the rates provided by the Engineer to the City of Lancaster.
 - 2. Cost for the additional review shall be paid to the Owner by the Contractor on a monthly basis.

1.11 WARRANTIES AND GUARANTEES

- A. Submit warranties and guarantees required by the Contract Documents with the Shop Drawings or Record Data.
- B. Provide additional copies for equipment and include this additional copy in the Operation and Maintenance Manuals. Refer to Section 01 78 23 "Operation and Maintenance Data."
- C. Provide a separate manual for warranties and guarantees.

1. Provide a log of all products for which warranties or guarantees are provided, and for all equipment. Index the log by Specification section number on forms provided by the Engineer.
2. Indicate the start date, warranty or guarantee period and the date upon which the warranty or guarantee expires for products or equipment for which a warranty or guarantee is required.
3. Indicate the date for the start of the correction period specified in the General Conditions for each piece of equipment and the date on which the specified correction period expires.
4. Provide a copy of the warranty or guarantee under a tab indexed to the log.

1.12 RESUBMISSION REQUIREMENTS

- A. Make all corrections or changes in the submittals required by the Engineer and resubmit until approved.
- B. For Shop Drawings:
 1. Revise initial drawings or data and resubmit as specified for the original submittal.
 2. Highlight in yellow those revisions which have been made in response to the first review by the Engineer.
 3. Highlight in blue any new revisions which have been made or additional details of information that has been added since the previous review by the Engineer.
- C. For Samples:
 1. Submit new Samples as required for the initial Sample.
 2. Remove Samples which have been rejected.
- D. For mock-ups:
 1. Construct a new mock-up as initially required.
 2. Dispose of mock-ups which have been rejected.
- E. Pay for excessive review of Shop Drawings.
 1. Excessive review of Shop Drawings is defined as any review required after the original review has been made and the first resubmittal has been checked to see that corrections have been made.
 2. Cost for additional review time will be billed to the Owner by the Engineer for the actual hours required for the review and marking of Shop Drawings by Engineer and in accordance with the rates listed in the Contract.
 3. Pay cost for the additional review to the Owner on a monthly basis as billed by the Owner.
 4. Need for more than one resubmission or any other delay of obtaining Engineer's review of submittals, will not entitle the Contractor to an extension of Contract Time. All costs associated with such delays shall be at the Contractor's expense.

1.13 ENGINEER'S DUTIES

- A. Review the submittals and return with reasonable promptness.
- B. Affix stamp, indicate approval, rejection, and the need for resubmittal.
- C. Distribute documents.

END OF SECTION

01 33 00.01 TABLE OF REQUIRED SUBMITTALS

1.00 GENERAL

1.01 REQUIRED SUBMITTALS

- A. The following tabulation list the submittals required for each submittal section. Each Section of the Specifications may provide more detailed information regarding the data to be provided for each product, materials, equipment or component required by the Specifications. Provide additional documentation as required by the Contract Documents in accordance with Section 01 33 00 "Submittal Procedures" and each Section of the Specifications and as reasonably requested by the Owner, Construction Manager and Engineer.
 - B. Incorporate each submittal in the Construction Schedule and Indicate the date each submittal is anticipated to be submitted.
-

SUBMITTAL SCHEDULE													
Spec Number	Description	Shop Drawing	Sample	Certified Test Report	Certification of Local Field Service	Extended Warranty	Extended Service Agreement	Certificate of Adequacy of Design	Certification of Applicator/Subcontractor	Record Data	Operation and Maintenance Manuals	Equipment Installation Report	Process Performance Bond
NCTCOG 5.8	Concrete	X		X									
09 91 00	Painting	X	X										
09 96 00.01	High-Performance Coatings	X	X										
22 05 19	Meters & Gauges for Plumbing Piping	X									X		
26 05 19	Low-Voltage Electrical Power Conductors and Cables			X						X	X		
26 05 26	Grounding and Bonding for Electrical Systems									X			
26 05 29	Hangers and Supports for Electrical Systems									X			
26 05 36	Cable Trays for Electrical Systems									X			
26 24 16.01	Panelboards	X									X		
26 27 26.01	Wiring Devices									X			
26 41 13	Lightning Protection for Structures	X		X							X		
32 01 29	Paving Repair								X	X			
NCTCOG 3.10.7	Hydro-Mulching									X			
33 12 16.13	Miscellaneous Valves	X									X		

Table of Required Submittals
LCS114S4 – 2.0 MG Elevated Storage Tank

01 33 00.01 - 2

SUBMITTAL SCHEDULE													
Spec Number	Description	Shop Drawing	Sample	Certified Test Report	Certification of Local Field Service	Extended Warranty	Extended Service Agreement	Certificate of Adequacy of Design	Certification of Applicator/Subcontractor	Record Data	Operation and Maintenance Manuals	Equipment Installation Report	Process Performance Bond
33 12 16.16	Air Release and Air and Vacuum Valves	X						X			X		
33 12 16.23	Gate Valves	X									X		
33 12 16.26	Butterfly Valves	X									X		
33 12 19	Water Utility Distribution Fire Hydrants	X									X		
33 16 19.13	Composite Elevated Water Utility Storage Tank	X	X	X					X	X	X		

END OF SECTION

01 42 16 DEFINITIONS

1.00 GENERAL

1.01 SPECIFICATION TERMINOLOGY

- A. "Engineer" or "Architect" means Freese and Nichols, Inc., Architects and Engineers, 1701 N. Market St., Suite 500, Dallas, Texas 75202, or its designated representative.
- B. "Furnish" means to supply, deliver and unload materials and equipment at the project site ready to install.
- C. "Install" means the operations at the project site including unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, training and similar operations required to prepare the materials and equipment for use, verify conformance with Contract Documents and prepare for acceptance and operation by the Owner.
- D. "Provide" means to furnish and install materials and equipment.
- E. "Perform" means to complete the operations necessary to comply with the Contract Documents.
- F. "Indicated" means graphic representations, notes, or schedules on drawings, or other requirements in Contract Documents. Words such as "shown", "noted", "scheduled", are used to help locate the reference. No limitation on the location is intended unless specifically noted.
- G. "Specified" means written representations in the bid documents or the technical specifications.
- H. "Regulation" means laws, statutes, ordinances, and lawful orders issued by authorities having jurisdiction, as well as, rules, conventions, and agreements within the construction industry that control performance of work, whether they are lawfully imposed by authorities having jurisdiction or not.
- I. "Installer" means an entity engaged by Contractor, either as an employee, subcontractor, or sub-subcontractor to install materials and/or equipment. Installers are to have successfully completed a minimum of five projects similar in size and scope to this project, have a minimum of 5 years' of experience in the installation of similar materials and equipment, and comply with the requirements of the authority having jurisdiction.
- J. "Manufacturer" means an entity engaged by Contractor, as a subcontractor, or sub-subcontractor to furnish materials and/or equipment. Manufacturers are to have a minimum of 5 years' experience in the manufacture of materials and equipment similar in size, capacity and scope to the specified materials and equipment.
- K. "Project site" means the space available to perform the work, either exclusively or in conjunction with others performing construction at the project site.
- L. "Testing laboratory" means an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report and interpret the results of those inspections or tests.

- M. "Listed" means equipment is included in a list published by a nationally recognized laboratory which makes periodic inspection of production of such equipment and states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.
- N. "Labeled" means equipment that embodies a valid label, symbol, or other identifying mark of a nationally recognized testing laboratory such as Underwriters Laboratories, Inc., and production is periodically inspected in accordance with nationally recognized standards or tests to determine safe use in a specified manner.
- O. "Certified" used in context with materials and equipment means the material and equipment has been tested and found by a nationally recognized testing laboratory to meet specification requirements, or nationally recognized standards if requirements are not specified, and is safe for use in the specified manner. Production of the equipment must be periodically inspected by a nationally recognized testing laboratory and the equipment must bear a label, tag, or other record of certification.
- P. "Certified" used in context with labor performance or ability to install materials and equipment means that the abilities of the proposed installer have been tested by a representative of the specified testing agency authorized to issue certificates of competency and has met the prescribed standards for certification.
- Q. "Certified" used in context with test reports, payment requests or other statements of fact means that the statements made on the document are a true statement as attested to by the certifying entity.

1.02 SPECIFICATION SENTENCE STRUCTURE

- A. Specifications are written in modified brief style. Requirements apply to all work of the same kind, class, and type even though the word "all" is not stated.
- B. Simple imperative sentence structure is used which places a verb as the first word in the sentence. It is understood that the words "furnish", "install", "provide", or similar words include the meaning of the phrase "The Contractor shall..." before these words.
- C. It is understood that the words "directed", "designated", "requested", "authorized", "approved", "selected", or similar words include the meaning of the phrase "by the Engineer" after these words unless otherwise stated. Use of these words does not extend the Engineer's responsibility for construction supervision or responsibilities beyond those defined in the General Conditions.
- D. "At no additional cost to Owner", "With no extra compensation to Contractor", "At Contractor's own expense", or similar words mean that the Contractor will perform or provide specified operation of work without any increase in the Contract Amount. It is understood that the cost for performing all work is included in the amount bid and will be performed at no additional cost to the Owner unless specifically stated otherwise.

1.03 DOCUMENT ORGANIZATION

- A. The contract requirements described in the General Specifications, the NCTCOG Standard Specifications for Public Works Construction, Third Edition 1998, Special Conditions and Division 01 apply to each and all specification sections unless specifically noted otherwise.

- B. Organization of Contract Documents is not intended to control or to lessen the responsibility of the Contractor when dividing work among subcontractors, or to establish the extent of work to be performed by any trade, subcontractor or vendor. Specifications or details do not need to be indicated or specified in each specification or drawing. Items shown in the contract documents are applicable regardless of location in the Contract Documents.
- C. Standard paragraph titles and other identifications of subject matter in the specifications are intended to aid in locating and recognizing various requirements of the specifications. Titles do not define, limit, or otherwise restrict specification text.
- D. Capitalizing words in the text does not mean that these words convey special or unique meanings or have precedence over other parts of the Contract Documents. Specification text governs over titling and it is understood that the specification is to be interpreted as a whole.
- E. Drawings and specifications do not indicate or describe all of the work required to complete the project. Additional details required for the correct installation of selected products are to be provided by the Contractor and coordinated with the Engineer. Provide any work, materials or equipment required for a complete and functional system even if they are not detailed or specified.

1.04 INTERPRETATIONS OF DOCUMENTS

- A. Comply with the most stringent requirements where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, unless Contract Documents indicate otherwise.
 - 1. Quantity or quality level shown or indicated shall be minimum to be provided or performed in every instance.
 - 2. Actual installation may comply exactly with minimum quality indicated, or it may exceed that minimum within reasonable limits.
 - 3. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for context of requirements.
 - 4. Refer instances of uncertainty to the Engineer for a decision before proceeding.
- B. Provide materials and equipment comparable in quality to similar materials and equipment incorporated in the project or as required to meet the minimum requirements of the application if the materials and equipment are shown in the drawings but are not included in the specifications.

1.05 REFERENCE STANDARDS

- A. Comply with applicable construction industry standards as if bound or copied directly into the Contract Documents regardless of lack of reference in the Contract Documents. Apply provisions of the Contract Documents where Contract Documents include more stringent requirements than the referenced standards.
 - 1. Standards referenced directly in the Contract Documents take precedence over standards that are not referenced but recognized in the construction industry as applicable.

2. Comply with standards not referenced but recognized in the construction industry as applicable for performance of the work except as otherwise limited by the Contract Documents. The Engineer determines whether code or standard is applicable, or which of several are applicable.
- B. Consider a referenced standard to be the latest edition with supplements or amendments when a standard is referred to in an individual specification section but is not listed by title and date.
- C. Trade association names and title of general standards are frequently abbreviated. Acronyms or abbreviations used in the Contract Documents mean the recognized name of trade association, standards generating organization, authority having jurisdiction, or other entity applicable in the context of the Contract Documents. Refer to "Encyclopedia of Associations," published by Gale Research Company.
- D. Make copies of reference standards available as requested by Engineer or Owner.

1.06 SUBSTITUTIONS AND EQUAL PRODUCTS

- A. Provide materials and equipment manufactured by the entities specifically listed in each technical specification section. Submit a Contractor's Modification Request per Section 01 33 00 "Submittal Procedures" for substitution of materials and equipment of manufacturers not specifically listed or for materials and equipment that does not strictly comply with the Contract Documents.

1.07 SUBSTITUTIONS AND EQUAL PRODUCTS

- A. Contractor may provide "equal" products manufactured by manufacturers other than those specifically listed in the technical specification section unless it is specifically stated that only the materials and equipment of the specified manufacturers shall be provided. Provide Submittals for proposed "equal" non-specified products per Section 01 33 00 "Submittal Procedures" for any materials or equipment not specifically listed. Submit a Contractor's Modification Request for substitution of materials and equipment of other manufacturers or for materials and equipment that does not strictly comply with the Contract Documents. A Field Order or Change Order will be issued if the contract modification is approved.

END OF SECTION

01 57 00 TEMPORARY CONTROLS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Provide labor, materials, equipment and incidentals necessary to construct temporary facilities to provide and maintain control over environmental conditions at the Site. Remove temporary facilities when no longer needed.
- B. Construct temporary impounding works, channels, diversions, furnishing and operation of pumps, installing piping and fittings, and other construction for control of conditions at the Site. Remove temporary controls at the end of the Project.
- C. Provide a Storm Water Pollution Prevention Plan in accordance with TCEQ General Permit TXR150000, file required legal notices and obtain required permits prior to beginning any construction activity.
- D. Provide labor, materials, equipment, and incidentals necessary to prevent storm water pollution for the duration of the Project. Provide and maintain erosion and sediment control structures as required to prevent sediment and other pollutants from the Site from entering any storm water system, including open channels. Remove pollution control structures when no longer required to prevent storm water pollution.
- E. Cost for Temporary Controls as described in this Section and provided by Suppliers and Subcontractors as described in this Section are to be included in the Cost of Work.

1.02 QUALITY ASSURANCE

- A. Construct and maintain temporary controls with adequate workmanship using durable materials to provide effective environmental management systems meeting the requirements of the Contract Documents and requiring minimal maintenance that will disrupt construction activities while providing adequate protection of the environment.
- B. Periodically inspect systems to determine that they are meeting the requirements of the Contract Documents.

1.03 SUBMITTALS

- A. Provide copies of notices, records and reports required by the Contract Documents or regulations as Record Data in accordance with Section 01 33 00 "Submittal Procedures."
- B. Provide documents requiring approval by the Owner or Engineer as Shop Drawings in accordance with Section 01 33 00 "Submittal Procedures."

1.04 STANDARDS

- A. Provide a storm water pollution prevention plan that complies with Local, State, and Federal requirements. Comply with all requirements of the Texas Commission on Environmental Quality General Permit (TXR150000) for storm water discharges from construction activities under the Texas Pollutant Discharge Elimination System (TPDES) program.

- B. Perform Work to comply with "Best Practice" as established by the North Central Texas Council Of Governments (NCTCOG) integrated Storm Water Management (iSWM) Design Manual for Construction or the local agency of jurisdiction.

1.05 PERMITS

- A. Submit the following to the TCEQ and the Operator of any Municipal Separate Storm Sewer System (MS4) receiving storm water discharges from the Site:
 - 1. Notice of Intent (NOI) at least 48 hours prior to beginning construction activity. Construction activity may commence 24 hours after the submittal of an electronic NOI.
 - 2. Notice of Change (NOC) letter when relevant facts or incorrect information was submitted in the NOI, or if relevant information in the NOI changes during the course of construction activity.
 - 3. Notice of Termination (NOT) when the construction project has been completed and stabilized.
- B. Post a copy of the NOI at the Site in a location where it is readily available for viewing by the general public and Local, State, and Federal authorities prior to starting construction activities and maintain the posting until completion of the construction activities.
- C. Maintain copies of a schedule of major construction activities, inspection reports, and revision documentation with the storm water pollution prevention plan (SWPPP) required under the TPDES General Permit (TXR150000) for Storm Water Discharges from Construction Activities for all projects.

1.06 STORM WATER POLLUTION CONTROL

- A. Comply with the current requirements of TPDES General Permit No. TXR15000 (General Storm Water Permit) set forth by the Texas Commission on Environmental Quality for the duration of the Project:
 - 1. Develop a Storm Water Pollution Prevention Plan meeting all requirements of the General Storm Water Permit.
 - 2. Submit of a Notice of Intent to the Texas Commission on Environmental Quality.
 - 3. Develop and implement appropriate Best Management Practices as established by local agencies of jurisdiction.
 - 4. Provide all monitoring and/or sampling required for reporting to the Texas Commission on Environmental Quality.
 - 5. Submit reports to the Texas Commission on Environmental Quality as required as a condition of the permit.
 - 6. Submit copies of the reports to the Engineer as Record Data in accordance with Section 01 33 00 "Submittal Procedures."
 - 7. Retain copies of these documents at the Site at all times for review and inspection by the Owner or regulatory agencies. Post a copy of the permit as required by regulations.
 - 8. Pay all costs associated with complying with the provisions of the General Storm Water Permit. Assume solely responsible for implementing, updating, and modifying the

General Storm Water Permit per regulatory requirements the Storm Water Pollution Prevention Plan and Best Management Practices.

- B. Use forms required by the Texas Commission on Environmental Quality to file the Notice of Intent. Submit the Notice of Intent at least 2 days prior to the start of construction. Develop the Storm Water Pollution Prevention Plan prior to submitting the Notice of Intent. Provide draft copies of the Notice of Intent, Storm Water Pollution Prevention Plan, and any other pertinent Texas Commission on Environmental Quality submittal documents to Owner for review prior to submittal to the Texas Commission on Environmental Quality.
- C. Return any property disturbed by construction activities to either specified conditions or pre-construction conditions as set forth in the Contract Documents. Provide an overall erosion and sedimentation control system that will protect all undisturbed areas and soil stockpiles/spoil areas. Implement appropriate Best Management Practices and techniques to control erosion and sedimentation and maintain these practices and techniques in effective operating condition during construction. Permanently stabilize exposed soil and fill as soon as practical during the Work.
- D. Assume sole responsibility for the means, methods, techniques, sequences, and procedures for furnishing, installing, and maintaining erosion and sedimentation control structures and procedures and overall compliance with the General Storm Water Permit. Modify the system as required to effectively control erosion and sediment.
- E. Retain copies of reports required by the General Storm Water Permit for 3 years from date of final completion.

1.07 POLLUTION CONTROL

- A. Prevent the contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations. Provide adequate measures to prevent the creation of noxious air-borne pollutants. Prevent dispersal of pollutants into the atmosphere. Do not dump or otherwise discharge noxious or harmful fluids into drains or sewers, nor allow noxious liquids to contaminate public waterways in any manner.
- B. Provide equipment and personnel and perform emergency measures necessary to contain any spillage.
 - 1. Contain chemicals in protective areas and do not dump on soil. Dispose of such materials at off-site locations in an acceptable manner.
 - 2. Excavate contaminated soil and dispose at an off-site location if contamination of the soil does occur. Fill resulting excavations with suitable backfill and compact to the density of the surrounding undisturbed soil.
 - 3. Provide documentation to the Owner which states the nature and strength of the contaminant, method of disposal, and the location of the disposal site.
 - 4. Comply with local, State and Federal regulations regarding the disposal of pollutants.
- C. Groundwater or run-off water which has come into contact with noxious chemicals, sludge, or sludge-contaminated soil is considered contaminated. Contaminated water must not be allowed to enter streams or water courses, leave the Site in a non-contained form or enter non-contaminated areas of the Site.

1. Pump contaminated water to holding ponds constructed by the Contractor for this purpose, or discharge to areas on the interior of the Site, as designated by the Engineer.
2. Construct temporary earthen dikes or take other precautions and measures as required to contain the contaminated water and pump to a designated storage area.
3. Wash any equipment used for handling contaminated water or soil within contaminated areas three times with uncontaminated water prior to using such equipment in an uncontaminated area. Dispose of wash water used to wash such equipment as contaminated water.

1.08 EARTH CONTROL

- A. Remove excess soil, spoil materials and other earth not required for backfill at the time of generation. Control stockpiled materials to eliminate interference with Contractor and Owner's operations.
- B. Dispose of excess earth off the Site. Pay cost for disposal unless otherwise noted. Provide written approval by the property owner for all disposal on private property, and approval by the Owner if such disposal affects the use of Site or other easements.

1.09 MANAGEMENT OF WATER

- A. Manage water resulting from rains or ground water at the Site. Maintain trenches and excavations free of water at all times.
- B. Lower the water table in the construction area by acceptable means if necessary to maintain a dry and workable condition at all times. Provide drains, sumps, casings, well points, and other water control devices as necessary to remove excess water.
- C. Provide continuous operation of water management actions. Maintain standby equipment to provide proper and continuous operation for water management.
- D. Ensure that water drainage does not damage adjacent property. Divert water into the same natural watercourse in which its headwaters are located, or other natural stream or waterway as approved by the Owner. Assume responsibility for the discharge of water from the Site.
- E. Remove the temporary construction and restore the Site in a manner acceptable to the Engineer and to match surrounding material at the conclusion of the Work.

2.00 PRODUCTS

2.01 MATERIALS

- A. Provide materials meeting regulatory requirements.

3.00 EXECUTION

3.01 CONSTRUCTING, MAINTAINING AND REMOVING TEMPORARY CONTROLS

- A. Construct temporary controls in accordance with regulatory requirements.

- B. Maintain controls in accordance with regulatory requirements where applicable, or in accordance with the requirements of the Contract Documents.
- C. Remove temporary control when no longer required, but before the Project is complete. Correct any damage or pollution that occurs as the result of removing controls before the point where they are no longer required.

END OF SECTION

01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Comply with requirements of the General Conditions and specified administrative procedures in closing out the Construction Contract.

1.02 SUBMITTALS

- A. Submit affidavits and releases on forms provided by the Engineer.

1.03 SUBSTANTIAL COMPLETION

- A. Submit written notification that the Work or designated portion of the Work is substantially complete to the Engineer when the Work is considered to be substantially complete per the General Conditions. Include a list of the items remaining to be completed or corrected before the Project will be considered to be complete.
- B. Engineer shall visit the Site to observe the Work within a reasonable time after notification is received to determine the status of completion.
- C. Engineer shall issue notification to the Contractor that the Work is either substantially complete or that additional Work must be performed before the Project may be considered substantially complete.
 - 1. Engineer shall notify the Contractor in writing of items that must be completed before the Project can be considered substantially complete.
 - a. Correct the noted deficiencies in the Work.
 - b. Issue a second written notice with a revised list of deficiencies when Work has been completed.
 - c. Engineer shall revisit the Site and the procedure shall begin again.
 - 2. Engineer shall issue a Certificate of Substantial Completion to the Owner when the Project is considered to be substantially complete. Certificate shall include a tentative list of items to be corrected before final payment.
 - a. Owner will review and revise the list of items and notify the Engineer of any objections or other items that are to be included in the list.
 - b. Engineer shall prepare and send to the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be corrected or completed.
 - c. Review the list and notify the Engineer in writing of any objections within 10 days of receipt of the Certificate of Substantial Completion.

1.04 FINAL INSPECTION

- A. Submit written certification in the form provided by the Engineer when the Project is complete and:

1. Contract Documents have been reviewed.
 2. Work has been completed in compliance with the Contract Documents.
 3. Equipment and systems have been tested per Contract Documents and are fully operational.
 4. Final Operations and Maintenance Manuals have been provided to the Owner and all operator training has been completed.
 5. Specified spare parts and special tools have been provided.
 6. Work is complete and ready for final inspection.
- B. Engineer shall make an inspection with the Owner and appropriate regulatory agencies to determine the status of completeness within a reasonable time after the receipt of the Certificate.
- C. Engineer shall issue notice that the Project is complete or notify the Contractor that Work is not complete or is defective.
1. Submit the request for final payment with Closeout submittals described in Paragraph 1.07 if notified that the Project is complete and the Work is acceptable.
 2. Upon receipt of notification from the Engineer that Work is incomplete or defective, take immediate steps to remedy the stated deficiencies. Send a second certification to the Engineer when Work has been completed or corrected.
 3. Engineer shall re-visit the Site and the procedure will begin again.

1.05 REINSPECTION FEES

- A. Pay fees to the Owner to compensate the Engineer for reinspection of the Work required by the failure of the Work to comply with the claims of status of completion made by the Contractor.
- B. Owner may withhold the amount of these fees from the Contractor's final payment.
- C. Cost for additional inspections will be billed to the Owner by the Engineer for the actual hours required for the reinspection and preparation of related reports in accordance with the rates provided in the Supplemental Conditions.

1.06 CLOSEOUT SUBMITTALS TO THE ENGINEER

- A. Record Drawings per Section 01 31 00 "Project Coordination."
- B. Keys and keying schedule.
- C. Warranties and bonds.
- D. Evidence of payment or release of liens on the forms provided by the Engineer and as required by the General Conditions.
- E. Consent from Surety to Final Payment.
- F. Equipment Installation Reports on equipment.
- G. Shop Drawings, Record Data, Operations and Maintenance Manuals, and other submittals as required by the Contract Documents.

- H. Specified spare parts and special tools.
- I. Certificates of Occupancy, operating certificates, or other similar releases required to allow the Owner unrestricted use of the Work and access to services and utilities.
- J. Evidence of final, continuing insurance, and bond coverage as required by the Contract Documents.
- K. Final Photographs per Section 01 32 33 "Photographic Documentation."

1.07 FINAL APPLICATION FOR PAYMENT REQUEST

- A. Submit a preliminary final Application for Payment. This application is to include adjustments to the Contract Price for:
 - 1. Approved Change Orders.
 - 2. Allowances not previously adjusted by Change Order.
 - 3. Unit prices.
 - 4. Deductions for defective Work that has been accepted by the Owner.
 - 5. Penalties and bonuses.
 - 6. Deductions for liquidated damages.
 - 7. Deductions for reinspection payments per Paragraph 1.05.
 - 8. Other adjustments.
- B. Engineer shall prepare a final Change Order, reflecting the approved adjustments to the contract amount which have not been covered by previously approved Change Orders.
- C. Submit the final Application for Payment per the General Conditions, including the final Change Order.

1.08 TRANSFER OF UTILITIES

- A. Transfer utilities to the Owner when the Certificate of Substantial Completion has been issued, final cleaning has been completed per Section 01 74 23 "Final Cleaning," and the Work has been occupied by the Owner.
- B. Submit final meter readings for utilities and similar data as of the date the Owner occupied the Work.

1.09 WARRANTIES, BONDS, AND SERVICES AGREEMENTS

- A. Provide warranties, bonds, and service agreements required by Section 01 33 00 "Submittal Procedures" or by the individual Sections of the Specifications.
- B. The date for the start of warranties, bonds, and service agreements is established per the General Conditions.
- C. Compile warranties, bonds, and service agreements and review these documents for compliance with the Contract Documents.
 - 1. Each document is to be signed by the respective Supplier or Subcontractor.

2. Each document is to include:
 - a. The product or work item description.
 - b. The firm, with the name of the principal, address, and telephone number.
 - c. Scope of warranty, bond or services agreement.
 - d. Date, duration, and expiration date for each warranty bond and service agreement.
 - e. Procedures to be followed in the event of a failure.
 - f. Specific instances that might invalidate the warranty or bond.
- D. Submit two copies of each document to the Engineer for review and transmittal to the Owner.
 1. Submit duplicate sets.
 2. Documents are to be submitted on 8-1/2 x 11 paper, punched for a standard three-ring binder.
 3. Submit each set in a commercial quality three-ring binder with a durable and cleanable plastic cover. The title "Warranties, Bonds, and Services Agreements", the Project name and the name of the Contractor are to be typed and affixed to the cover.
- E. Submit warranties, bonds and services agreements:
 1. At the time of final completion and before final payment.
 2. Within 10 days after inspection and acceptance for equipment or components placed in service during the progress of construction.

1.10 CLAIMS AND DISPUTES

- A. Claims and disputes must be resolved prior to recommendations of final Application for Payment. Acceptance and final payment by the Contractor will indicate that any outstanding claims or disputed issues have been resolved to the full satisfaction of the Contractor.

END OF SECTION

01 74 23 FINAL CLEANING

1.00 GENERAL

1.01 This Section specifies administrative and procedural requirements for final cleaning at Substantial Completion.

1.02 WORK INCLUDED

- A. Perform a thorough cleaning of the Site, buildings, or other structures prior to Owner occupancy of the buildings, and prior to Final Completion. Leave the Project clean and ready for occupancy.

1.03 SUBMITTALS

- A. Provide data for maintenance per Section 01 78 23 "Operation and Maintenance Data."

1.04 QUALITY CONTROL

- A. Use experienced workmen or professional cleaners for final cleaning.

2.00 PRODUCTS

2.01 MATERIALS

- A. Furnish the labor and products needed for cleaning and finishing as recommended by the manufacturer of the surface material being cleaned.
- B. Use cleaning products only on the surfaces recommended by the Supplier.
- C. Use only those cleaning products which will not create hazards to health or property and which will not damage surfaces.

3.00 EXECUTION

3.01 FINAL CLEANING

- A. Thoroughly clean the entire Site and make ready for occupancy.
 - 1. Remove construction debris, boxes, and trash from the Site.
 - 2. Remove construction storage sheds and field offices.
 - 3. Restore grade to match surrounding condition and remove excess dirt.
 - 4. Sweep all drives and parking lots clean of dirt and debris. Use water truck or hose down paved site to like new appearance.
- B. Clean floors and inspect for damage.
 - 1. Remove oil, grease, paint drippings, and other contaminants from floors, then mop repeatedly until thoroughly clean. Replace damaged flooring.

2. Clean resilient flooring with an approved cleaner and provide one coat liquid floor polish as recommended by the Supplier. Polish to a buffed appearance with powered floor buffer.
 3. Vacuum all carpets with powered floor sweeper to remove dirt and dust. Remove glue or other substances from nap of carpet.
- C. Clean and polish inside and outside glass surfaces. Wash with window cleaner and water, apply a coat of high quality glass polish and wipe clean. Do not scratch or otherwise mar glass surfaces.
- D. Clean wall surfaces to remove dirt or scuff marks. Remove excess adhesive along top edges of wall base. Remove adhesive from surfaces of vinyl wall coverings.
- E. Align tile to fit properly in grid and replace cracked or damaged tile. Remove smear marks and other dirt from tile and clean surface of grid system.
- F. Spot paint nicks and other damage. If spot-painting does not blend into the existing color and texture of the surrounding surfaces, repaint wall from inside corner to inside corner. Touch up damaged surfaces on factory finished equipment using special paint furnished by the manufacturer.
- G. Clean plumbing fixtures, valves, and trim. Clean toilet seats and covers. Remove labels and adhesive from fixtures. Remove floor drains and clean baskets or buckets. Polish strainers and exposed chrome or brass.
- H. Remove dirt, oil, grease, dust and other contaminants from floors, equipment and apparatus in mechanical and electrical rooms with vacuum.
- I. Clean and polish ceramic tile floors and wall surfaces to remove mildew or other stains. Tuck point defective joints.
- J. Inspect exterior painted surfaces. Spot paint any damaged surfaces.
- K. Clean permanent filters and replace disposable filters on heating, ventilating, and air conditioning systems. Clean ducts, blowers, and coils if units were operated without filters during construction.
- L. Clean roof areas of debris; flush roof drainage systems with water until clear.
- M. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds.
- N. Clean and polish all electrical equipment and exposed conduits. Remove paint overspray. Provide a blemish free appearance on all exposed equipment and conduits.

END OF SECTION

01 78 23 OPERATION AND MAINTENANCE DATA

1.00 GENERAL

1.01 WORK INCLUDED

- A. Prepare a complete and detailed Operation and Maintenance Manual for each type and model of equipment or product furnished and installed under this Contract.
- B. Prepare the manuals in the form of an instruction manual for the Owner.
- C. Provide complete and detailed information specifically for the products or systems provided for this Project. Include the information required to operate and maintain the product or system.
- D. Manuals are to be in addition to any information packed with or attached to the product when delivered. This information is to be taken from the product and provided as an attachment to the manual.
- E. Cost for O&M Manuals provided by Suppliers and Subcontractors as described in this Section are to be included in the Cost of Work. Contractor efforts are included in the Contractor's fee for Construction Phase Services.

1.02 SUBMITTALS

- A. Submit manuals in accordance with Section 01 33 00 "Submittal Procedures." Attach to each manual a copy of the Operation and Maintenance Manual Review Form as shown in Section 01 31 13.13 "Forms" with pertinent information completed.

1.03 GUARANTEES

- A. Provide copies of the manufacturer's warranties, guarantees, or service agreements in accordance with Section 01 70 00 "Execution and Closeout Requirements."

2.00 PRODUCTS

2.01 MATERIALS

- A. Print manuals on heavy, first quality paper.
 - 1. Paper shall be 8-1/2 x 11 paper.
 - a. Reduce drawings and diagrams to 8-1/2 x 11 paper size.
 - b. When reduction is not practical, fold drawings and place each separately in a clear, super heavy weight, top loading polypropylene sheet protector designed for ring binder use. Provide a typed identification label on each sheet protector.
 - 2. Punch paper for standard three-ring binders.
- B. Place manuals in Wilson Jones 385 Line D-Ring Dublock Presentation Binders.
 - 1. Binders are to have clear front, back, and spine covers.
 - 2. Sheet lifters are to be provided.

3. Minimum size is 2-inch capacity. Maximum size is 3-inch capacity.
- C. Provide tab indexes for each section of the manual.
 1. Indexes are to be constructed of heavy-duty paper with a reinforced binding edge and punched with 9/32-inch holes to fit the binders.
 2. Index is to have clear insertable tabs for a typed insert.

2.02 ELECTRONIC MANUAL FORMAT

- A. Manual contents to be provided on compact disc (CD).
 1. Minimum CD storage capacity is 700 MB.
 2. CD to have read/write capability.
- B. Provide individual electronic files for each manual.
 1. Maximum file size is 5MB. If manual is greater than maximum allowable file size, provide individual files for each major section of manual.
 2. Acceptable file types for written documents are Portable Document File (PDF) or Microsoft Word formats. Acceptable file types for drawing files are PDF formats. All files shall be compatible with the latest software version available.
 3. Filename shall identify the plant site, plant area, equipment manufacturer, and date equipment placed in service, i.e. WWTP-PC1-Manufacturer-200503.pdf.
 4. Each electronic file shall contain a table of contents at the beginning of the file which includes hypertext links or bookmarks to navigate the file contents per section/chapter.
 5. Scanned images of written documents are not acceptable. Document must allow character selection. Text within a file shall be transferable to other documents.
 6. Drawing files shall have the ability to turn on/off drawing layers within the file.
 7. Submit a preliminary version of the electronic format of the manual for review. Upon approval of the preliminary submittal, the Contractor shall provide three copies of the electronic manual to the Owner.

3.00 EXECUTION

3.01 MANUAL ORGANIZATION AND CONTENTS

- A. Provide a Table of Contents listing each section of the manual for each product or system.
 1. Identify each product or system using the nomenclature shown in the Contract Documents.
 2. Assign a number and letter to each section in the manual.
 - a. Assign a number to each product or system. The number is to correspond to the Owner's equipment numbering system or other system designated by the Engineer.
 - b. A cross reference is to be provided for the Owner's numbering system and designations for equipment indicated in the Contract Documents.

- c. The letter assigned will represent the part of the manual, consistent with the manual contents as required by Paragraphs 3.02, 3.03, and 3.04.
- 3. Provide index tabs for each section in the manual.
- 4. The designation on each index tab is to correspond to the number and letter assigned in the Table of Contents.
- B. Include only the information that pertains to the product described. Annotate each sheet to:
 - 1. Clearly identify the specific product or component installed.
 - 2. Clearly identify the data applicable to the installation.
 - 3. Delete reference to inapplicable information.
- C. Supplement manual information with drawings as necessary to clearly illustrate relations of component parts of equipment and systems, and control and flow diagrams.
- D. Identify each manual by placing a printed cover sheet in the front cover of the binder and as the first page in the manual. The first page is to be placed in a clear polypropylene sheet protector. The information on first page and the cover page are to include:
 - 1. Name of Owner.
 - 2. Project name.
 - 3. Volume number.
 - 4. The Table of Contents for that volume.
- E. Insert the Table of Contents into the spine of each manual.
- F. Manuals for several products or systems may be provided in the same binder.
 - 1. Sections for each product or system must be included in the same binder.
 - 2. Sections must be in numerical order from volume to volume.
- G. Correlate the data into related groups when multiple binders are used.
- H. Fill binders to only three-fourths of its indicated capacity to allow for addition of materials to each binder by the Owner.

3.02 EQUIPMENT AND SYSTEMS MANUAL CONTENT

- A. Manual shall provide the following information:
 - 1. A description of the unit and component parts.
 - 2. Operating instructions for startup, normal operations, regulation, control, shutdown, emergency conditions, and limiting operating conditions.
 - 3. Maintenance instructions including assembly, installation, alignment, adjustment, and checking instructions.
 - 4. Lubrication schedule and lubrication procedures. Include a cross reference for recommended lubrication products.
 - 5. Troubleshooting guide.

6. Schedule of routine maintenance requirements.
7. Description of sequence of operation by the control manufacturer.
8. Warnings for detrimental maintenance practices.
9. Parts lists including:
 - a. Part numbers for ordering new parts.
 - b. Assembly illustrations showing an exploded view of the complex parts of the product.
 - c. Predicted life of parts subject to wear.
 - d. List of the manufacturer's recommended spare parts, current prices with effective date and number of parts recommended for storage.
 - e. Directory of a local source of supply for parts with company name, address, and telephone number.
 - f. Complete nomenclature and list of commercial replacement parts.
10. Outline, cross-section and assembly drawings, engineering data, test data, and performance curves.
11. Control schematics and point to point wiring diagrams prepared for field installation, including circuit directories of panel boards and terminal strips.
12. List of identification nameplates installed on equipment and valve identification per the Contract Documents.
13. Other information as may be required by the individual Sections of the Specifications.

3.03 ELECTRICAL AND ELECTRONICS SYSTEMS MANUAL

- A. Manual shall provide the following information:
1. A description of the systems and component parts.
 2. Control schematics and point to point wiring diagrams prepared for field installation. Include circuit directories of panel boards and terminal strips and as installed color coded wiring diagrams.
 3. Operating procedures, maintenance procedures, and the manufacturer's printed operating and maintenance instructions.
 4. List of the manufacturer's recommended spare parts, current prices with effective date, and number of parts recommended for storage.
 5. Other information as may be required by the individual Sections of the Specifications.

3.04 ARCHITECTURAL PRODUCTS MANUAL

- A. Manual shall provide the following information:
1. Information required for ordering replacement products.
 2. Instructions for care and maintenance.

3. List of the manufacturer's recommended lubricants.
 4. The manufacturer's recommendations for types of cleaning agents and methods.
 5. Cautions against cleaning agents and methods that are detrimental to the product.
 6. Recommended maintenance and cleaning schedule.
- B. Final balancing reports for mechanical systems.
 - C. Other information as may be required by the individual Sections of the Specifications.

3.05 LIST OF SERVICE ORGANIZATIONS

- A. Provide a directory of authorized service organizations with company name, address, telephone number, e-mail address and the contact person for warranty repair.
-

END OF SECTION

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK
CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 09 FINISHES

09 91 00 Painting
09 96 00.01 High-Performance Coatings



J. R. Baddaker 10-12-2012

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

09 91 00 PAINTING

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment, and incidentals necessary to paint surfaces attached to or related to buildings and ancillary components. Refer to Section 09 96 00.01, HIGH PERFORMANCE COATINGS to determine painting requirements for plant equipment, elevated tank bowl, and other structures.
- B. Every surface, product or exposed material of every description shall receive no less than three (3) coats of paint and have a dry film thickness not less than (5) mils., except non-ferrous metals or factory finished surfaces, surfaces where a specific painting system calls for different coverage, or as otherwise specifically scheduled not to be painted. Where painting system is not specifically listed in the paint schedule, provide a three (3) coat paint finish using paint system selected by the Architect.
- C. Paint mechanical equipment, such as air handlers, exhaust fans, sheetmetal ductwork, or other equipment when exposed to view in rooms other than mechanical or boiler rooms, or not otherwise concealed by ceilings, chases or other surfaces. Paint pumps and motors installed at all locations. Paint registers, grilles, louvers, pipe and pipe coverings exposed to view in any area other than mechanical rooms.
- D. Paint mechanical equipment exposed to the outside of the building and not otherwise factory finished, including galvanized or aluminized surfaces exposed to outside of building.
- E. Paint all conduit, junction or pull boxes in all locations exposed to view, except for mechanical rooms, boiler rooms, electrical rooms. Conduit or raceway systems concealed inside chases or above ceilings do not need to be painted.
- F. Except in mechanical rooms, boiler rooms, or electrical rooms, paint exposed portions of electrical panelboards, regardless of factory finish, to match surrounding wall surfaces.
- G. Paint galvanized steel flashings, facias, vent stacks, housings and other ferrous sheet metals at roofs or above roof surfaces. Where parapets conceal such surfaces, painting is not required.
- H. Concealed back surfaces of wood cabinets and other millwork shall be primed before installation. Prime back sides of wood trim, mouldings, and base before installing to walls.
- I. Do **NOT** paint any surface that is specifically noted not to be painted, as well as the following surfaces:
 - 1. Factory finishes on metal equipment or furnishings, such as metal lockers or toilet partitions.
 - 2. Roof membranes
 - 3. Stainless steel, aluminum or copper flashings at roof surfaces.
 - 4. Exposed concrete floors, unless noted to receive a painted finish; concrete sidewalks, curbs & gutters and parking lots, except for parking stalls, fire lanes, signage or specifically noted markings.
 - 5. Acoustical ceilings or suspension systems
- J. It is **NOT** necessary to paint the following:

1. Wall surfaces which will be covered completely by the installation of other finished materials, such as alcoves for metal lockers, walls scheduled to receive ceramic tile, and wall surfaces where cabinets having backs are to be installed.
2. Surfaces which will be covered by additional construction, such as backsides of concrete wall panels where gypsum wall board is to be installed.

1.02 QUALITY ASSURANCE

A. ACCEPTABLE MANUFACTURERS

Products of the following manufacturers which meet the specification shall be acceptable:

1. Benjamin Moore
2. Cook
3. Devoe
4. Jones-Blair
5. Glidden
6. Pittsburg
7. Pratt-Lambert
8. Sherwin Williams
9. Tnemec

B. CERTIFICATION

1. The paint shall be the manufacturer's best quality product. Certification of paint grades shall be submitted.
2. Provide certifications that any paint product used on this project contains no mercury. Paint used on the interior of the building shall contain no mildewcide, pesticide or more than 0.06 percent lead.

1.03 SUBMITTALS

Submittals shall be in accordance with Section 01 33 00, SUBMITTALS and shall include:

- A. Schedule showing each paint surface correlated with the paint system to be used on each surface
- B. Provide a 8" x 11" sample of each color selected for this project
- C. Product data sheets for each paint product, listing VOC contents
- D. Color charts for each paint type
- E. Certification of paint grade and quality
- F. Material Safety Data Sheets (MSDS)
- G. Scaled architectural rendering of both Lancaster Tank logos

1.04 STANDARDS

The applicable provisions of the following standards shall apply as if written here in their entirety:

A. American Society of Testing and materials (ASTM) Standards:

ASTM D234	Raw Linseed Oil
ASTM D360	Shellac Varnishes
ASTM D362	Industrial Grade Toluene

B. Steel Structures Painting Council (SSPC) Publications:

SSPC	A Guide to Safety in Paint Application
SSPC SP1	Solvent Cleaning
SSPC SP2	Hand Tool Cleaning
SSPC SP3	Power Tool Cleaning

1.05 DELIVERY AND STORAGE

- A. Deliver materials in the original containers with labels intact and seals unbroken. Labels will contain the manufacturer's name, brand, lot or batch number, color, quantity, and warnings or special instructions.
- B. Storage space will be designated for painting materials and tools. The storage space shall be well ventilated and shall be maintained between the temperatures of 45 and 95 degrees F. Protect the entire floor surface from damage or spilled paint. Keep paint containers covered at all times. Provide adequate safeguards to prevent fires and maintain storage room in clean condition.
- C. Upon leaving the storage area, clean spilled paint and remove empty containers and construction debris and restore room to finish condition.

1.06 JOB CONDITIONS

- A. Inspect all surfaces to be painted. Notify Contractor, who shall correct any condition that will not permit a first class paint application. Beginning painting indicates acceptance of surfaces as satisfactory. Engineer's approval is required prior to beginning any painting.
- B. Interior painting shall not begin until masonry and plaster surfaces are thoroughly cured and dry. The temperatures of spaces in the building to be painted shall be maintained above 50 degrees F and kept dry. Specific ambient conditions and humidity as recommended by the manufacturer shall be maintained during the application of paints.
- C. Exterior painting shall not be performed in rainy, damp or frosty weather, or until surface is thoroughly dry.
- D. Interior areas to be painted shall be free of trash and debris. The entire space shall be broom cleaned. Unnecessary materials, tools, debris and equipment shall be removed prior to beginning painting. Do not apply any paint product in a space where other trades are working or where operations are being performed which will create dust or other air borne contaminants.
- E. Prepare a color schedule listing paint type, colors and locations for each type of paint. Do not order any materials until samples have been approved and the color schedule approved.
- F. Comply with Volatile Organic Compound (VOC) requirements of the Federal Clean Air Standards. Where a paint product exceeds the limits of these standards, submit an alternate product for consideration.
- G. Paints which contain lead in excess of 0.06 percent by weight of the total non-volatile content shall not be used. Paints containing zinc chromate or strontium chromate pigments shall not be used.
- H. Workers having access to areas being painted shall be informed of the contents of the applicable materials safety sheets (MSDS) and shall be informed of potential health and safety hazards and protective controls associated with the materials. Workers applying the

paints or coatings shall be instructed in the use and maintenance of aspirators and masks. Contractor shall provide adequate protection for all employees and assure that these protective devices are used.

- I. Generally calks and sealants shall be applied after surfaces are painted and shall be colored to match the surrounding paint color.

1.07 GUARANTEES

Paint and painting products shall be guaranteed in writing against defects in workmanship or materials for a period of two (2) years from the date of the Owner's acceptance. Defective materials shall be replaced at no additional cost to the Owner.

2.00 PRODUCTS

2.01 MATERIALS

- A. GENERAL: Materials shall be new, fresh and mixed and applied in strict accordance with the manufacturer's printed instructions.
- B. LINSEED OIL, RAW: Comply with ASTM A234.
- C. LINSEED OIL, BOILED: Comply with ASTM D260.
- D. TURPENTINE: Comply with ASTM D13.
- E. MINERAL SPIRITS: Comply with ASTM 235.
- F. TINTING COLORS: Standard colors by the same manufacturer as the paint.
- G. OIL VARNISH: Comply with Fed Spec TT-V-85
- H. SPAR VARNISH: Comply with Fed Spec TT-V-121.
- I. CLEANING SOLVENT: Comply with ASTM D362.
- J. SPACKLE COMPOUND: Architectural grade oil based vinyl paste spackling compound; DAP Inc., or equal.
- K. ZINC-RICH COATING: Formulated compound that provides a 3 mil thickness is one coat containing not less than 95% zinc.

2.02 MIXES

- A. Colors will be selected by the Architect. If another manufacturer's paint other than specified is approved for use, colors shall match exactly. All paint products will be mixed at the manufacturer's outlet facility by machines which can calibrate the color formula exactly, allowing exact matching of the color at a later date. The Contractor shall maintain color and tint formulas and shall include in O & M Manuals as specified in Section 01 78 23, OPERATIONAL AND MAINTENANCE DATA.
- B. When thinning is approved as necessary to suit surface conditions, temperature or other factors, paints may be thinned in accordance with manufacturer's printed instructions. Paints shall be thinned with not more than one pint of thinner per gallon of paint. The use of thinner

shall not relieve the Contractor from obtaining complete coverage of all surfaces. Thinning shall not exceed VOC compound requirements.

2.03 COLORS AND TINTS

- A. Selected colors shall be considered final for hue, but the right is reserved to vary the value and intensity of any color before application of the final coat. Therefore, no final work shall be done until the base coats have been inspected and approved in writing. Base coats shall be the same hue as finish colors, but each coat shall be different in value. Generally, the final coat shall match the color selected, the next-to-last coat shall be lighted by adding 25 to 30 percent white. Additional base coats shall be applied un-tinted.
- B. Colors for surfaces required to be painted are scheduled. If a selection for any such surface has been omitted, request these selections in sufficient time to permit review by the Engineer and revision of the selection when necessary.

2.04 SPECIAL COATINGS

- A. EPOXY COATINGS: Pittsburg "Pitts-Glaze", Glidden "Glid-Guard" or Sherwin Williams "Tile Clad II"; mixed and applied in accordance with the manufacturer's recommendations. Install two (2) heavy brush coats of block filler to surfaces and allow to dry. Epoxy coating shall dry to a high gloss finish.
- B. TEXTURED COATING: Prepare concrete by patching with Thoro "Thorite", leveling concrete surface. Spray the entire surface with Thoro "Thorotex", a cement base, lightweight, aggregate-type, spray-applied coating, using a hopper-type spray gun, according to the manufacturer's printed instructions.
- C. HIGH PERFORMANCE COATING: Single-component polyester or polyester aliphatic-polyurethane resin coating system; Mameco "Sanitile", or approved equal, as follows:
 - 1. Concrete masonry: Sanitile ILT (SP), 4-coat system applied by roller or squeegee to a 25 mil DFT total thickness. System shall consist of 2 trowel coats of smoothing ply followed by Sanitile PC Base coat and Sanitile 550 finish coat.
 - 2. Concrete panels: Sanitile PC, 3-coat system applied by roller or squeegee to a 20-mil DFT total thickness. System shall consist of acrylic block filler, Sanitile PC Base coat and Sanitile 550 finish coat.
 - 3. Drywall surface: Sanitile DW, 3-coat system applied by roller or spray to a 8-mil DFT total thickness. System shall consist of Sanitile DW Base, a base coat, and a Santie 550 Finish Coat.
- D. TRAFFIC MARKING PAINTING: A fast drying medium oil alkyd enamel conforming to U.S. Bureau of Roads requirements. Apply over clean, etched or roughened concrete to a thickness of 9.0 mils DFT in one spray coat. Allow concrete to cure for 30 days prior to application.

3.00 EXECUTION

3.01 PREPARATION

- A. Properly prepare surfaces receiving finish, as scheduled or specified. Remove loose accumulations of dust or dirt with an air blower, or vacuum, or by sweeping with a brush. Where necessary, wash with detergent followed by rinsing with clean water. Specific preparation procedures shall be in accordance with manufacturer's recommendations, or as specified in Table 09901-A, following this specification.

- B. Areas being painted shall be ventilated during painting application. Workmen exposed to chemical vapors shall not exceed limits as established by the government. Solvent vapors shall be exhausted to the outdoors. return air inlets in the work area shall be temporary sealed while painting is in progress.
- C. Surfaces not to be painted shall be protected. Remove electrical plates and air-conditioning grilles. Remove loose or movable equipment or apparatus. Surfaces which must remain in place shall be protected with masking tape and temporary coverings until painting has been completed.

3.02 INSTALLATION

- A. **BRUSH APPLICATION:** Use only top quality hog hair or synthetic bristle brushes. Apply paint to form a uniform film of a thickness which is consistent with the specified coverage. Use sufficient cross brushing to fill surface irregularities and complete coverage. Use care when painting corners and other restricted places so that a uniform application is obtained. Final brushing strokes shall be made in the same direction and toward the previously applied paint. Brush the final coats of enamel paints only enough to spread the coating evenly and avoid excessive thickness.
- B. **SPRAY APPLICATION:** When paint is applied by spray, the air gun used shall be adjustable to regulate the air and paint mixture. The equipment shall have a suitable water trap to remove moisture present in the compressed air. Paint pots shall be equipped with a hand agitator to keep the paint mixed well. The width of the spray shall be not less than 12", or more than 18". The pressure shall be suitable for type of paint used.
- C. **ROLLER APPLICATION:** Use an all-purpose roller cover having a 3/8" to 1/2" lamb's wool smooth to medium nap, or as otherwise recommended by the manufacturer for the particular paint product being applied. Cover roller thoroughly with paint and roll to result in even distribution of paint to the surface. Apply by rolling vertically, with sufficient repetition to ensure complete and even coverage of paint. Thoroughly clean roller when nap becomes worn or when roller no longer spreads paint evenly or when roller can no longer be adequately cleaned. Pass paint through a 60-mesh strainer prior to application by roller.
- D. **WOOD DOORS:** Immediately after delivery, give top and bottom edges of wood doors one (1) heavy coat of spar varnish. After doors have been trimmed and fitted, finish edges and re-coat tops and bottoms with varnish. Sand wood doors with 3/0 or No. 5/0 sandpaper and clean before applying sealer. Sand and clean between each coat of finish.
- E. **PAINTING OVER SHOP COAT:** Where an item to be painted has a shop coat of paint, primer may be omitted. Touch up marred surfaces of shop coat before applying finish coats.
- F. **BLOCK FILLER:** Apply block filler for concrete masonry in two (2) heavy coats, at the rate of 75 square feet per gallon. Use a brush followed by roller to force the material into the pores of the block.

3.03 WORKMANSHIP

- A. Painting shall be accomplished by skilled mechanics in a workmanlike manner. The Contractor shall be responsible for the quality of his work and shall not begin any work until the surfaces have been properly prepared.
- B. Do not finish any surface which has hammer marks, cuts, splits, exposed nails, nail ridges or improper workmanship, loose joints or improper jointing that normal finishing procedures will

not conceal. Inspect surfaces and report defects which should be corrected before painting to the Contractor.

- C. Apply coats evenly and consistently. Coats shall be free from sags, runs, crawls, or other defects. Brush coats so that only a minimum amount of brush marks show. Allow each coat to dry thoroughly before applying next coat. Lightly sand enamels and varnishes with No. 000 sandpaper between successive coats.
- D. Apply paint with a brush only. Large areas may be applied by rollers. Wood finishes other than those schedule to be painted, may be sprayed. No other spray painting shall be allowed unless specified or approved in writing.

3.04 FIELD QUALITY CONTROL

- A. Painting specifications give minimum film thickness. (MWF - wet film thickness; DFT - dry film thickness). Each coat shall be applied to the manufacturer's recommended spreading rate to give the minimum thickness shown. Test paint thickness during application with a wet film thickness gage. Where coverage is not adequate, or when requested by the Engineer, provide testing apparatus necessary to determine the dried paint film thickness. Provide additional coats of paint until the specified film thickness is achieved.
- B. Regardless of the number of coats applied, the finish surface shall completely cover previous coats with no evidence of "bleed-thru" or brush marks.

3.05 CLEAN AND ADJUST

Thoroughly clean equipment at the end of each work day.

3.06 SCHEDULES

- A. Surfaces shall be prepared for painting in accordance with manufacturer's instructions or as scheduled in Table 09901-A, following this section.
- B. Painting shall be in accordance with the paint system scheduled in the Paint Schedule, Table 09901-B.

PAINTING PREPARATION SCHEDULE		
Table 9901-A		
Mark	Surface Type	Description
P-1	Wood	Surfaces shall be dry. Sand smooth and remove saw cuts or rasp marks. Sand with the grain, not against the grain. Spot prime knots and sap streaks. Putty nail holes and cracks after primer is applied.
P-2	Galvanized Metal	SOLVENT CLEANING SSPC Sp-1: Clean thoroughly and remove grease, residue and corrosion with solvent wash. Sand rusted areas and spot prime with rust inhibitive primer.
P-3	Steel	SOLVENT CLEANING SSPC-SP-1: Remove oil, grease, dirt, soil or contaminants by cleaning with solvent or steam.
P-4	Steel	HAND TOOL CLEANING SSPC-SP-2: Remove loose rust, loose mill scale and loose paint to firm surface by hand chipping, scraping, sanding or wire brushing. Follow with solvent wash to remove any remaining residue.
P-5	Steel	STEEL POWER TOOL CLEANING SSPC-SP-3: Remove loose rust, loose mill scale and loose paint with needle guns or by power tool chipping, de-scaling, sanding, wire brushing

		and grinding.
P-6	Steel	COMMERCIAL BLAST CLEANING SSPC-SP-6: Remove up to 2/3 of visible rust, mill scale, paint or foreign matter by blasting with sand, grit or shot.
P-7	Steel	BRUSH OFF BLAST CLEANING SSPC-SP-7: Blast to remove oil, grease, scale and other contaminants and loose material, paint or other coatings.
P-8	Concrete Masonry	Allow masonry to dry for at least 30 days. Remove dirt, loose or excess mortar, laitance, efflorescence and dry thoroughly. Patch defects as necessary with latex oncrete mix.
P-9	Concrete and Stucco	Concrete shall be allowed to cure for 30 days at a temperature of 75 degrees or above. Patch defects where necessary with latex concrete. Remove loose dirt and dust. Apply concrete sealer or masonry conditioner. Curing compounds and sealers must be compatible with the paint applied to the surface, otherwise must be removed by blasting or acid etching.
P-10	Masonry	Remove efflorescence by brushing and washing with concrete etch. Treat porous brick with concrete and block sealer or masonry conditioner. Masonry surfaces treated with curing compounds or waterproofing treatments must have the compounds removed.
P-11	Old Paint Film	Roughen with steel wool or sandpaper. Remove mildew with warm solution of 1/3 coup of trisodium phosphate and 1/2 cup bleach (Clorox). Rinse with clean water.
P-12	Painted Brick or Tile	Use a wire brush to remove loose or peeling paint. Give the entire surface a light sandblast cleaning conforming to SSPC SP-7.
P-13	Plaster	Surfaces to be clean and dry. Fill cracks and voids with spackle compound and texture to match adjacent surfaces. Plaster shall be allowed to cure for 30 days before finishing. Spot prime repaired surfaces before sealing. All plaster surfaces to be sealed before primer is applied. Textured, soft or porous plaster shall be treated with a solution of 1 pint household vinegar in 1 gallon of water.
P-14	Drywall	Surfaces shall be clean and dry. Joint treatment shall be thoroughly dry. Texture shall be applied and defects repaired. Cracks or voids shall be filled with spackle compound to match adjacent surfaces. Prime metal casings and corner heads before applying water-based paints.
P-15	Varnish over wood	Surfaces to be clean and dry. Fill nail holes and other blemishes after staining with filler tinted to match wood or stain color.
P-16	Tilt up concrete	COMMERCIAL BLAST CLEANING SSPC SP-6. Remove laitence and loose cement, Patch bug holes and air pockets, honeycombs or other defects with cement patching compound.

**PAINT SCHEDULE
TABLE 9901-B**

SPEC NO.	PREP NO.	SURFACE TYPE	SURFACE DESCRIPTION	APPLICATION	VEHICLE TYPE	SHEEN	SEQ.OF COATS	PRODUCTION DESCRIPTION	DFT (mils) MIN.	MFG. CAT NO.
METALS										
F1	P3 P4	Metal, ferrous; EXTERIOR	Exposed Structural steel HM doors and frames Metal railings Misc metals	Brush	Alkyd	Semi-Gloss	1 2 3	Universal Metal Primer Exterior Enamel Exterior Enamel	4.0 3.5 3.5	B50 B54Z B54Z
					OR					
					Acrylic	Semi-Gloss	1 2 3	Acrylic Primer Acrylic Enamel Acrylic Enamel	5.0 4.0 4.0	B66 B42 B42
F2	P3 P4	Metal, ferrous; EXTERIOR	HM doors and frames Metal railings Miscellaneous metals	Brush	Alkyd	Semi-Gloss	1 2 3	Universal Metal Primer Exterior Metal Enamel Exterior Metal Enamel	4.0 3.5 3.5	B50 B54Z B54Z
					OR					
					Alkyd Silicone	Semi-Gloss	1 2 3	H.S. Alkyd Primer Silicone Alkyd Enamel Silicone Alkyd Enamel	4.0 4.0 4.0	B50 B56 B56
F3	P3 P4	Metal, Ferrous; EXTERIOR	Structural steel misc framing	Brush or Spray	Waterbased Catalyzed Epoxy	Semi-Gloss	1 2 3	Waterbased Epoxy Primer Waterbased Epoxy Waterbased Epoxy	5.0 3.0 3.0	B70 B70 B70
F4	P2 P4	Metal, Ferrous; EXTERIOR Severe exposure	Exposed Structural Steel (Columns, beams, Misc framing	Brush or Spray	Polyamide Epoxy	Semi-Gloss	1 2 3	Epoxy Primer Epoxy Coating Epoxy Coating	8.0 6.0 6.0	B58 B58 B58
					OR					
					Epoxy Polyurethane	Semi-Gloss	1 2 3	Rust Inhibitive Primer Polyester Polyurethane Polyester Polyurthane	2.0 2.0 2.0	B62 B65 B65
F5	P2 P3	Metal, Galvanized; EXTERIOR	Handrails Flashings & misc sheetmetal	Brush	Acrylic Alkyd	Semi-Gloss	1 2 3	DTM Wash Primer Industrial Enamel, HS Industrial Enamel, HS	4.5 3.5 3.5	B71 B54Z B54Z
					OR					
					Acrylic Alkyd	Semi-Gloss	1 2 3	DTM Wash Primer Alkyd Enamel. Alkyd Enamel	1.0 4.0 4.0	B71 B42 B42
					OR					
					Acrylic Silicone Alkyd	Semi-Gloss	1 2 3	DTM Wash Primer Silicone Alkyd Enamel Silicone Alkyd Enamel	1.5 4.0 4.0	B71 B56 B56
F6	P3	Metal, ferrous; INTERIOR	HM doors & frames Electrical panels HVAC air terminal devices Handrails Misc. metals	Roller or Brush	Acrylic Alkyd	Semi-Gloss	1 2 3	Universal Metal Primer Alkyd Enamel Alkyd Enamel	3.0 1.7 1.7	B66 B34 B34
F7	P3	Metal, ferrous; INTERIOR	HM doors & frames Electrical panels	Roller or	Acrylic Latex	Semi-Gloss	1 2	DTM Acrylic Primer Latex Enamel	2.5 1.3	B66 B31

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LCS11454 – 2.0 MG Elevated Storage Tank

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PAINT SCHEDULE TABLE 9901-B										
SPEC NO.	PREP NO.	SURFACE TYPE	SURFACE DESCRIPTION	APPLICATION	VEHICLE TYPE	SHEEN	SEQ.OF COATS	PRODUCTION DESCRIPTION	DFT (mils) MIN.	MFG. CAT NO.
			HVAC air terminal devices Handrails Misc. metals	Brush			3	Latex Enamel	1.3	B31
F8	P3 P4	Metal, ferrous, INTERIOR	Structural Steel Metal Deck Steel Joists HM Doors & Frames Misc Metals	Brush, Roller or Spray	Alkyd	Semi-Gloss	1	Universal Primer	4.0	B50
							2	Industrial Enamel	3.0	B54Z
							3	Industrial Enamel	3.0	B54Z
					OR					
					Polyamide Epoxy	Gloss	1	Epoxy Primer	6.0	B58
							2	Epoxy	5.0	B58
							3	Epoxy	5.0	B58
F9	P2	Metal, galvanized; INTERIOR	Handrails Misc. Galvanized Steel	Brush	Alkyd	Semi-Gloss	1	Galvanized Metal Primer	3.0	B50
							2	Alkyd Enamel	2.3	B34
							3	Alkyd Enamel	2.3	B34
F10	P3 P4 P5	Metal, ferrous, EXTERIOR, immersed	Ferrous Metals in submerged conditions Metals subjected to standing water	Brush	Catalyzed Epoxy	Gloss	1	Catalyzed Epoxy Primer	6.0	B62
							2	Epoxy Coating	5.0	B62
							3	(Same or None)	0.0	B62
M8	P8	Masonry; INTERIOR	CMU, where scheduled as special finish	Roller or Spray	Polyester Epoxy	Gloss	1	ILT Trowel Coat	8.0	Mameco "Sanitile"
							2	ILT Trowel Coat	8.0	
							3	Base	Total 25.0	
							4	Finish		
M9	P8	Masonry; INTERIOR	CMU, where scheduled as water-based epoxy finish	Roller or Spray	Water Based Catalyzed Epoxy	Gloss	1	Block Filler, Heavy Duty	8.0	B42W46
							2	Block Filler, Heavy Duty	8.0	B42W46
							3	Wall Primer	1.1	B26
							4	Water Based Epoxy	2.5	B70W100
							5	Water Based Epoxy	2.5	B70W100
ASPHALT AND CONCRETE PAVING										
T1		Asphalt / Concrete; EXTERIOR	Parking lot stripes and signage on asphalt or concrete paving	Spray	Alkyd	Matte	1	Alkyd Traffic Paint	9.0	B29

Schedule Notes:

1. See Table 9901-A for description of preparation required.
2. Applications other than those scheduled must be approved by Architect.
3. Dry film thickness (DFT) shall be converted to wet film thickness (WFT) and tested during application with WFT paint gage.
4. Paint specifications are based on Sherwin-Williams products only for the purpose of establishing quality. Products of other manufacturers as listed will be acceptable, if they are of the same quality or better.
5. Concrete "stain" and waterproofing coatings are specified elsewhere.

END OF SECTION

09 96 00.01 HIGH-PERFORMANCE COATINGS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to apply protective coatings to material and equipment as specified herein, including the preparation of surfaces prior to application of coatings.
- B. Protective coatings are special coatings to be used at specific locations or on specific surfaces as indicated herein and are complementary to the coating surfaces specified in Section 09 91 00 "Painting" in that every surface of every description, except those which are specifically noted not to receive a coating finish, shall be covered by a paint system as specified in this Section or in Section 09 91 00 "Painting."
- C. Protective coatings shall be applied to the following surfaces:
 - 1. Metal surfaces located outside of buildings and other structures anywhere on the Site.
 - 2. Structural steel
 - 3. New piping, except stainless steel pipe.
- D. Special applications for painting include the following:
 - 1. Buried pipe and valves shall receive a shop applied protective coating as described in the appropriate section of the Specifications.
- E. Contain, treat, and dispose of any dust, spray, drainage, or spillage resulting from coating operations. It shall be the Contractor's responsibility to determine if the materials to be disposed of are classified as Hazardous Waste. Disposed of waste, hazardous or otherwise, shall be in accordance with applicable regulations. The Contractor shall be aware of and understand the regulations concerning disposal of waste generated by coating operations.

1.02 QUALITY ASSURANCE

- A. Acceptable Manufacturers: Products which comply with the Contract Documents and are manufactured by the following companies will be acceptable:
 - 1. Tnemec Company, Inc.
 - 2. Carboline.
 - 3. Ameron International Performance Coatings and Finishes Group.
 - 4. The Sherwin-Williams Company.
 - 5. International Paint, LLC.
 - 6. ICI Devoe High Performance Coatings.
 - 7. Plasite Protective Coatings.
- B. Applicator's Qualifications: Applicators must be qualified in this line of work and have a minimum of 5 years' experience in the application of the protective coatings of the types specified herein. Submit a list of recent projects and names of references for those projects.

C. **Product Quality:**

1. Use only the coatings specified in this Section. Use only those thinners and solvents recommended by the manufacturer, only in the amounts necessary to produce the manufacturer's recommended spreading rate, and in amounts not exceeding the maximum quantities stated in the manufacturer's literature.
2. The coating material shall not show excessive settling in a freshly opened full can and shall be easily re-dispersed with a paddle to a smooth, homogeneous state. It shall show no curdling, livering, caking, or color separation and shall be free of lumps or skim surfaces.

D. **Testing:** Protective coatings shall be applied under quality control procedures, which include inspection of surface preparation and for each coat. Do not proceed with the next step until the Engineer has approved the previous step. The Contractor shall be solely responsible for testing for this Section, at no further cost to the Owner. The Engineer shall also make such tests if it is considered necessary. Cooperate with the Engineer, providing equipment, scaffolds, and other equipment as requested by the Engineer.

E. **Testing Equipment:** Furnish the testing apparatus necessary for testing coatings, including the following:

1. One set of U.S. Department of Commerce thickness calibration plates, certified by the National Bureau of Standards, to test dry film thickness.
2. Five wet-film thickness gauges. Give one to Owner's representative. Each painter shall keep one to test paint as it is applied.
3. One dry-film thickness gauge, Mikrotest III, 0 - 40 mils with calibration standard approved by the Bureau of Standards.
4. One Bacharach Sling Psychrometer, Model 12-7011.
5. Tinker and Rasor Model M 1 Holiday Detector and recommended wetting agent.
6. One set of SSPC VIS 1-89 Visual Standards for Abrasive Blast Cleaned Steel.

F. **Testing Reports:** Submit an inspection report for each coating applied on the Project. The testing report shall be completed on a form furnished by the Engineer and shall bear the signature of the Contractor and the Owner's representative.

1.03 SUBMITTALS

A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:

1. Manufacturer's Product Data sheet for each paint type, including surface preparation requirements, recommended spreading rates, application procedures, recommended primers, and other instructions.
2. Color charts of each paint type.

1.04 STANDARDS

A. The applicable provisions of the following standards shall apply as if written here in their entirety:

1. American National Standards Institute (ANSI), 25 West 43rd Street, New York, NY. 10036
 2. National Association of Corrosion Engineers (NACE), 1440 South Creek Drive, Houston, TX. 77084-4906
 3. Occupational Safety and Health Administration (OSHA), U.S., Department of Labor, 200 Constitution Avenue, NW, Washington DC 20210
 4. The Society for Protective Coatings, 40 24th Street (SSPC), 6th Floor, Pittsburgh, PA. 15222-4656
- B. In the event of a conflict between the published standards, codes, and this Section, the more stringent requirement shall govern.

1.05 DELIVERY AND STORAGE

- A. Deliver coating products to the Site in original unopened containers, with manufacturer's label and batch number attached. Do not apply products until the Owner's field representative has approved the product for use.
- B. Use one location at each site for the storage of coating products. Protect the floor from spills and other damage. Protect the products from extreme heat or cold. Keep containers covered. Keep the storage rooms clean of trash and debris. Dispose of oily or used rags daily. Under no circumstances shall they be allowed to accumulate. Take precautions to prevent fires. The storage of flammable liquids shall comply with the City, State, or other fire codes.

1.06 JOB CONDITIONS

- A. It is desired that the paint products be furnished by as few manufacturers as possible to meet the requirements of the Specifications. Coating products of the same type shall be supplied by the same manufacturer. Do not mix products from different sources. Apply finish coats in the field. The Owner shall select colors.
- B. Primers factory-applied to equipment shall be those specified. Where possible, notify manufacturers which shop prime coats will be required in order to be compatible with field-applied finish coats. Where equipment is purchased which has the manufacturer's standard primer or a factory finish which is other than as specified in this section, remove the factory-applied paint system or apply passivators or other special coatings as required to make the surface compatible with the finish coat specified.
- C. Do not apply any coating to machinery, piping, or other surfaces before testing has been completed and systems approved. Any damage to coatings resulting from subsequent corrective procedures shall be stripped back to bare metal and repainted with the appropriate paint system as directed by the Engineer.
- D. Surfaces which will be inaccessible after installation shall be coated prior to installation, or shall be coated and approved in stages as the work is installed.
- E. The Engineer shall approve surfaces for application of coatings at each stage. Any material that is coated prior to the Engineer's approval shall be stripped back to bare metal and repainted.

- F. At least 1 week shall be allowed for drying of finished surfaces before any machinery can be placed into service.
- G. Do not apply coating over nameplates or other identification plaques. Mask such plates and keep protected. Remove tape and polish nameplates after painting is complete.
- H. Environmental Conditions:
 - 1. Do not apply coatings under conditions that are unsuitable for the production of good results. Remove trash and debris from enclosed buildings and thoroughly clean prior to application of coatings. Do not begin application of coatings in areas where other trades are working, or where construction activities result in airborne dust or other debris. Do not apply coatings in conditions which do not conform to the recommendations of the coatings manufacturer.
 - 2. Coatings shall only be applied when conditions fall within the parameters listed in the manufacturer's printed data.
 - 3. Do not apply any coatings when weather conditions are unfavorable. In the event that climatic conditions are not conducive for best results, postpone application of coatings until conditions conform to the manufacturer's recommendations and the provisions of this Section. Do not apply coatings to a wet or damp surface in wet or damp weather conditions, or when there is dust in the air. Surfaces exposed to direct sunlight shall be shaded by awnings or other protective devices while coatings are being applied. When necessary, provide temporary heating devices of a type that produces no fumes which will discolor the paint system.
 - 4. Apply coatings to surfaces which will be under water constantly or which periodically will be under water during operation of the Project in accordance with requirements for submerged structures to a point 1 foot above the maximum water level. Mask the line of demarcation between the coating systems to a straight level line.
- I. Working Conditions:
 - 1. Provide adequate lighting at any location that coatings are being applied or testing is performed. Illumination shall be of sufficient intensity to achieve good results. Provide explosion-proof lighting when required.
 - 2. Temporary ladders and scaffolds shall conform to applicable safety requirements. Erect temporary scaffolds where needed to cover large areas. Provide ladders or scaffolding during testing procedures.

1.07 GUARANTEES

- A. Protective coating shall be guaranteed for a period of 1 year from the date of the Owner's acceptance of the Project.
- B. A warranty inspection shall be conducted in the eleventh month following completion of painting and coatings. Any defective work discovered at this date shall be corrected by the Contractor in accordance with the Contract Documents at no additional cost to the Owner. Other corrective measures may be required during the 1 year warranty period.

2.00 PRODUCTS

2.01 MATERIALS

- A. Materials shall be the manufacturer's top of line quality products, as listed herein. Products used on this project shall be as indicated below. Primers and finish coats shall be manufactured by the same manufacturer. Coatings shall be from the same batch. Products shall be as follows:

Type A	Alkyd-Phenolic Universal Primer
Tnemec	Series 1 Purple Prime
Sherwin-Williams	Kem Kromik Universal
International Paint, LLC	Interlac 573
ICI Devoe	Devguard 4165
Carboline	Rustbond 8HB
Ameron	Amercoat 185HS

Type B	Epoxy-Polyamide Primer
Tnemec	Series 66
Sherwin-Williams	Copoxy Primer
International Paint, LLC	Intergard 251; Intergard 269 for valves and gates, submerged structural steel and misc. metals, and submerged piping
ICI Devoe	Debran 201
Carboline	893
Ameron	Amerlock 400/2

Type C	Alkyd Enamel
Tnemec	Series 23 Enduratone
Sherwin-Williams	DTM Alkyd Enamel
International Paint, LLC	Interlac 665
ICI Devoe	Devguard 4308
Carboline	DTM58
Ameron	Amercoat 5450

Type D	Epoxy-Polyamide Coatings
Tnemec	Series 66
Sherwin-Williams	Macropoxy 646 Epoxy
International Paint, LLC	Intergard 475HS; Interseal 670HS for valves and gates, PVC pipe and conduit, submerged structural steel and misc. metals, and submerged piping
ICI Devoe	Devran 224 HS

Carboline	890
Ameron	Amercoat 395FD

Type E	Epoxy-Polyamide Coatings for Potable Water
Tnemec	Series N140 Pota-Pox Plus
Sherwin-Williams	Tank Clad Epoxy
International Paint, LLC	Interline 850 or Interseal 670HS (NSF colors)
ICI Devoe	Bar-Rust 233H
Carboline	891
Ameron	Amerlock 400/2

Type F	Epoxy-Polyamide Coatings for Walking Surfaces
Tnemec	Series 66 Hi-Build Epoxoline
Sherwin-Williams	Tile Clad HS
International Paint, LLC	Interseal 670HS
ICI Devoe	Devoe AST 250 Non-Skid
Carboline	890
Ameron	Amerlock 400/2 w/886 Non-Skid Additive

Type G	High Build Acrylic Polyurethane Enamel
Tnemec	Series 73 Endura-Shield
Sherwin-Williams	Hi-Solids Polyurethane
International Paint, LLC	Interthane 870HS
ICI Devoe	Devthane 359
Carboline	133HB
Ameron	Amercoat 450H

Type H	Aliphatic Polyurethane Enamel
Tnemec	Series 1074 Endura-Shield II
Sherwin-Williams	Hi-Solids Polyurethane
International Paint, LLC	Interthane 990HS
ICI Devoe	Devthane 379UVA
Carboline	134HS
Ameron	Amercoat 450H

Type I	Modified Acrylic Coatings
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Tnemec	Series 29 Tuferyl
Sherwin-Williams	DTM Acrylic
ICI Devoe	Devflex 4206
Ameron	Amercoat 220
Carboline	3359
International Paint, LLC	Intercryl 520

Type J	Silicone Aluminum Coatings For High Temperature
Tnemec	Series 39 Silicon Aluminum
Sherwin-Williams	Silver Brite Aluminum B59S8
International Paint, LLC	Intertherm 50
ICI Devoe	Devoe HT-12
Ameron	Amercoat 878
Carboline	4674

Type K	Epoxy Concrete Coating
Tnemec	Series 64H-413 Hi-Build Tneme-Tar
Sherwin-Williams	Tar Guard Epoxy
International Paint, LLC	Interzone 954
ICI Devoe	Devtar 247
Ameron	Amercoat 78HB Coal Tar Epoxy

Type L	Epoxy Concrete Coating – HFS
Tnemec	Series 434/435 Perma-Shield System

2.02 COLOR SELECTION

- A. The color chart shall include the complete available range of colors, including tints and shades. The Owner shall select the colors.
- B. Use a multi-color system coating for any surface receiving more than one coat. Each coat shall be tinted differently from the preceding coat in a manner that will allow the various coats to be easily distinguished. Colors shall generally be from light to dark shades, but the Contractor may have the option to select tint shades to insure coats will receive adequate coverage without bleeding or otherwise showing through the preceding coat.
- C. Piping and equipment shall be color coded in accordance with the requirements of the Texas Commission on Environmental Quality (TCEQ).

3.00 EXECUTION

3.01 PREPARATION

- A. Thoroughly clean surfaces before applying coating. Where field cleaning is required, apply one coat of shop primer to the surface to protect the surface until field cleaning is performed.
- B. Each surface shall have a primer, except in the instance where field cleaning is required and the manufacturer's printed literature states that the coating may be applied without a primer and approval of the Engineer is obtained. Shop-applied primer shall be thoroughly cleaned of oil, grease, and other contaminants, and nicks or other defects shall be spot-primed before subsequent coats are applied.
- C. Thoroughly clean surfaces that are blasted of abrasive material, and apply coating to surfaces before any corrosion occurs on the surface. Apply coatings no later than the same day they are blasted. In the event that surfaces are not coated immediately after cleaning, and rust reforms on the blasted surfaces, re-blast surfaces. Remove abrasives used in the blasting operations, rust, scale, and other foreign materials accumulating from the cleaning operations from the Site. Sweep abrasive blasted surfaces clean after blasting is complete.
- D. The adequacy of the preparation of surfaces shall be determined by comparing the surface with SSPC Vis 1 "Pictorial Surface Preparation Standards for Painting Steel Surfaces." Prepare surfaces in accordance with the following requirements:
 - 1. Type SP1 Near White Blasting: Surfaces shall receive one coat of sacrificial rust inhibitive shop primer to protect the surfaces until time for cleaning and preparation of surfaces at the Site. Metal surfaces shall be cleaned to a "Near White" condition by abrasive blasting in accordance with SSPC SP10 "Near White Blast Cleaning", using 16 to 35 mesh grit. Take precautions to prevent gouging and channeling of metal. The resulting surface profile shall be in accordance with the coating manufacturer's recommendations. Protect soft metal parts, gears or other parts of the equipment that may be damaged by the cleaning process or by the introduction of grit or dust. Replace any oils or lubricants that are contaminated by the cleaning process.
 - 2. Type SP1A: Equipment that contains mechanical parts that would be damaged by field cleaning may be factory-blasted to a "Near White" condition by abrasive blasting before the equipment is assembled. Apply a single coat of primer that is compatible with the next coat to the surface and allow to thoroughly cure before assembly or shipping. This type of surface preparation may only be performed on the sensitive components. All other components will be prepared in accordance with Type SP1 Near White Blasting.
 - 3. Type SP2 Commercial Blast Cleaning: Thoroughly clean metal surfaces of mill scale, rust, and other foreign matter by abrasive blasting to gray metal in accordance with SSPC SP6 "Commercial Blast Cleaning." Perform abrasive blasting after erection, unless otherwise approved by the Engineer.
 - 4. Type SP3 Concrete Surfaces: Thoroughly cure concrete surfaces prior to application of coatings. Allow a minimum of 30 days curing time to elapse before coatings are applied. Concrete surfaces which are scheduled to receive coatings shall be dry and shall be prepared by light abrasive blasting in accordance with SSPC SP7 "Brush Blast Cleaning." Blasting shall be sufficient to remove dirt, dust, efflorescence, oil, grease, stains, and other foreign matter and shall provide adequate surface roughening for good adhesion.
 - 5. Type SP4 Shop Preparation of Metal Surfaces: Exterior metal surfaces, except those specified for field preparation, may be shop cleaned by blasting to a gray metal finish in

accordance with SSPC SP 6 "Commercial Blast Cleaning", as described above. The blasted surface shall be primed immediately as scheduled.

6. Type SP5 Field Preparation of Shop Primed Surfaces: Slag and weld metal accumulations and splatters not removed by the fabricator shall be removed in the field by chipping or grinding. Sharp edges shall be peened, ground or otherwise blunted. Areas adjacent to welds or any area where shop primer has been damaged shall be thoroughly cleaned in accordance with SSPC SP2 "Hand Tool Cleaning" preparation and re-primed. In order to prevent injury to surrounding painted surfaces, blast cleaning may require the use of a lower air pressure, a shorter blast distance to the surface, and shielding and masking. If damage is too extensive or uneconomical to touch up, the entire item shall be re-cleaned and coated in accordance with the provisions of this Section. Welds and irregular surfaces shall receive a field coat of the specified primer prior to the application of the first field coat.

3.02 APPLICATION

- A. Surface preparation and application of coatings shall be in accordance with applicable standards of the Society for Protective Coatings (SSPC) and the manufacturer's recommendations. Do not apply the prime coat until the Owner's field representative is notified and approval is obtained for the surface preparation. Coating shall be applied by skilled workmen and shall be brushed out or sprayed evenly, without runs, crazing, sags, or other blemishes. Apply coating by brush or spray as noted in the Specifications.
- B. Apply the first coat to the surface, including cutting in around edges, before the second coat is applied. The second coat and any successive coats shall not be applied before notifying the Owner's field representative and obtaining approval. Each coat shall be tested before the successive coat is applied.
- C. Each coat shall be thoroughly dry before application of the successive coat. The full drying time recommended by the manufacturer shall be allowed. Sand enamel between coats.
- D. Protect adjacent materials from damage, including over spray or spillage. Provide drop cloths or other protective tarps to cover floors, equipment or other adjacent materials.

3.03 FIELD QUALITY CONTROL

- A. Field Tests: Make wet film tests during painting operations to assure proper thicknesses of coating are being applied. After each coat has been applied, test the paint film thickness with a nondestructive, magnetic type thickness gauge. The total dry-film thickness for each coat shall not be less than 75 percent of the amount specified. If the thickness is less than 75 percent, apply additional coats until the total specified thickness is obtained. The total thickness after the final coat has been applied shall be 100 percent of the thickness specified, minimum. Apply additional coats until the specified thickness is reached or exceeded.
- B. Holiday Testing: Test the entire surface of coated submerged metal structures with a holiday detector. For thickness between 10 and 20 mils (250 to 500 microns) a non-sudsing type wetting agent, as recommended by the holiday detector manufacturer shall be added

to the water prior to wetting the detector sponge. Mark and repair pinholes in accordance with the manufacturer's printed instructions, then retest pinholes. No pinholes or other irregularities shall be permitted in the final coats. Areas containing holidays shall receive additional coats until tests indicate no holidays.

3.04 CLEAN AND ADJUST

- A. Promptly remove trash and debris resulting from painting operation from the Site. Remove drop cloths, masking tapes and other protective coverings. Remove paint spills, splatters, overlap of paint from adjacent material and other defects. Spot paint nicks and other defects.
- B. Remove paint containers and waste products. Thoroughly clean paint storage rooms, removing spilled paint from walls and floors.

3.05 SCHEDULES

- A. Protective coatings shall be applied in accordance with the following paint schedule:

PROTECTIVE COATINGS PAINT SCHEDULE

SPEC NO.	PREP NO.	SURFACE DESCRIPTION	APPLICATION	VEHICLE TYPE	SHEEN	NO. OF COATS	PRODUCT TYPE	DFT (MILS)
SS-1	SP2 or SP4	Structural Steel Exterior and Interior	Brush or Spray	Alkyd Pheonolic	Gloss	1	TYPE A	2.0
						2	TYPE C	3.0
						3	TYPE C	3.0
						Total Dry Film Thickness		8.0 mils
SS-2	SP2 or SP4	Equipment, Pumps, Motors, Valves and Piping Interior and Exterior	Brush or Spray	Arcylic Polyurethane	Gloss	1	TYPE B	2.0
						2	TYPE D	4.0
						3	TYPE G	3.0
						Total Dry Film Thickness		9.0 mils
SS-3	SP2 or SP4	Structural Steel and Miscellaneous Metals Above Water Surfaces	Brush or Spray	Acrylic Polyurethane	Gloss	1	TYPE B	2.0
						2	TYPE D	5.0
						3	TYPE G	3.0
						Total Dry Film Thickness		10.0 mils
SS-4	SP1	Structural Steel and Miscellaneous Metals Submerged	Brush or Spray	Epoxy Polyamide	Gloss	1	TYPE B	2.0
						2	TYPE D	5.0
						3	TYPE D	5.0
						Total Dry Film Thickness		12.0 mils
SS-5	SP1	Piping Submerged	Brush or Spray	Epoxy Polyamide	Gloss	1	TYPE B	2.0
						2	TYPE D	5.0
						3	TYPE D	5.0
						Total Dry Film Thickness		12.0 mils
SS-6	SP1A	Valves and Gates	Brush or Spray	Epoxy Polyamide	Gloss	1	TYPE B	2.0
						2	TYPE D	5.0
						3	TYPE D	5.0
						Total Dry Film Thickness		12.0 mils
SS-7	SP1	Water Storage Tanks Submerged or Above Water	Brush or Spray	Epoxy Polyamide	Gloss	1	TYPE E	6.0
						2	TYPE E	6.0
						Total Dry Film Thickness		12.0 mils
						Total Dry Film Thickness		12.0 mils

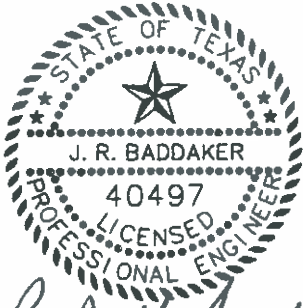
SPEC NO.	PREP NO.	SURFACE DESCRIPTION	APPLICATION	VEHICLE TYPE	SHEEN	NO. OF COATS	PRODUCT TYPE	DFT (MILS)
SS-8	SP2	Water Storage Tanks Exterior	Brush or Spray	Epoxy Polyamide Polyurethane	Gloss	1	TYPE B	2.0
						2	TYPD D	5.0
						3	TYPE H	2.5
						Total Dry Film Thickness		9.5 mils
SS-9	SP3	Concrete Floor Surfaces of Chemical Storage Area Interior	Brush or Spray	Epoxy Polyamide	Gloss	1	TYPE F	5.0 mils
SS-10	SP3	Concrete Surfaces as follows: Interior 1.Walls, beams, and slabs on interior surfaces 2.Interior wall, beams and slabs 3.Interior surfaces	Brush or Spray	Epoxy Coating	Text.	1	TYPE K	14.0 mils
SS-11	SP1	High Temperature Surfaces	Brush	Silicone	Alum.	1	TYPE J	1.5
						2	TYPE J	1.5
						Total Dry Film Thickness		3.0 mils
SS-12	SP4	Electrical Equipment Exterior	Brush	Alkyd Enamel	Gloss	1	TYPE A	2.0
						2	TYPE C	3.0
						3	TYPE C	3.0
						Total Dry Film Thickness		*
SS-13	*	PVC Pipe and Conduit Exterior and Interior	*	*	*	*	*	*
						Total Dry Film Thickness		*

END OF SECTION

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK
CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 22 PLUMBING

22 05 19 Meters & Gauges for Plumbing Piping


J. R. Baddaker 10-12-2012
FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

22 05 19 METERS & GAUGES FOR PLUMBING PIPING

1.00 GENERAL

1.01 WORK INCLUDED

Furnish labor, materials, equipment and incidentals necessary to install pressure gauges and cocks. Dial gauges shall indicate pressure on a graduated dial by means of a pointer utilizing an elastic element (Bourdon tube or coil), and actuating linkage as necessary for indicating pressure.

1.02 SUBMITTALS

Submittals shall be in accordance with Section 01 33 00, SUBMITTALS and shall include:

1. Shop drawings to be approved by the Engineer. Shop drawings shall list the location of each gauge to be furnished and the data shall be in such form that the Engineer may readily review the data.

2.00 PRODUCTS

2.01 MATERIALS

CONNECTION PIPE NIPPLES AND FITTINGS: Brass

2.02 MANUFACTURED PRODUCTS

A. PRESSURE GAUGES

1. The gauges shall be the Manufacturer's standard commercial product. The gauges shall be new and shall embody the design characteristics stated for the respective class, size, type, etc. scheduled herein. Gauge cases shall be phenol or ABC plastic, or steel zinc-coated or phosphate treated and finished with black enamel. Inlet shall be 1/2" size with bottom connections.
2. Class 1 gauges shall be pressure-indicating. Class 2 gauges shall be vacuum gauge-designed for vacuum indications. Class 3 gauges, shall indicate pressure or vacuum. Style X incorporates a single Bourdon tube for standard applications for pressure indications.
3. Gauges shall be as manufactured by Marshalltown Instruments, Ashcroft, (Dresser Industries), Weksler, or approved equal.

B. PULSATION DAMPENERS: At each pressure gauge, furnish and install a pulsation dampener, Mid-West Model 150, Vari-Damp Pulsation Dampener, or approved equal.

C. GAUGE COCKS: Gauge cocks for isolating standard product gauges shall be heavy duty brass with tee handle and male and female ends for 1/2" bottom threaded connections.

3.00 EXECUTION

3.01 INSTALLATION

Provide tap and connecting piping to install the pressure gauges. Connection shall comprise of brass or bronze nipples, fittings, bronze gauge cock and pulsation dampener. Install the gauge and protect the gauge until project acceptance by the Owner.

3.02 SCHEDULES

The pressure gauges to be furnished are listed below. The list does not include the gauges to be furnished as part of the equipment. The list has been prepared to facilitate takeoff and may or may not include all pressure gauges necessary, which is the responsibility of the Contractor.

Gauge Location	Class	Size	Pressure Range (Ft-H ₂ O @ 2' increments)	Number Required
Riser Pipe	1	3-1/2"	0 - 200	1
Top Landing 6" Drain Line	1	3-1/2"	0-100	1

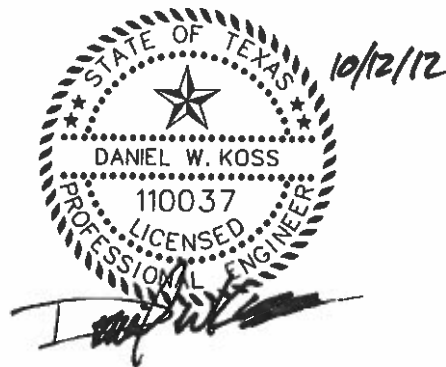
END OF SECTION

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK**

**CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 26 ELECTRICAL

26 05 00	Common Work Results for Electrical
26 05 19	Low Voltage Electrical Power Conductors & Cables
26 05 26	Grounding and Bonding for Electrical Systems
26 05 29	Hangers and Supports for Electrical Systems
26 05 33	Raceway and Boxes for Electrical Systems
26 05 36	Cable Trays for Electrical Systems
26 05 43	Underground Ducts and Raceways for Electrical Systems
26 05 53	Identification for Electrical Systems
26 09 23	Lighting Control Devices
26 24 16	Panelboards
26 27 26	Wiring Devices
26 41 13	Lightning Protection for Structures
26 51 00	Interior Lighting
26 56 00	Exterior Lighting



FRESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary for complete and operational electrical systems, as specified herein.
- B. This Section, as well as Division 1, concerns all other Sections in Division 26, and shall be considered a part of each of those Sections as if written in their entirety.

1.02 QUALITY ASSURANCE

A. ELECTRICAL CONTRACTORS' QUALIFICATIONS

Use adequate numbers of skilled workmen, trained and experienced in their crafts, and who are familiar with the specifications and methods of performing the work in this Division. A licensed Journeyman shall be on site at all times when electrical work is being performed. Electrical work shall be performed under the direct supervision of a Master Electrician who holds a valid license in the State of Texas.

B. WORKMANSHIP

Work shall be performed in accordance with quality, commercial practices. The appearance of finished work shall be of equal importance with its operation. Materials and equipment shall be installed based upon the actual dimensions and conditions at the project site. Locations for materials or equipment requiring an exact fit shall be field measured.

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00, SUBMITTALS and shall include:
 - 1. Component catalog number and manufacturing data sheet, indicating pertinent data and identifying each component by the item number and nomenclature as specified.
 - 2. Component drawings showing dimensions, mounting, and external connection details in AutoCAD format.
 - 3. Complete interconnection and point to point wiring diagrams in AutoCAD format for all field control and instrumentation wiring between instruments, electrical equipment, starters, VFDs, etc.. A hard copy shall be submitted to the Engineer for approval prior to the final AutoCAD files being submitted. Interconnection/wiring diagrams shall include cable numbers, wire tags, actual equipment terminal strip numbers, etc.
 - 4. The Contractor shall provide a monthly report to the Owner/Engineer for review stating that the Master Electrician has been to the job site and thoroughly reviewed the work. The report shall be signed by the Master Electrician and include the data and time the Master Electrician was on site.
 - 5. Operation and maintenance manuals shall contain the shop drawings, submittals, spare part lists, schematics, final wiring diagrams with any changes made during start-up and maintenance procedures.
 - 6. Unless other additional information is required by the detailed equipment specifications, the following information shall be included for motors:
 - a. Motor identification number and nomenclature as specified

- b. Make and motor type
 - c. Brake horsepower of the motor
 - d. Locked rotor current at full load
 - e. Motor efficiency at full load (3-phase motors only)
 - f. Starting torque
 - g. Method of insulating and impregnating motor coils (3-phase only)
 - h. Speed of the motor at full torque
 - i. Full load current
 - j. Service factor
7. The Contractor shall:
- a. Prepare, and keep up-to-date, the Record Drawings and detailed construction drawings;
 - b. Record the exact locations of each of these differences, sizes and details of the Construction Work as executed, with cross-references to and other requirements on the Record Drawings.
 - c. Keep the Record Drawings on the Work Site;
 - d. Upon completion of the Work, or at such other time as may be determined by the Engineer, submit the Record Drawings and copies to the Owner's Representative in accordance with the Owner's Requirements.
 - e. Underground Interference drawing showing all underground duct banks, ground rods, ground conductors, pipes, piers, vaults, manholes, pull boxes, etc. that clearly identifies the location and routing of these systems. All interferences shall be brought to the Engineer's attention.
 - f. Provide revised drawings in AutoCAD noting any changes made to equipment during start-up.
8. The Contractor shall provide an 11x17 wall mounted copy of the one-line diagram in the electrical room as follows:
- a. The copy shall be in AutoCAD format, black and white and shall include all changes to the sheet from addenda, field orders and change orders.
 - b. The copy shall be framed in a picture frame with plexiglass. The copy of the sheet shall lay flat against the glass without any wrinkles and other material necessary for the copy to lay flat shall be provided within the picture frame.

1.04 STANDARDS

- A. Electrical work shall be executed in accordance with local, State and national codes, ordinances and regulations which have jurisdiction or authority over the work. If the standards and codes conflict with each other, the most stringent shall apply. The applicable provisions of the following standard shall apply as if written here in their entirety:

National Electrical Manufacturer Association (NEMA)

American Society for Testing and Materials (ASTM)

National Fire Protection Association (NFPA)

National Electrical Safety Code (NESC)

Institute of Electrical and Electronic Engineers (IEEE)

National Electrical Code (NEC)

Underwriters' Laboratories (UL)

American National Standards Institute (ANSI)

Uniform Building Code (UBC)
Occupational Safety and Health Administration (OSHA)
Local utility companies
Local Electrical Ordinance
Rural Electrification Association (REA)
Insulated Power Cable Engineers Association (IPCEA)
International Electrical Testing Association (NETA)
National Electrical Contractors Association (NECA)
Association Edison Illuminating Companies (AEIC)

- B. Electrical work shall be performed under the direct supervision of a Master Electrician who holds a valid license in the State of Texas.
- C. Contractor shall submit the company names of the electrical contractor with the bid documents.

1.05 DELIVERY AND STORAGE

- A. Follow the Manufacturer's directions for the delivery, storage and handling of equipment and materials. Tightly cover equipment and materials and protect it from dirt, water, chemical or mechanical injury and theft. Major electrical equipment shall be stored indoors and space heaters energized where applicable. Equipment that will be stored indoors for an extended period of time and that do not have space heaters shall have a 100 watt incandescent light placed in it and energized to eliminate the build-up of condensation in the equipment. Coordinate with equipment manufacturer for storage requirements. Damaged equipment shall not be acceptable. Upon installation, protect the materials until the work is completed and accepted by the Owner.

1.06 JOB CONDITIONS

- A. Permits, licenses and inspections shall be secured and paid for as required by law for the completion of the work. Certificates of approval shall be secured, paid for, and delivered to the Owner before receiving the final acceptance of the work.
- B. The location of materials, equipment, devices and appliances indicated are approximate and subject to revisions at the time the work is installed. Final location shall be as proposed by the Contractor and approved by the Engineer.
- C. Should project conditions require any rearrangement of work, or if equipment or accessories can be installed to a better advantage than the general arrangement of work on the plans, the Contractor shall before proceeding with the work prepare and submit plans of the proposed rearrangement for the Engineer's review and approval.
- D. Motor Horsepower ratings identified are anticipated ratings. If the actual equipment is a different size, the contractor shall provide the appropriate wiring, conduit, over current protection, starters and accessories for a complete and working system at no cost to the owner.

- E. All enclosures for equipment unless specifically identified otherwise shall be NEMA 1, 14 gauge steel enclosures for indoor air conditioned areas and not exposed to a hazardous locations; NEMA 12, 304 stainless steel enclosures for indoor ventilated areas; or NEMA 4, FRP for rooms housing Chlorine; or NEMA 4X, 304 stainless steel for exterior applications and all other locations.

2.00 EXECUTION

2.01 INSTALLATION

- A. Maintain the waterproof integrity of conduit penetrations through the roof, exterior walls and floors.
- B. Install stainless steel sleeves for each conduit passing through floors. Extend sleeves 1-1/2" above the floor slab and grout watertight. The sleeve sizes shall permit the subsequent insertion of a properly sized conduit or raceway.
- C. Install PVC, pipe sleeves around the conduit and raceway which pass through concrete beams or walls and masonry exterior walls. The inside diameter of the sleeves shall be at least 1/2" greater than the outside of the service pipes. After the pipes are installed into these sleeves, fill the annular space between the pipes and sleeves with mastic. The complete installation shall be watertight and the fire rating of penetrations through walls, floors and ceilings shall be maintained. All below grade penetrations shall utilized Link-Seal.
- D. Submit location drawings and obtain Engineer approval prior to installing conduit penetrations through slabs, beams, and walls. Install stainless steel pipe sleeves around the conduit and raceway which pass through concrete beams or walls and masonry exterior walls. The inside diameter of the sleeves shall be at least 1/2" greater than the outside of the service pipes. After the pipes are installed into these sleeves, fill the annular space between the pipes and sleeves with mastic. The complete installation shall be watertight and the fire rating of penetrations through walls, floors and ceilings shall be maintained.
- E. Install steel reinforced concrete foundations below floor mounted battery banks, switchboards, panelboards, transformers, and other floor mounted electrical equipment. Concrete foundations shall not be less than 4" high. Neatly chamfer top edges. Concrete foundations shall be 6" wider and 6" longer than the base of the equipment being installed. Concrete shall be in accordance with Division 03, and shall be reinforced with a minimum of 6" x 6" #6 welded wire mesh.
- F. Route all conduits parallel to building lines, columns, or steel route conduits near to columns and roof beams.

2.02 CUTTING AND PATCHING

- A. Provide adequate support during cutting operations to prevent any damage to the affected masonry. Where openings are cut through masonry walls, provide lintels or structural supports to protect the remaining masonry. The cutting of structural members shall not be permitted without the specific written approval of the Engineer.

2.03 PAINTING

- A. Painting shall be in accordance with Division 09. Maintain the original factory finish on material and equipment installed, unless specifically indicated on the plans or specifications. If the finish is marred in transit or during installation, re-finish to a neat, workmanlike

appearance. Leave equipment and raceway systems clean and free of grease, dirt, rust, and in a suitable condition for painting.

2.04 EXCAVATION, TRENCHING, BACKFILLING AND GRADING

- A. Prior to any excavation or trenching, notify the Owner's representative, utility companies and Owner's facilities department. Allow sufficient time for utilities to be located prior to excavation to avoid disruption of services. Provide a minimum of 72 hours written notice to the Owner prior to trenching or excavation. Do not proceed with trenching or excavation until authorized by the Owner. Utilities or services which are damaged, which are identified prior to excavation or trenching, or where confirmation by utility companies has not been obtained verifying that utilities are marked, shall be repaired to operable condition immediately, at no cost to the Owner.
- B. Barricade open trenches and excavations for the entire duration of the project. Barricades for excavations shall have warning lights maintained during hours of darkness. Trenches shall be marked with warning tape, or access to trenches shall be prohibited with readily identifiable sawhorses, warning tape or other acceptable means. Barriers shall be illuminated or recognizable during hours of darkness. Barriers and tape shall be properly maintained at all times.
- C. Protect all adjacent work, structures and properties. Damage to adjacent work, structures or properties shall be repaired, or the cost of repair reimbursed in full.
- D. All construction areas shall be finally graded as indicated on the contract documents, or to the conditions of the site prior to construction. Grading shall bring the site back to the existing conditions as close as practical. Turfed areas shall be sodded, or hydro-mulched with matching turf. Landscaping shall be replaced with identical shrubbery, ground cover, or plants as existed. Contractor shall be responsible for maintaining water on new turf and landscaping until established. If new turf and landscaping is impractical due to weather conditions, contractor shall provide satisfactory arrangements to have turf and landscaping furnished and installed at the earliest opportunity thereafter. Provide a 90-day year warranty on new turn and landscaping.
- E. Determine if irrigation systems exist prior to trenching and excavation. Obtain record or as-built drawings and locate control wiring and pressure main branches and devices. Determine by actual operation that systems are functional and repair or replace damaged systems to their original condition prior to beginning construction.

2.05 ACCESS DOORS

- A. Wherever access is required in walls, ceilings, or soffits to concealed junction boxes, pull boxes or other electrical equipment, provide and install access doors. Install panels in locations approved by the Engineer. Paint as directed.

2.06 CLEAN AND ADJUST

- A. Remove shipping labels, dirt, paint, grease, and stains from equipment. Remove debris as it accumulates. Upon completion of work, clean electrical equipment and the entire electrical installation.

END OF SECTION

26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS & CABLES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install 600 volt wires and cables. Electrical work shall be in accordance with Section 26 05 00, COMMON WORK RESULTS FOR ELECTRICAL.
- B. Work shall include building wire, cable, wiring connections and terminations, and modular wiring systems.

1.02 QUALITY ASSURANCE: TESTING

Megger test circuits for continuity and ground. Verify phasing at connection points. Torque test conductor connections and terminations to the Manufacturer's recommended values. Megger tests shall be performed by a testing company with a minimum of 10 years experience.

1.03 SUBMITTALS

Submittals shall be in accordance with Section 01 33 00, SUBMITTALS and shall include:

- A. Low voltage wire
- B. Ground wire
- C. Shielded cable

1.04 STANDARDS

The applicable provisions of the following standards shall apply as if written here in their entirety:

- ICEA S-19-81/NEMA WC-3 Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy
- ICEA S-61-402/NEMA WC-5 Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

1.05 DELIVERY AND STORAGE

Deliver cable and wire to the project site in the original packages. Conductors with damaged insulation or exposed nylon jacketing shall not be permitted.

2.00 PRODUCTS

2.01 CONDUCTORS AND CABLES

- A. **CONDUCTORS:** Soft-drawn, annealed copper with a conductivity of not less than that of 98% pure copper bearing the U.L. label. The minimal size shall be #12 unless specified otherwise on plans. Conductors #8 or larger shall be stranded. Utilize single conductors.
- B. **SINGLE CONDUCTORS:** Conductor with thermoplastic insulation rated at 600 volts and insulated with type THHN/THWN insulation. Wire shall be water tank tested and approved as machine tool wire, in accordance with National Machine Tool Builders Association. Wire in light fixture channels and other special locations shall be as specifically noted for temperature in NEC Article 300. Wire shall be manufactured by Southwire, Okonite, General Cable, Houston Wire & Cable.

- C. **GROUND WIRE:** Class B stranded tin-plated conductor without insulation.
- D. **PAIRED SHIELDED CABLE:** Individually and overall shielded 18 gauge, 7/28 stranded, tinned copper conductors with .021" extruded PVC; .004" nylon insulation twisted into pairs, stranded into a core and enclosed by a non-hygroscopic core tape, 100% coverage, helically wound, aluminum foil shield, drain wire, and .050" minimum extruded PVC jacket. Pairs shall be black/red or black/white numbered. Cables shall be 600 volts in accordance with NEC-725 and IEEE 383 and shall be suitable for wet location. Cables shall be manufactured by Alpha Okonite, General Cable, Southwire, Belden, Houston Wire and Cable.
- E. **TRAY CABLE:** Type TC; multi-conductor cable specifically approved for the installation of cable trays, in accordance with NEC Article 340. Cable shall be Okonite No. Okoseal, N series, General Cable, or Southwire. Each cable conductor shall be insulated with THHN/THWN type insulation rated at 600 volts. The individual conductors shall be twisted together and jacketed with a PVC outer covering containing a U.L. label and necessary identification, including the Manufacturer, the number of conductors, size, THWN or THHN conductors, sun-resistance, and other pertinent information.
- F. **SERVICE ENTRANCE CABLES:** Type USE shall be used for overhead service entrances. Type THWN cable in raceway shall be used for underground service entrances.

2.02 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. **Service Entrance:** Type THHN-THWN, single conductors in raceway.
- B. **Exposed Feeders:** Type THHN-THWN, single conductors in raceway.
- C. **Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground:** Type THHN-THWN, single conductors in raceway.
- D. **Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground:** Type THHN-THWN, single conductors in raceway.

2.03 CONNECTORS AND SPLICES

- A. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Hubbell Power Systems, Inc.
 - 3. O-Z/Gedney; EGS Electrical Group LLC.
 - 4. 3M; Electrical Products Division.
 - 5. Tyco Electronics Corp.
- B. **Description:** Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

3.00 EXECUTION

3.01 PREPARATION

Completely swab raceway system before installing conductors. Do not use cleaning agents and lubricants which have a deleterious effect on the conductors or their insulation.

3.02 INSTALLATION

A. GENERAL

1. Conductors shall be continuous from terminal block to terminal block without splice. Condulet type fittings shall not contain splices. No splicing of conductors shall be performed in any below ground structure.
 2. Splice only in junction or outlet boxes for branch circuits. Splices for all other circuits shall be disallowed. Neatly train wiring inside boxes, equipment and panelboards. Pull conductors into a raceway at the same time and use U.L. listed, wire pulling lubricant for pulling No. 4AWG and larger wire. Install raceway first as a complete system without conductors. Do not install pull wires and conductors until the raceway system is in place.
 3. The minimum size conductor permitted is #12 AWG, except as specifically indicated on the plans. Wire shall bear the approval of Underwriter's Laboratories, Inc. Conductors terminated on a screw termination shall have a crimp on type spade connector applied on the wire end, Panduit PanTerm.
 4. Colored, vinyl marking tape shall be allowed only on conductors greater than 8 AWG.
 5. Under no condition shall conductors of a different color be spliced together.
 6. Grouping conductors together into one conduit shall not be allowed where the plans indicate the conductors to be placed in separate conduits. Each home run shown on the plans shall be in its own conduit.
 7. Properly support cables in accordance with the NEC and manufacturer's recommendations in all raceways. Provide strain relief as required.
- B. SINGLE CONDUCTORS: Conductors shall be continuous from outlet to outlet and no splices shall be made except at outlets. Sufficient wire shall be left at outlets to make connections to equipment without straining.
- C. PAIRED SHIELDED AND TRIAD SHIELDED CABLE: Ground paired shielded and triad shielded cables at the instrument panel or starter end only and insulate from ground elsewhere. The shield shall be continuous for the entire run. The paired shielded and triad shielded cable shall not be laced with or placed in the same conduit with power cables and control cables. Each termination of paired shielded or triad shielded cable shall be coated with silicone jelly after termination. The shield of pair shielded cable and triad shielded cable shall only be broken when the conductors are terminated on terminal strips.

D. GROUND CONDUCTORS

1. Conduits and other raceway shall contain an equipment grounding conductor whether the raceway is metallic or not. Conduits, motors, cabinets, outlets, and other equipment shall be properly grounded in accordance with National Electrical Code requirements. Where ground wire is exposed to mechanical damage, install wire in rigid aluminum conduit. Make connections to equipment with solderless connections. All connections to ground rods shall be of the fused type utilizing an exothermic welding process.
2. Ground metallic material, including but not limited to metallic raceway, metallic boxes and metallic enclosures. Where metallic material is not connected by raceway to a solid ground, connect the metallic material to the largest equipment grounding conductor which it houses. Clean the metal surface under the grounding lug to bright metal. Grounding connections to motors shall be to the grounding stud which shall be threaded into the stationary frame; Use Burndy KC Servit. The ground wire shall not be lugged to a mounting bolt.
3. Ground wire shall be uninsulated tin plated copper sized as shown on the plans in all cases where a single ground wire is indicated to be installed in a conduit with no other conductors in the conduit, or where the ground wire is directly buried in earth or concrete. In all other cases, insulate ground wire with green insulation as specified for low voltage wire. Provide and size bonding conductors in accordance with the National Electrical Code.

END OF SECTION

26 05 26 GROUNDING & BONDING FOR ELECTRICAL SYSTEMS

1.00 GENERAL

1.01 WORK INCLUDED

Furnish labor, materials, equipment and incidentals necessary to install a complete grounding system in strict accordance with Article 250 of the National Electrical Code (NEC) as shown on the drawings or as specified herein. Electrical work shall be in accordance with Section 26 05 00, COMMON WORK RESULTS FOR ELECTRICAL.

1.02 SUBMITTALS

Submittal shall be in accordance with Section 01 33 00, SUBMITTALS and shall include:

- A. Grounding materials, equipment and processes.
- B. Product Data: For each type of product supplied.
- C. Field quality-control test reports.

1.03 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

1.04 JOB CONDITIONS

Measure the ground grid resistance with the earth test megger and install additional ground rods and conductors as required until the resistance to the ground conforms to National Electrical Code requirements. Ground resistance measurement shall not exceed 5 ohms. Add ground rods as required to bring resistance to 5 ohms and connect to grounding system.

2.00 PRODUCTS

2.01 MATERIALS

- A. GROUND RODS: Copper-clad, having a diameter of 3/4" and a minimum length of 10'.
- B. GROUND CABLES: Stranded, bare tinned copper of 98% conductivity and as specified in Section 26 05 19 Low Voltage Electrical Power Conductors & Cable.
- C. CONDUIT GROUND FITTINGS: Fittings for bonding ground cable to the conduit shall be FCI Burndy Corp., type NE or Thomas & Betts No. 3951 series.
- D. GROUND ROD BOXES: Precast Box with cast iron lid. Lid shall read "ground rod" on lid. Brooks Precast Model. "3-RT". Ground rod boxes located in driveway areas shall have an AASHTO H-20 rating.
- E. GROUND PLATE ELECTRODES: 20 gauge copper with terminated two (2) foot welded pigtail connection.

- F. EXOTHERMIC WELDING PROCESS: CADWELD MATERIALS – as manufactured by ERICO products.

2.02 PROCESSES

- A. All grounding system connections to building steel and ground rods shall be exothermically welded including all cable connections, and cable steel terminations.
- B. All materials involved must be from the same sources to insure compatibility. Connections made from this process shall meet the requirements of IEEE Standards 80 and 837 and as listed in MIL 419 and other standards, National Electrical Code, etc.

2.03 GROUNDING SYSTEM

Provide a grounding system that includes all connections and the testing of ground rods, ground cables, ground buses, conduits, fittings, anchor supports, thermite process materials and equipment and other materials required for a complete installation. Grounding system shall be installed and sized in accordance with the National Electrical Code.

3.00 EXECUTION

3.01 INSTALLATION

- A. Conductor Terminations and Connections:
 - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted/clamp type connectors.
 - 2. Underground Connections: Exothermically welded connectors, except at test wells and as otherwise indicated.
 - 3. Connections to Ground Rods at Test Wells: Exothermically welded connectors.
 - 4. Connections to Structural Steel: Exothermically welded connectors.
- B. Ground electrical work in accordance with NEC Article 250 and local codes.
- C. Install ground cables in conduits above grade or directly buried in earth to a depth of not less than 30" below grade. Installation to provide sufficient mechanical protection so as not to break ground cables or connections.
- D. Install ground cables continuously between connections. Splices shall not be permitted, except where indicated on the plans. Where ground cables pass through floor slabs, buildings, etc., and when not in metallic enclosures, provide a sleeve of approved, non-metallic materials.
- E. Install a green-colored, equipment grounding conductor in raceways. Size conductors in accordance with NEC Article 250.
- F. Where ground wire is directly buried in earth or concrete, use standard bare tinned copper cable, in all other cases install a green-colored insulation, equipment grounding conductor in accordance with Section 26 05 19 Low Voltage Electrical Power Conductors & Cable. Size conductors in accordance with NEC Article 250. Provide grounding conductors as required per the NEC.
- G. Metal conduits stubbed up into switchgear, motor control center or other electrical equipment shall be terminated with insulated grounding bushings and connected to the equipment

ground bus. Size the grounding wire in accordance with applicable sections of the National Electrical Code.

- H. Provide exothermic weld connection for extension to existing stub-up ground conductors.
- I. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
 - 1. Provide grounding and bonding jumpers as required per the NEC.
 - 2. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
 - 3. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
 - 4. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.
- J. Grounding and Bonding for Piping:
 - 1. Metal Water Service Pipe: Install insulated tinned copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes, using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
 - 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
 - 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- K. Liquid tight flexible metal conduit in sizes 1-1 1/2" or larger shall have bonding jumpers. Bonding jumpers shall be external, run in parallel (not spiraled) and fastened with plastic tie wraps. Contractor shall provide bonding jumpers sized in accordance with the National Electrical Code.
- L. All equipment enclosures, motor and transformer frames, conduit systems, cable armor, exposed structural steel and all other equipment and materials required by the NEC to be grounded, shall be grounded and bonded in accordance with the NEC. Provide grounding and bonding jumpers as required per the NEC.
- M. Ground transformer neutrals to the nearest available grounding electrode with a conductor sized in accordance with NEC Article 250.
- N. Run a grounding cable the full length of each cable tray section and bond to each cable tray section. Provide #4/0 bare copper in cable tray.
- O. Where exothermic bonding is used, molds shall be of the appropriate size for the wire and rod used. All bonds shall remain exposed for inspection of the Owner's Representative.
- P. Ground rod shall be installed such that the top of the ground rod is 6" below grade and enclosed by a ground rod box.

- Q. At each convenience outlet, install a grounding clip attached to the outlet box and leave a sufficient length of #12 wire with green-colored insulation to connect to the grounding terminal at the receptacle.
- R. Signal and Communication Equipment: For telephone, alarm, voice and data, and other communication equipment, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.
 - 1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on a 1/4"x2"x12" grounding bus.
 - 2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

3.02 INSPECTION

- A. Inspect the grounding and bonding system conductors and connections for tightness and proper installation.
- B. Use Biddle Direct Reading Earth Resistance Tester or equivalent to measure resistance to ground of the system. Perform testing in accordance with the test instrument manufacturer's recommendation using the fall of potential method.
- C. All test equipment provided under this shall be approved by the Engineer.
- D. Resistance to ground testing shall be performed during dry season. Submit test results in the form of a graph showing the number of points measured (12 minimum) and the numerical resistance to ground.
- E. Testing shall be performed before energizing the distribution system.
- F. A separate test shall be conducted for each building or system.

END OF SECTION

26 05 29 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.
 - 2. Construction requirements for concrete bases.

1.02 DEFINITIONS

- A. RMC: Rigid metal conduit.

1.03 PERFORMANCE REQUIREMENTS

- A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.04 SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details and include calculations for the following:
 - 1. Trapeze hangers. Include Product Data for components.
 - 2. Slotted channel systems. Include Product Data for components.
 - 3. Nonmetallic slotted channel systems. Include Product Data for components.
 - 4. Equipment supports.

1.05 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

1.06 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

2.00 PRODUCTS

2.01 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel and Aluminum Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Available Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit.
 - b. Cooper B-Line, Inc.; a division of Cooper Industries.
 - c. ERICO International Corporation.
 - d. GS Metals Corp.
 - e. Thomas & Betts Corporation.
 - f. Unistrut; Tyco International, Ltd.
 - g. Wesanco, Inc.
 - 2. Metallic Coatings: For steel strut, hot-dip galvanized after fabrication and applied according to MFMA-4.
 - 3. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
 - 1. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated stainless steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
 - a. Available Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
 - 2) Empire Tool and Manufacturing Co., Inc.
 - 3) Hilti Inc.
 - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
 - 5) MKT Fastening, LLC.
 - 2. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

3. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
4. Toggle Bolts: All-steel springhead type.
5. Hanger Rods: Threaded steel.

2.02 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

3.00 EXECUTION

3.01 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 1. Secure raceways and cables to these supports with two-bolt conduit clamps.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits.

3.02 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA RMC may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 1. To Wood: Fasten with lag screws or through bolts.
 2. To New Concrete: Coordinate anchoring with tank manufacturer.
 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 4. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.

- 5. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
 - 6. To Light Steel: Sheet metal screws.
 - 7. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.03 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
- 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Touchup: Comply with requirements in Division 09 Section "High-Performance Coatings" for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

26 05 33 RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.02 DEFINITIONS

- A. LFNC: Liquidtight flexible nonmetallic conduit.
- B. RNC: Rigid nonmetallic conduit.

1.03 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings:
 - 1. Custom enclosures and cabinets.
 - 2. For handholes and boxes for underground wiring, including the following:
 - a. Duct entry provisions.
 - b. Frame and cover design.
 - c. Grounding details.
 - d. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons.
 - e. Joint details.
 - f. Clearly identify on cut sheets equipment being provided.

1.04 QUALITY ASSURANCE

- A. Comply with NFPA 70.

2.00 PRODUCTS

2.01 METAL CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Allied Tube & Conduit; a Tyco International Ltd. Co.
 - 2. Electri-Flex Co.
 - 3. O-Z Gedney; a unit of General Signal.

- 4. Wheatland Tube Company.
- B. Rigid Steel Conduit: ANSI C80.1.
- C. Aluminum Rigid Conduit: ANSI C80.5.
- D. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
 - 1. Comply with NEMA RN 1.
 - 2. Coating Thickness: 0.040 inch minimum.
- E. FMC: Zinc-coated steel.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight) and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch, with overlapping sleeves protecting threaded joints.
- G. Joint Compound for Rigid Steel Conduit: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.02 NONMETALLIC CONDUIT AND TUBING

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
 - 1. CANTEX Inc.
 - 2. CertainTeed Corp.; Pipe & Plastics Group.
 - 3. Lamson & Sessions; Carlon Electrical Products.
 - 4. Thomas & Betts Corporation.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. Fittings for RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.

2.03 METAL WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Cooper B-Line, Inc.
 - 2. Hoffman.
 - 3. Square D; Schneider Electric.
- B. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.

- C. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: Hinged type.
- E. Finish: Manufacturer's standard enamel finish.

2.04 BOXES, ENCLOSURES, AND CABINETS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 - 2. EGS/Appleton Electric.
 - 3. Hoffman.
 - 4. O-Z/Gedney; a unit of General Signal.
 - 5. RACO; a Hubbell Company.
 - 6. Robroy Industries, Inc.; Enclosure Division.
 - 7. Thomas & Betts Corporation.
- B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- C. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized, cast iron with gasketed cover.
- D. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

2.05 SOURCE QUALITY CONTROL FOR UNDERGROUND ENCLOSURES

- A. Handhole and Pull-Box Prototype Test: Test prototypes of handholes and boxes for compliance with SCTE 77. Strength tests shall be for specified tier ratings of products supplied.
 - 1. Tests of materials shall be performed by an independent testing agency.
 - 2. Strength tests of complete boxes and covers shall be by either an independent testing agency or manufacturer. A qualified registered professional engineer shall certify tests by manufacturer.
 - 3. Testing machine pressure gages shall have current calibration certification complying with ISO 9000 and ISO 10012, and traceable to NIST standards.

3.00 EXECUTION

3.01 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
 - 1. Exposed Conduit: Rigid steel or aluminum conduit.

2. Concealed Conduit, Aboveground: Rigid steel or aluminum conduit.
 3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried and concrete encased duct bank.
 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- B. Comply with the following indoor applications, unless otherwise indicated:
1. Exposed and Subject to Severe Physical Damage: Rigid aluminum conduit.
 2. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFNC.
 3. Damp or Wet Locations: Rigid aluminum conduit.
 4. Boxes and Enclosures: NEMA 12.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid aluminum Conduit: Use threaded rigid aluminum conduit fittings, unless otherwise indicated.
 2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with that material. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer.
- E. Do not install aluminum conduits in contact with concrete.
- F. Preparation; coordination of outlet box locations.
1. Provide electrical boxes in the locations shown on the Plans, and as required for splices, taps, wire pulling, equipment connections, and code compliance.
 2. Electrical box locations shown on Contract Drawings are approximate unless dimensioned. Verify locations of boxes and outlets prior to rough-in. Outlet locations may be modified to accommodate changes in door swings, space changes or to clear other interferences that arise or from job modifications. Make such modifications at no cost to the Owner as a matter of job coordination. Coordinate job conditions and notify the Engineer of discrepancies before proceeding with the installation of the work. Set wall boxes in advance of wall construction blocked in place, and secured. Set wall boxes flush with the finish. Install extension sleeves as required to extend boxes to finished surfaces.
 3. Unless otherwise noted, location of outlet boxes shall be as follows:

<u>Equipment or Outlets</u>	<u>Elevation *(A.F.F.)</u>
Toggle switches	4'0"
Receptacles	1'6"
Clocks and Clock outlets	7'0"

<u>Equipment or Outlets</u>	<u>Elevation *(A.F.F.)</u>
Motor starters	5'0"
Control stations	4'0"
Manual starters	5'0"

Thermostats in office areas	4'0"
Telephone outlets	1'6"
Circuit protective devices	6'6" to top of enclosure

* Above Finished Floor.

4. Locate and install boxes to allow access. Where installation is inaccessible, coordinate locations and sizes of required access doors in accordance with other sections of the specifications.

3.02 INSTALLATION

- A. Use separate pull boxes and junction boxes for electric power, control and communication.
- B. Complete raceway installation before starting conductor installation.
- C. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- D. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
- E. Raceways Embedded in Slabs:
 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
- F. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- G. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- H. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.
- I. Expansion-Joint Fittings for RMC: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F, and that has straight-run length that exceeds 25 feet.
 1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:
 - a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.
 - b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.
 - c. Indoor Spaces: Connected with the Outdoors without Physical Separation: 125 deg F temperature change.
 2. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change.
 3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.

- J. Flexible Conduit Connections: Use maximum of 72 inches of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

3.03 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- B. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- C. Cut sleeves to length for mounting flush with both surfaces of walls.
- D. Extend sleeves installed in floors 2 inches above finished floor level.
- E. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway unless sleeve seal is to be installed.
- F. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway, using joint sealant appropriate for size, depth, and location of joint.
- G. Roof-Penetration Sleeves: Seal penetration of individual raceways with flexible, boot-type flashing units applied in coordination with roofing work.
- H. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- I. Underground, Exterior-Wall Penetrations: Install cast-iron "wall pipes" for sleeves. Size sleeves to allow for 1-inch annular clear space between raceway and sleeve for installing mechanical sleeve seals.

3.04 SLEEVE-SEAL INSTALLATION

- A. Install to seal underground, exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway material and size. Position raceway in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.05 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.06 TERMINATIONS

Use threaded hubs for termination of conduits. Locknut termination of conduits shall not be used on this project.

END OF SECTION

26 05 36 CABLE TRAYS FOR ELECTRICAL SYSTEMS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUBMITTALS

- A. Product Data: Include data indicating dimensions and finishes for each type of cable tray indicated.
- B. Shop Drawings: For each type of cable tray.
 - 1. Show fabrication and installation details of cable tray, including plans, elevations, and sections of components and attachments to other construction elements. Designate components and accessories, including clamps, brackets, hanger rods, splice-plate connectors, expansion-joint assemblies, straight lengths, and fittings.
- C. Coordination Drawings: Floor plans and sections, drawn to scale. Include scaled cable tray layout and relationships between components and adjacent structural, electrical, and mechanical elements. Show the following:
 - 1. Vertical and horizontal offsets and transitions.
 - 2. Clearances for access above and to side of cable trays.
 - 3. Vertical elevation of cable trays above the floor or bottom of ceiling structure.
- D. Field quality-control reports.

1.03 QUALITY ASSURANCE

- A. Source Limitations: Obtain cable tray components through one source from a single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store indoors to prevent water or other foreign materials from staining or adhering to cable tray. Unpack and dry wet materials before storage.

2.00 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Chalfant Manufacturing Company.
2. Cooper B-Line, Inc.
3. Cope, T. J., Inc.; a subsidiary of Allied Tube & Conduit.
4. GS Metals Corp.; GLOBETRAY Products.
5. MONO-SYSTEMS, Inc.
6. MPHusky.
7. PW Industries.

2.02 MATERIALS AND FINISHES

A. Cable Trays, Fittings, and Accessories: Aluminum, complying with NEMA VE 1, Aluminum Association's Alloy 6063-T6 for rails, rungs, and cable trays, and Alloy 5052-H32 or Alloy 6061-T6 for fabricated parts; with Type 316 stainless-steel splice-plate fasteners, bolts, and screws

B. Cable Trays, Fittings, and Accessories: Stainless steel, Type 316, complying with NEMA VE 1.

C. CABLE TRAY: aluminum, conforming to the requirements of NEMA VE 1, Class 20C. The cable tray shall comply to the following:

1. Inside Depth: 6".
2. Inside Width: 24".
3. Straight Section Rung Spacing: 6".
4. Inside Radius of Fittings: 24".
5. Covers: [flanged] [non-flanged], [solid] [ventilated], [flush] [raised].

2.03 CABLE TRAY ACCESSORIES

A. Fittings: Tees, crosses, risers, elbows, and other fittings as indicated, of same materials and finishes as cable tray.

B. Barrier Strips: Same materials and finishes as cable tray.

C. Cable tray supports and connectors, including bonding jumpers, as recommended by cable tray manufacturer.

2.04 WARNING SIGNS

A. Lettering: 1-1/2-inch- high, black letters on yellow background with legend "WARNING! NOT TO BE USED AS WALKWAY, LADDER, OR SUPPORT FOR LADDERS OR PERSONNEL."

2.05 SOURCE QUALITY CONTROL

A. Perform design and production tests according to NEMA VE 1.

3.00 EXECUTION

3.01 CABLE TRAY INSTALLATION

- A. Comply with recommendations in NEMA VE 2. Install as a complete system, including all necessary fasteners, hold-down clips, splice-plate support systems, barrier strips, hinged horizontal and vertical splice plates, elbows, reducers, tees, and crosses.
- B. Remove burrs and sharp edges from cable trays.
- C. Fasten cable tray supports to building structure
 - 1. Place supports so that spans do not exceed maximum spans recommended by manufacturer.
 - 2. Construct supports from channel members, threaded rods, and other appurtenances furnished by cable tray manufacturer. Arrange supports in trapeze or wall-bracket form as required by application.
 - 3. Support bus assembly to prevent twisting from eccentric loading.
 - 4. Manufacture center-hung support, designed for 60 percent versus 40 percent eccentric loading condition, with a safety factor of 3.
 - 5. Locate and install supports according to NEMA VE 1.
- D. Make connections to equipment with flanged fittings fastened to cable tray and to equipment. Support cable tray independent of fittings. Do not carry weight of cable tray on equipment enclosure.
- E. Install expansion connectors where cable tray crosses building expansion joint and in cable tray runs that exceed dimensions recommended in NEMA VE 1. Space connectors and set gaps according to applicable standard.
- F. Make changes in direction and elevation using standard fittings.
- G. On vertical runs, anchoring equipment shall be bolt through only. Compression type anchors are not acceptable.
- H. Make cable tray connections using standard fittings.
- I. Workspace: Install cable trays with enough space to permit access for installing cables.
- J. Install barriers to separate cables of different systems, such as power, communications, and data processing; or of different insulation levels, such as 600, 5000, and 15 000 V.
- K. After installation of cable trays is completed, install warning signs in visible locations on or near cable trays.

3.02 CABLE INSTALLATION

- A. Install cables only when cable tray installation has been completed and inspected.
- B. Fasten cables on horizontal runs with cable clamps or cable ties as recommended by NEMA VE 2. Tighten clamps only enough to secure the cable, without indenting the cable jacket. Install cable ties with a tool that includes an automatic pressure-limiting device.

- C. On vertical runs, fasten cables to tray every 18 inches. Install intermediate supports when cable weight exceeds the load-carrying capacity of the tray rungs.
- D. In existing construction, remove inactive or dead cables from cable tray.
- E. Install covers after installation of cable is completed.

3.03 CONNECTIONS

- A. Ground cable trays according to manufacturer's written instructions.
- B. Install an insulated equipment grounding conductor with cable tray, in addition to those required by NFPA 70.

3.04 FIELD QUALITY CONTROL

- A. After installing cable trays and after electrical circuitry has been energized, survey for compliance with requirements. Perform the following field quality-control survey:
 - 1. Visually inspect cable insulation for damage. Correct sharp corners, protuberances in cable tray, vibration, and thermal expansion and contraction conditions, which may cause or have caused damage.
 - 2. Verify that the number, size, and voltage of cables in cable tray do not exceed that permitted by NFPA 70. Verify that communication or data-processing circuits are separated from power circuits by barriers.
 - 3. Verify that there is no intrusion of such items as pipe, hangers, or other equipment that could damage cables.
 - 4. Remove deposits of dust, industrial process materials, trash of any description, and any blockage of tray ventilation.
 - 5. Visually inspect each cable tray joint and each ground connection for mechanical continuity. Check bolted connections between sections for corrosion. Clean and retorquing in suspect areas.
 - 6. Check for missing or damaged bolts, bolt heads, or nuts. When found, replace with specified hardware.
 - 7. Perform visual and mechanical checks for adequacy of cable tray grounding; verify that all takeoff raceways are bonded to cable tray.
- B. Report results in writing.

3.05 PROTECTION

- A. Protect installed cable trays.
 - 1. Install temporary protection for cables in open trays to protect exposed cables from falling objects or debris during construction. Temporary protection for cables and cable tray can be constructed of wood or metal materials until the risk of damage is over.

END OF SECTION

26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:

- 1. Handholes and boxes.
- 2. Manholes.

1.03 DEFINITION

- A. RNC: Rigid nonmetallic conduit.

1.04 SUBMITTALS

- A. Product Data: For the following:

- 1. Duct-bank materials, including separators and miscellaneous components.
- 2. Ducts and conduits and their accessories, including elbows, end bells, bends, fittings, and solvent cement.
- 3. Accessories for manholes, handholes, and boxes.
- 4. Warning tape.

1.05 QUALITY ASSURANCE

- A. Comply with ANSI C2.
- B. Comply with NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver ducts to Project site with ends capped. Store nonmetallic ducts with supports to prevent bending, warping, and deforming.
- B. Store precast concrete and other factory-fabricated underground utility structures at Project site as recommended by manufacturer to prevent physical damage. Arrange so identification markings are visible.
- C. Lift and support precast concrete units only at designated lifting or supporting points.

1.07 PROJECT CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Owner's written permission.

1.08 COORDINATION

A. Coordinate layout and installation of ducts, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in the field.

B. Coordinate elevations of ducts and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of ducts and duct banks as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations from those indicated as required to suit field conditions and to ensure that duct runs drain to manholes and handholes.

2.00 PRODUCTS

2.01 CONDUIT

A. Rigid Steel Conduit: Galvanized. Comply with ANSI C80.1.

B. RNC: NEMA TC 2, Type EPC-40-PVC and Type EPC-80-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.

2.02 NONMETALLIC DUCTS AND DUCT ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cantex, Inc.
2. CertainTeed Corp.; Pipe & Plastics Group.
3. Condux International, Inc.
4. Electri-Flex Company.
5. IPEX Inc.

B. Duct Accessories:

1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and sizes of ducts with which used, and selected to provide minimum duct spacings indicated while supporting ducts during concreting or backfilling.
2. Warning Tape: Underground-line warning tape specified in Division 26 Section "Identification for Electrical Systems."

2.03 SOURCE QUALITY CONTROL

A. Test and inspect precast concrete utility structures according to ASTM C 1037.

3.00 EXECUTION

3.01 UNDERGROUND DUCT APPLICATION

- A. Ducts for Electrical Feeders 600 V and Less: RNC, NEMA Type EPC-40-PVC, in concrete capped duct bank, unless otherwise indicated.
- B. Underground Ducts for Telephone, Communications, or Data Utility Service Cables: RNC, NEMA Type EPC-40-PVC, in concrete-capped duct bank, unless otherwise indicated.

3.02 DUCT INSTALLATION

- A. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes to drain in both directions.
- B. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches, both horizontally and vertically, at other locations, unless otherwise indicated.
- C. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.
- D. Building Wall Penetrations: Make a transition from underground duct to rigid steel conduit at least 10 feet outside the building wall without reducing duct line slope away from the building, and without forming a trap in the line. Use fittings manufactured for duct-to-conduit transition. Install conduit penetrations of building walls as specified in Division 26 Section "Common Work Results for Electrical."
- E. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig hydrostatic pressure.
- F. Pulling Cord: Install 100-lbf- test nylon cord in ducts, including spares.

3.03 INSTALLATION OF CONCRETE MANHOLES, HANDHOLES, AND BOXES

- A. Precast Concrete Handhole and Manhole Installation:
 - 1. Comply with ASTM C 891, unless otherwise indicated.
 - 2. Install units level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances.
 - 3. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
- B. Elevations:
 - 1. Install handholes with bottom below the frost line, 12 inches below grade.

2. Handhole Covers: In paved areas and trafficways, set surface flush with finished grade. Set covers of other handholes 1 inch above finished grade.
 3. Where indicated, cast handhole cover frame integrally with handhole structure.
- C. Hardware: Install removable hardware, including pulling eyes, cable stanchions, and cable arms, and insulators, as required for installation and support of cables and conductors and as indicated.

3.04 INSTALLATION

- A. Conduits shall enter manholes/handholes a minimum of 12" above the finished floor of the manhole/handhole.

3.05 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
1. Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
 2. Pull aluminum or wood test mandrel through duct to prove joint integrity and test for out-of-round duct. Provide mandrel equal to 80 percent fill of duct. If obstructions are indicated, remove obstructions and retest.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.

3.06 CLEANING

- A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

END OF SECTION

26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Underground-line warning tape.
 - 5. Warning labels and signs.
 - 6. Instruction signs.
 - 7. Equipment identification labels.
 - 8. Miscellaneous identification products.

1.02 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.03 QUALITY ASSURANCE

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

2.00 PRODUCTS

2.01 POWER RACEWAY IDENTIFICATION MATERIALS

- A. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.02 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of leg-end label.
- B. Circuits shall be tagged at terminations (both ends), in pull boxes, cabinets, and enclosures as follows:
 - 1. Tags relying on adhesives or tapes-on markers are not acceptable.
 - 2. Provide conductor tags for conductors No. 10 AWG and below with legible permanent sleeve of yellow or white PVC with machine printed black marking, Raychem TMS sleeves or approved equal.
 - 3. Provide tags for cables and for conductors No. 8 AWG and larger consisting of permanent nylon marker plates with legible designations hot stamped on the plate. Attach these marker plates to conductors and cables with plastic wire wraps. Tags shall be Raychem TMS-CM cable markers or approved equal.
 - 4. Tags shall be imprinted with panelboard and panelboard position number (e.g. LA3-23) for conductors fed from panelboards. Other conductors shall have tags imprinted with the MCC which feeds the conductors (e.g. MCC 1).
 - 5. Switchlegs shall have the designation described above on their tags, plus an "S" suffix. Travelers shall have the designation described above on their tags, plus a "T" suffix.
 - 6. Where more than one neutral is present with a group of conductors, a tag shall be applied to each neutral indicating which phase conductors are served by each neutral (e.g. HA-2, 4, 6).

2.03 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.

2.04 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
 - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
 - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
 - 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
 - 1. Comply with ANSI Z535.1 through ANSI Z535.5.
 - 2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
 - 3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

2.05 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.

- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Warning label and sign shall include, but are not limited to, the following legends:
 - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.06 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
 - 1. Engraved legend with black letters on white face.
 - 2. Punched or drilled for mechanical fasteners.
 - 3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.07 EQUIPMENT IDENTIFICATION LABELS

- A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

3.00 EXECUTION

3.01 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with stainless steel mechanical fasteners appropriate to the location and substrate.
- F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
- G. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- H. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multi-

ple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

- I. Painted Identification: Comply with requirements in Division 09 painting Sections for surface preparation and paint application.

3.02 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
 1. Emergency Power.
 2. Power.
 3. UPS.
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded ,service and branch-circuit conductors.
 - a. Color shall be factory applied.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral: White
 - c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
- C. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
- D. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
- E. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
 1. Limit use of underground-line warning tape to direct-buried cables.
 2. Install underground-line warning tape for both direct-buried cables and cables in raceway.

- F. **Workspace Indication:** Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- G. **Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting:** Self-adhesive warning labels.
1. Comply with 29 CFR 1910.145.
 2. Identify system voltage with black letters on an orange background.
 3. Apply to exterior of door, cover, or other access.
 4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
 - a. Power transfer switches.
 - b. Controls with external control power connections.
- H. **Operating Instruction Signs:** Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- I. **Equipment Identification Labels:** On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. **Labeling Instructions:**
 - a. **Indoor Equipment:** Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch high letters on 1-1/2-inch high label; where two lines of text are required, use labels 2 inches high.
 - b. **Outdoor Equipment:** Engraved, laminated acrylic or melamine label.
 - c. **Elevated Components:** Increase sizes of labels and letters to those appropriate for viewing from the floor.
 - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
 2. **Equipment to Be Labeled:**
 - a. **Panelboards:** Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.
 - b. Enclosures and electrical cabinets.
 - c. Access doors and panels for concealed electrical items.
 - d. **Transformers:** Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
 - e. Emergency system boxes and enclosures.
 - f. Enclosed switches.
 - g. Enclosed circuit breakers.

- h. Enclosed controllers.
 - i. Push-button stations.
 - j. Power transfer equipment.
 - k. Contactors.
 - l. Remote-controlled switches, dimmer modules, and control devices.
 - m. Battery-inverter units.
 - n. Battery racks.
 - o. Power-generating units.
 - p. Monitoring and control equipment.
 - q. UPS equipment.
-

END OF SECTION 26 05 53

26 09 23 LIGHTING CONTROL DEVICES

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following lighting control devices:
 - 1. Outdoor photoelectric switches.
 - 2. Lighting contactors.
- B. Related Sections include the following:
 - 1. Division 26 Section "Wiring Devices" for manual light switches.

1.03 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show installation details for occupancy and light-level sensors.
 - 1. Interconnection diagrams showing field-installed wiring.
- C. Field quality-control test reports.
- D. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals.

1.04 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.05 COORDINATION

- A. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression system, and partition assemblies.

2.00 PRODUCTS

2.01 OUTDOOR PHOTOELECTRIC SWITCHES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Area Lighting Research, Inc.; Tyco Electronics.
 - 2. Grasslin Controls Corporation; a GE Industrial Systems Company.

3. Intermatic, Inc.
 4. Lithonia Lighting; Acuity Lighting Group, Inc.
 5. Novitas, Inc.
 6. Paragon Electric Co.; Invensys Climate Controls.
 7. Square D; Schneider Electric.
 8. TORK.
 9. Touch-Plate, Inc.
 10. Watt Stopper (The).
- B. Description: Solid state, with SPST dry contacts rated for 1800-VA tungsten, to operate connected relay, contactor coils, or microprocessor input; complying with UL 773A.
1. Light-Level Monitoring Range: 1.5 to 10 fc, with an adjustment for turn-on and turn-off levels within that range, and a directional lens in front of photocell to prevent fixed light sources from causing turn-off.
 2. Time Delay: 15-second minimum, to prevent false operation.
 3. Surge Protection: Metal-oxide varistor, complying with IEEE C62.41.1, IEEE C62.41.2, and IEEE 62.45 for Category A1 locations.
 4. Mounting: Twist lock complying with IEEE C136.10, with base-and-stem mounting or stem-and-swivel mounting accessories as required to direct sensor to the north sky exposure.

2.02 LIGHTING CONTACTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Allen-Bradley/Rockwell Automation.
 2. ASCO Power Technologies, LP; a division of Emerson Electric Co.
 3. Eaton Electrical Inc.; Cutler-Hammer Products.
 4. GE Industrial Systems; Total Lighting Control.
 5. Square D; Schneider Electric.
- B. Description: Electrically operated and mechanically held, combination type with fusible switch, complying with NEMA ICS 2 and UL 508.
1. Current Rating for Switching: Listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballast with 15 percent or less total harmonic distortion of normal load current).
 2. Fault Current Withstand Rating: Equal to or exceeding the available fault current at the point of installation.
 3. Enclosure: Comply with NEMA 250.
 4. Provide with control and pilot devices as indicated on Drawings, matching the NEMA type specified for the enclosure.

2.03 CONDUCTORS AND CABLES

- A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

- B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18 AWG. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
- C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 14 AWG. Comply with requirements in Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.00 EXECUTION

3.01 SENSOR INSTALLATION

- A. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

3.02 CONTACTOR INSTALLATION

- A. Mount electrically held lighting contactors with elastomeric isolator pads, to eliminate structure-borne vibration, unless contactors are installed in an enclosure with factory-installed vibration isolators.

3.03 WIRING INSTALLATION

- A. Wiring Method: Comply with Division 26 Section "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size shall be 3/4 inch.
- B. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.
- C. Size conductors according to lighting control device manufacturer's written instructions, unless otherwise indicated.
- D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.04 IDENTIFICATION

- A. Identify components and power and control wiring according to Division 26 Section "Identification for Electrical Systems."
 - 1. Identify controlled circuits in lighting contactors.
- B. Label contactors with a unique designation.

3.05 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 - 1. After installing time switches and sensors, and after electrical circuitry has been energized, adjust and test for compliance with requirements.
 - 2. Operational Test: Verify operation of each lighting control device, and adjust time delays.
- B. Lighting control devices that fail tests and inspections are defective work.

END OF SECTION

26 24 16 PANELBOARDS

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications apply to this Section.

1.02 WORK INCLUDED

- A. Section Includes:

- 1. Distribution panelboards.
- 2. Lighting and appliance branch-circuit panelboards.
- 3. Load centers.
- 4. Electronic-grade panelboards.

1.03 DEFINITIONS

- A. SVR: Suppressed voltage rating.
- B. SPD: Surge Protective Device

1.04 SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Provide cut sheets clearly identifying breaker being provided.
 - 5. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
 - 7. Include wiring diagrams for power, signal, and control wiring.
 - 8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device.
- C. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.05 QUALITY ASSURANCE

- A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- C. Comply with NEMA PB 1.
- D. Comply with NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.
- B. Handle and prepare panelboards for installation according to NEMA PB 1.

1.07 PROJECT CONDITIONS

- A. Environmental Limitations:
 1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
 2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:
 - a. Ambient Temperature: Not exceeding minus 22 deg F to plus 104 deg F.
 - b. Altitude: Not exceeding 6600 feet.

1.08 COORDINATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

1.09 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion.

1.10 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Keys: Two spares for each type of panelboard cabinet lock.
 - 2. Circuit Breakers Including GFCI and Ground Fault Equipment Protection (GFEP) Types: Two spares for each panelboard.
 - 3. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
 - 4. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

2.00 PRODUCTS

2.01 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Enclosures: Surface-mounted cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 3R.
 - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - 3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.
 - 5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
 - 6. Finishes:
 - a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - b. Back Boxes: Same finish as panels and trim.
 - 7. Directory Card: Inside panelboard door, mounted in transparent card holder.
- B. Incoming Mains Location: Bottom.
- C. Phase, Neutral, and Ground Buses:
 - 1. Material: Hard-drawn copper, 98 percent conductivity, tin-plated.
 - 2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
 - 3. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box.
 - 4. Split Bus: Vertical buses divided into individual vertical sections.
- D. Conductor Connectors: Suitable for use with conductor material and sizes.

- E. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- F. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Series rating of breakers is not acceptable.
- G. Circuit breakers shall be equipped with individually insulated, braced and protected connectors to the main bus. The front surface of all circuit breakers shall be flush with each other. Permanent, individual circuit numbers shall be affixed to each breaker in a common position. Tripped indication shall be clearly indicated by the breaker handle between the "ON" and "OFF" position. Space positions indicated on the plans shall be so that the additional connectors or bus will not be required to add breakers.
- H. Each panelboard shall have a short circuit current rating equal to or greater than the fault current available at each panel. Series rating of breakers shall not be permitted. Panelboards shall be marked with their maximum short circuit current rating at the supply voltage and bear the applicable U.L. label.

2.02 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: Circuit breaker.
- D. Branch Overcurrent Protective Devices: Bolt-in circuit breakers, replaceable without disturbing adjacent units.
- E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.
- F. Column-Type Panelboards: Narrow gutter extension, with cover, to overhead junction box equipped with ground and neutral terminal buses.

2.03 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
- B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:
 - a. Standard frame sizes, trip ratings, and number of poles.
 - b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
 - c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.
 - d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.
 - e. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage with field-adjustable 0.1- to 0.6-second time delay.
 - f. Multipole units enclosed in a single housing or factory assembled to operate as a single unit.
 - g. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in on or off position.

2.04 PANELBOARD SUPPRESSORS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 1. Current Technology; a subsidiary of Danahar Corporation.
 2. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 3. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 4. Liebert Corporation.
 5. Siemens Energy & Automation, Inc.
 6. Square D; a brand of Schneider Electric.
- B. Surge Protection Device: IEEE C62.41-compliant, integrally mounted, plug-in, solid-state, parallel-connected, modular (with field-replaceable modules) type, with sine-wave tracking suppression and filtering modules, UL 1449, latest edition, short-circuit current rating matching or exceeding the panelboard short-circuit rating, and with the following features and accessories:
 1. Accessories:
 - a. Fuses rated at 200-kA interrupting capacity.
 - b. Fabrication using bolted compression lugs for internal wiring.
 - c. Integral disconnect switch.
 - d. Redundant suppression circuits.
 - e. Redundant replaceable modules.
 - f. Arrangement with wire connections to phase buses, neutral bus, and ground bus.
 - g. LED indicator lights for power and protection status.
 - h. Six-digit, transient-event counter set to totalize transient surges.
 2. Peak Single-Impulse Surge Current Rating: 120 kA per mode/240 kA per phase.

3. Minimum single-impulse current ratings, using 8-by-20-mic.sec. waveform described in IEEE C62.41.2.
4. Withstand Capabilities: 12,000 IEEE C62.41, Category C3 (10 kA), 8-by-20-mic.sec. surges with less than 5 percent change in clamping voltage.
5. Protection modes and UL 1449 SVR for 240/120-V, single-phase, three-wire circuits shall be as follows:
 - a. Line to Neutral: 400 V.
 - b. Line to Ground: 400 V.
 - c. Neutral to Ground: 400 V.

2.05 ACCESSORY COMPONENTS AND FEATURES

- A. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

3.00 EXECUTION

3.01 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NEMA PB 1.1.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install panelboards and accessories according to NEMA PB 1.1.
- B. Mount top of trim 72 inches above finished floor unless otherwise indicated.
- C. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- D. Install overcurrent protective devices and controllers not already factory installed.
 1. Set field-adjustable, circuit-breaker trip ranges.
- E. Install filler plates in unused spaces.
- F. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- G. Comply with NECA 1.

3.03 IDENTIFICATION

- A. Create a directory to indicate installed circuit loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- B. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."
- C. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.04 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- C. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
- D. Prepare test and inspection reports. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.05 ADJUSTING

- A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.
- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.
 - 1. Measure as directed during period of normal system loading.
 - 2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
 - 3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
 - 4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.06 PROTECTION

- A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION

26 27 26 - WIRING DEVICES

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:

1. Receptacles, receptacles with integral GFCI, and associated device plates.
2. Twist-locking receptacles.
3. Receptacles with integral surge suppression units.
4. Isolated-ground receptacles.
5. Snap switches
6. Wall-box dimmers.
7. Wall-box motion sensors.
8. Solid-state fan speed controls.
9. Wall-switch and exterior occupancy sensors.
10. Communications outlets.
11. Pendant cord-connector devices.
12. Cord and plug sets.
13. Floor service outlets, poke-through assemblies, service poles, and multioutlet assemblies.

1.03 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GFCI: Ground-fault circuit interrupter.
- C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
- D. RFI: Radio-frequency interference.
- E. SPD: Surge Protection Device.
- F. UTP: Unshielded twisted pair.

1.04 SUBMITTALS

Submittals shall be in accordance with section 013300 Submittals and shall include:

- A. Shop Drawings:

1. List of legends and description of materials and process used for premarking wall plates.
2. Product Data: Provide cut sheets of all devices indicating model being provided, NEMA configuration, rating, color, etc.

B. Field quality-control test reports.

1.05 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of wiring device and associated wall plate through one source from a single manufacturer. Insofar as they are available, obtain all wiring devices and associated wall plates from a single manufacturer and one source.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

1.06 STANDARDS

The applicable provisions of the following standards shall all apply as if written here in their entirety.

- | | |
|--------------|---|
| A. NEMA WD-1 | General Color Requirements for Wiring Devices |
| B. NEMA WD-6 | Wiring Devices-Dimensional Specifications |
| C. UL 498 | Attachment Plugs and Receptacles |
| D. UL 943 | Ground-Fault Circuit-Interrupters |
| E. UL 1449 | Surge Protective Devices |
| F. NFPA 70 | National Electrical Code |

2.00 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
3. Leviton Mfg. Company Inc. (Leviton).
4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.02 STRAIGHT BLADE RECEPTACLES

A. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cooper; 5351 (single), 5352 (duplex).
 - b. Hubbell; HBL5351 (single), CR5352 (duplex).
 - c. Leviton; 5891 (single), 5352 (duplex).
 - d. Pass & Seymour; 5381 (single), 5352 (duplex).

2.03 GFCI RECEPTACLES

- A. General Description: Straight blade, **[feed] [non-feed]**-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, and UL 943, Class A, and include indicator light that is on when device is tripped.
- B. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include the following:
 - a. Cooper; GF20.
 - b. Pass & Seymour; 2084.
- C. Weatherproof, Specification Grade, GFCI, Duplex Convenience Receptacles, 125 V, 20A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL498
 1. Weatherproof receptacles shall be listed as weather resistant type in accordance with the National Electrical Code and shall include a weatherproof device cover.
 - a. Cooper: WRVGF20
 - b. Hubbell: BR20WHIWR
 - c. Leviton
 - d. Pass & Seymour

2.04 CORD AND PLUG SETS

- A. Description: Match voltage and current ratings and number of conductors to requirements of equipment being connected.
 1. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and equipment-rating ampacity plus a minimum of 30 percent.
 2. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

2.05 SNAP SWITCHES

- A. Comply with NEMA WD 1 and UL 20.
- B. Switches, 120/277 V, 20 A:
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include the following:
 - a. Cooper; 2221GY (single pole), 2222GY (two pole), 2223GY (three way), 2224GY (four way).

- b. Hubbell; CS1221GY (single pole), CS1222GY (two pole), CS1223GY (three way), CS1224GY (four way).
- c. Leviton; 1221-2GY (single pole), 1222-2GY (two pole), 1223-2GY (three way), 1224-2GY (four way).
- d. Pass & Seymour; 20AC1GRY (single pole), 20AC2 (two pole), 20AC3GRY (three way), 20AC4 (four way).

C. Pilot Light Switches, 20 A:

- 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include the following:
 - a. Cooper; 2221PL for 120 V and 277 V.
 - b. Hubbell; HBL1221PL for 120 V and 277 V.
 - c. Leviton; 1221-PLR for 120 V, 1221-7PLR for 277 V.
 - d. Pass & Seymour; PS20AC1-PLR for 120 V.
- 2. Description: Single pole, with neon-lighted handle, illuminated when switch is "ON."

2.06 WALL PLATES

- A. Single and combination types to match corresponding wiring devices.
 - 1. Plate-Securing Screws: Metal with head color to match plate finish.
 - 2. Material: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant, die-cast aluminum with lockable cover.

3.00 EXECUTION

3.01 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:
 - 1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
 - 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
 - 3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
 - 4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
 - 1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.

2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.

D. Device Installation:

1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

E. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

F. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

3.02 IDENTIFICATION

A. Comply with Division 26 Section "Identification for Electrical Systems."

1. Receptacles: Identify panelboard and circuit number from which served. Use hot, stamped or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.03 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated LED indicators of measurement.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is not acceptable.

3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

END OF SECTION

26 41 13 LIGHTNING PROTECTION FOR STRUCTURES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This Section includes lightning protection for the elevated storage tank structure.

1.02 DEFINITIONS

- A. LPI: Lightning Protection Institute.
- B. NRTL: National recognized testing laboratory.

1.03 SUBMITTALS

- A. Product Data: For air terminals and mounting accessories.
- B. Shop Drawings: Detail lightning protection system, including air-terminal locations, conductor routing and connections, and bonding and grounding provisions. Include indications for use of raceway, data on how concealment requirements will be met, and calculations required by NFPA 780 for bonding of grounded and isolated metal bodies.
- C. Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include data on listing or certification by an NRTL or LPI.
- D. Field inspection reports indicating compliance with specified requirements.
- E. Copy of U.L. Master Label Certificate for each facility.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who is an NRTL or who is certified by LPI as a Master Installer/Designer.
- B. Listing and Labeling: As defined in NFPA 780, "Definitions" Article.

1.05 COORDINATION

- A. Coordinate installation of lightning protection with installation of other building systems and components, including electrical wiring, supporting structures and building materials, metal bodies requiring bonding to lightning protection components, and building finishes.
- B. Coordinate installation of air terminals attached to roof systems with roofing manufacturer and Installer.

2.00 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Automatic Lightning Protection.
 - 2. ERICO International Corporation.
 - 3. Harger Lightning Protection, Inc.
 - 4. Heary Bros. Lightning Protection Co. Inc.
 - 5. Independent Protection Co.
 - 6. Robbins Lightning Inc.
 - 7. Thompson Lightning Protection, Inc.

2.02 LIGHTNING PROTECTION SYSTEM COMPONENTS

- A. Comply with UL 96.
- B. Roof-Mounting Air Terminals: NFPA Class II, copper, solid, unless otherwise indicated.
- C. Stack-Mounting Air Terminals: Stainless steel.
- D. Ground Rods, Ground Loop Conductors.

3.00 EXECUTION

3.01 INSTALLATION

- A. Install lightning protection components and systems according to UL 96A and NFPA 780.
- B. Install conductors with direct paths from air terminals to ground connections. Avoid sharp bends and narrow loops.
- C. Conceal the following conductors:
 - 1. System conductors.
 - 2. Down conductors.
 - 3. Interior conductors.
 - 4. Conductors within normal view from exterior locations at grade within 200 feet of building.
- D. Cable Connections: Use approved exothermic-welded connections for all conductor splices and connections between conductors and other components, except those above single-ply membrane roofing.
- E. Bond extremities of vertical metal bodies exceeding 60 feet in length to lightning protection components.
- F. A counterpoise installation may be used as a ground loop required by NFPA 780, provided counterpoise conductor meets or exceeds minimum requirements in NFPA 780.

1. Bond ground terminals to counterpoise conductor.
 2. Bond grounded metal bodies on building within 12 feet of ground to counterpoise conductor.
 3. Bond grounded metal bodies on building within 12 feet of roof to counterpoise conductor.
- G. Bond lightning protection components with intermediate-level interconnection loop conductors to grounded metal bodies of building at 60-foot intervals.
- H. Installation shall be performed by a certified master installer. Installer shall provide an Underwriters' Laboratories Master Label for the facilities.

3.02 CORROSION PROTECTION

- A. Do not combine materials that can form an electrolytic couple that will accelerate corrosion in the presence of moisture unless moisture is permanently excluded from junction of such materials.
- B. Use conductors with protective coatings where conditions would cause deterioration or corrosion of conductors.

3.03 FIELD QUALITY CONTROL

- A. UL Inspection: Provide inspections as required to obtain a UL Master Label for system.

END OF SECTION

26 51 00 INTERIOR LIGHTING

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:

1. Interior lighting fixtures, lamps, and ballasts.
2. Emergency lighting units.
3. Exit signs.
4. Lighting fixture supports.

1.03 DEFINITIONS

- A. BF: Ballast factor.
- B. CRI: Color-rendering index.
- C. CU: Coefficient of utilization.
- D. LER: Luminaire efficacy rating.
- E. Luminaire: Complete lighting fixture, including ballast housing if provided.
- F. RCR: Room cavity ratio.

1.04 SUBMITTALS

- A. Shop Drawing: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
 1. Physical description of lighting fixture including dimensions.
 2. Emergency lighting units including battery and charger.
 3. Ballast.
 4. Energy-efficiency data.
 5. Lighting fixtures.
 6. Structural members to which suspension systems for lighting fixtures will be attached.
- B. Qualification Data: For agencies providing photometric data for lighting fixtures.
- C. Field quality-control test reports.
- D. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.
- E. Warranties: Special warranties specified in this Section.

1.05 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

1.06 WARRANTY

- A. Special Warranty for Emergency Lighting Batteries: Manufacturer's standard form in which manufacturer of battery-powered emergency lighting unit agrees to repair or replace components of rechargeable batteries that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period for Emergency Lighting Unit Batteries: 10 years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining nine years.
- B. Special Warranty for Ballasts: Manufacturer's standard form in which ballast manufacturer agrees to repair or replace ballasts that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period for Electronic Ballasts: Five years from date of Substantial Completion.

1.07 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
 - 2. Plastic Diffusers and Lenses: 1 for every 100 of each type and rating installed. Furnish at least one of each type.
 - 3. Battery and Charger Data: One for each emergency lighting unit.
 - 4. Ballasts: 1 for every 100 of each type and rating installed. Furnish at least one of each type.

2.00 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified in Lighting Fixture Schedule.

2.02 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

- A. Fluorescent Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE 5 and NEMA LE 5A as applicable.
- B. Metal Parts: Free of burrs and sharp corners and edges.

- C. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- D. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- E. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- F. Plastic Diffusers, Covers, and Globes:
 - 1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
 - a. Lens Thickness: At least 0.125 inch minimum unless different thickness is indicated.
 - b. UV stabilized.
 - 2. Glass: Annealed crystal glass, unless otherwise indicated.

2.03 BALLASTS FOR LINEAR FLUORESCENT LAMPS

- A. Electronic Ballasts: Comply with ANSI C82.11; programmed-start type, unless otherwise indicated, and designed for type and quantity of lamps served. Ballasts shall be designed for full light output.
 - 1. Sound Rating: A.
 - 2. Total Harmonic Distortion Rating: Less than 10 percent.
 - 3. Transient Voltage Protection: IEEE C62.41, Category A or better.
 - 4. Operating Frequency: 20 kHz or higher.
 - 5. Lamp Current Crest Factor: 1.7 or less.
 - 6. BF: 0.85 or higher.
 - 7. Power Factor: 0.95 or higher.
 - 8. Parallel Lamp Circuits: Multiple lamp ballasts shall comply with ANSI C 82.11 and shall be connected to maintain full light output on surviving lamps if one or more lamps fail.
- B. Ballasts for Low-Temperature Environments:
 - 1. Temperatures 0 Deg F and Higher: Electronic or electromagnetic type rated for 0 deg F starting and operating temperature with indicated lamp types.

2.04 EMERGENCY LIGHTING UNITS

- A. Description: Self-contained units complying with UL 924.
 - 1. Battery: Sealed, maintenance-free, nickel-cadmium type.
 - 2. Charger: Fully automatic, solid-state type with sealed transfer relay.
 - 3. Operation: Relay automatically turns lamp on when power supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.

4. **Test Push Button:** Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
5. **LED Indicator Light:** Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
6. **Integral Time-Delay Relay:** Holds unit on for fixed interval of 10 minutes when power is restored after an outage.
7. **Integral Self-Test:** Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

2.05 FLUORESCENT LAMPS

- A. **Low-Mercury Lamps:** Comply with EPA's toxicity characteristic leaching procedure test; shall yield less than 0.2 mg of mercury per liter when tested according to NEMA LL 1.
- B. **T5 rapid-start low-mercury lamps,** rated 28 W maximum, nominal length of 45.2 inches, 2900 initial lumens (minimum), CRI 85 (minimum), color temperature 3500 K, and average rated life of 20,000 hours, unless otherwise indicated.

2.06 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. **Single-Stem Hangers:** 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. **Wires:** ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel.
- D. **Rod Hangers:** 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.

3.00 EXECUTION

3.01 INSTALLATION

- A. **Lighting fixtures:** Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
- B. **Suspended Lighting Fixture Support:**
 1. **Pendants:** Where longer than 48 inches, brace to limit swinging.
- C. **Adjust aimable lighting fixtures** to provide required light intensities as directed by Owner's Representative.
- D. **Connect wiring** according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.02 FIELD QUALITY CONTROL

- A. **Test for Emergency Lighting:** Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.

- B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION

26 56 00 EXTERIOR LIGHTING

1.00 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:

1. Exterior luminaires with lamps and ballasts.
2. Luminaire-mounted photoelectric relays.
3. Poles and accessories.

1.03 DEFINITIONS

- A. CRI: Color-rendering index.
- B. HID: High-intensity discharge.
- C. Luminaire: Complete lighting fixture, including ballast housing if provided.
- D. Pole: Luminaire support structure, including tower used for large area illumination.

1.04 STRUCTURAL ANALYSIS CRITERIA FOR POLE SELECTION

- A. Dead Load: Weight of luminaire and its horizontal and vertical supports, lowering devices, and supporting structure, applied as stated in AASHTO LTS-4.
- B. Live Load: Single load of 500 lbf, distributed as stated in AASHTO LTS-4.
- C. Wind Load: Pressure of wind on pole and luminaire, calculated and applied as stated in AASHTO LTS-4.
 - 1. Wind speed for calculating wind load for poles 50 feet or less in height is 100 mph.

1.05 SUBMITTALS

- A. Shop Drawings: For each luminaire, pole, and support component, arranged in order of lighting unit designation. Include data on features, accessories, finishes, and the following:
 1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.
 2. Details of attaching luminaires and accessories.
 3. Details of installation and construction.
 4. Luminaire materials.
 5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.
 6. Photoelectric relays.
 7. Ballasts, including energy-efficiency data.

8. Lamps, including life, output, and energy-efficiency data.
 9. Materials, dimensions, and finishes of poles.
 10. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.
 11. Anchor bolts for poles.
 12. Pole and Support Component Certificates: Signed by manufacturers of poles, certifying that products are designed for indicated load requirements in AASHTO LTS-4 and that load imposed by luminaire has been included in design.
- B. Qualification Data: For agencies providing photometric data for lighting fixtures.
- C. Field quality-control test reports.
- D. Warranty: Special warranty specified in this Section.

1.06 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with IEEE C2, "National Electrical Safety Code."
- C. Comply with NFPA 70.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Package poles for shipping according to ASTM B 660.
- B. Store poles on decay-resistant-treated skids at least 12 inches above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.
- C. Retain factory-applied pole wrappings on metal poles until right before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.

1.08 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.
 1. Warranty Period for Luminaires: Five years from date of Substantial Completion.
 2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.
 3. Warranty Period for Color Retention: Five years from date of Substantial Completion.
 4. Warranty Period for Poles: Repair or replace lighting poles and standards that fail in finish, materials, and workmanship within manufacturer's standard warranty period, but not less than five years from date of Substantial Completion.

1.09 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
2. Ballasts: 10 for every 100 of each type and rating installed. Furnish at least one of each type.

2.00 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified in Lighting Fixture Schedule.

2.02 LUMINAIRES, GENERAL REQUIREMENTS

- A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
- B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.
- D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.
- E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- G. Exposed Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
 1. White Surfaces: 85 percent.
 2. Specular Surfaces: 83 percent.
 3. Diffusing Specular Surfaces: 75 percent.
- J. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- K. Luminaire Finish: Manufacturer's standard paint applied to factory-assembled and -tested luminaire before shipping. Where indicated, match finish process and color of pole or support materials.
- L. Factory-Applied Finish for Steel Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
 2. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
- M. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
1. Color: As indicated on Lighting Fixture Schedule.

2.03 BALLASTS FOR HID LAMPS

- A. Comply with ANSI C82.4 and UL 1029 and capable of open-circuit operation without reduction of average lamp life. Include the following features, unless otherwise indicated:
1. Ballast Circuit: Constant-wattage autotransformer or regulating high-power-factor type.
 2. Minimum Starting Temperature: Minus 22 deg F.
 3. Normal Ambient Operating Temperature: 104 deg F.
 4. Ballast Fuses: One in each ungrounded power supply conductor. Voltage and current ratings as recommended by ballast manufacturer.

2.04 HID LAMPS

- A. Pulse-Start, Metal-Halide Lamps: Minimum CRI 65, and color temperature 4000 K.

2.05 POLES AND SUPPORT COMPONENTS, GENERAL REQUIREMENTS

- A. Structural Characteristics: Comply with AASHTO LTS-4.
1. Wind-Load Strength of Poles: Adequate at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of speed indicated in Part 1 "Structural Analysis Criteria for Pole Selection" Article, with a gust factor of 1.3.
 2. Strength Analysis: For each pole, multiply the actual equivalent projected area of luminaires and brackets by a factor of 1.1 to obtain the equivalent projected area to be used in pole selection strength analysis.
- B. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts, unless otherwise indicated.
- C. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.
1. Materials: Shall not cause galvanic action at contact points.
 2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication, unless stainless-steel items are indicated.
 3. Anchor-Bolt Template: Plywood or steel.
- D. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete."

2.06 STEEL POLES

- A. Poles: Comply with ASTM A 500, Grade B, carbon steel with a minimum yield of 46,000 psig; 1-piece construction up to 40 feet in height with access handhole in pole wall.
 - 1. Shape: Square, tapered, hinged.
 - 2. Hinge: External to pole with stainless steel hinge pin and protective wire guide.
 - 3. Mounting Provisions: Butt flange for bolted mounting on foundation or breakaway support.
- B. Steel Mast Arms: Single-arm type, continuously welded to pole attachment plate. Material and finish same as pole.
- C. Brackets for Luminaires: Detachable, cantilever, without underbrace.
 - 1. Adapter fitting welded to pole and bracket, then bolted together with stainless-steel bolts.
 - 2. Match pole material and finish.
- D. Grounding and Bonding Lugs: Welded 1/2-inch threaded lug, complying with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.
- E. Cable Support Grip: Wire-mesh type with rotating attachment eye, sized for diameter of cable and rated for a minimum load equal to weight of supported cable times a 5.0 safety factor.
- F. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.
- G. Pole Accessories: Hinged steel poles shall be provided with the following manufacturers accessories:
 - 1. Vibration dampener.
 - 2. Vandal resistant hardware.
 - 3. Hinged pole winch.
- H. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
 - 2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.
 - 3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
 - a. Color: As indicated on Lighting Fixture Schedule.

3.00 EXECUTION

3.01 LUMINAIRE INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated supports.

- C. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources.

3.02 POLE INSTALLATION

- A. Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.
- B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features, unless otherwise indicated on Drawings:
 - 1. Fire Hydrants and Storm Drainage Piping: 60 inches.
 - 2. Water, Gas, Electric, Communication, and Sewer Lines: 60 inches.
- C. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer. Concrete materials, installation, and finishing requirements are specified in Division 03 Section "Cast-in-Place Concrete."
- D. Raise and set poles using web fabric slings (not chain or cable).

3.03 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
- B. Steel Conduits: Comply with Division 26 Section "Raceway and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch-thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.04 GROUNDING

- A. Ground metal poles and support structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."
 - 1. Install grounding electrode for each pole, unless otherwise indicated.
 - 2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.
- B. Ground nonmetallic poles and support structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."
 - 1. Install grounding electrode for each pole.
 - 2. Install grounding conductor and conductor protector.
 - 3. Ground metallic components of pole accessories and foundations.

3.05 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
 - 1. Verify operation of photoelectric controls.

END OF SECTION

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK**

**CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 31 EARTHWORK

31 05 13 Soils for Earthwork



J. R. Baddaker 10-12-2012

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

31 05 13 SOILS FOR EARTHWORK

1.00 GENERAL

1.01 WORK INCLUDED

- A. This Section of the specifications describes the various classes of Earth Fill. All of the classes of Earth Fill contained in this specification may not be used on this project. The classes of Earth Fill used on this project are shown on the drawings or specified in other sections of the specifications. This Section does not include specifications for placement and compaction of Earth Fill. Specifications for placement and compaction of Earth Fill are included in other sections of the specifications and/or shown on the drawings.

1.02 STANDARDS

- A. Soil materials shall be classified into the appropriate class of Earth Fill shown below according to ASTM D2487 "Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)" or other appropriate methods as designated by the Engineer.

2.00 PRODUCTS

2.01 MATERIALS; CLASSIFICATIONS


- A. Class 1 Earth Fill: Limited to clays and sandy clays classified as CH material with a liquid limit greater than or equal to 50, a plasticity index greater than or equal to 25, and a minimum of 60 percent passing the No. 200 sieve, which are free of organic materials.
- B. Class 2 Earth Fill: Limited to clays and sandy clays classified as CH and CL materials with a coefficient of permeability less than or equal to 1.0×10^{-7} cm/sec, a liquid limit greater than or equal to 30, a plasticity index greater than or equal to 15, and more than 50 percent passing the No. 200 sieve, which are free of organic materials.
- C. Class 3 Earth Fill: Consist of any materials classified as CH, CL, SM, SP, SP-SM, SC, and GC, which have a minimum plasticity index of 4, which are free of organic materials.
- D. Class 4 Earth Fill: Consist of materials which are classified as SP, SM, SC, CL, or dual classifications thereof, which have a liquid limit less than or equal to 35 and a plasticity index of a minimum of 4 and a maximum of 15, which are free of organic materials.
- E. Class 5 Earth Fill: Consist of materials classified as SP or SP-SM which have a plasticity index less than or equal to 4 and a maximum of 12 percent passing the No. 200 sieve, which are free of organic materials.
- F. (Class 6 through Class 11 Reserved)
- G. Class 12 Earth Fill: Consist of soils suitable for topsoil which are relatively free of stones or other objectionable debris, which have sufficient humus content to readily support vegetative growth. The suitability of soils for topsoil shall be subject to the approval of the Engineer.

END OF SECTION

CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK
CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45

DIVISION 32 EXTERIOR IMPROVEMENTS

32 01 29 Paving Repair



J. R. Baddaker 10-12-2012

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

32 01 29 PAVING REPAIR

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to repair and resurface pavement. This section shall govern for the repair or replacement of pavement or other improved surfaces damaged or destroyed in performing the construction of water and sewer lines. Construction of such projects below pavement subgrade is covered by the North Central Texas Council of Governments Standard Specifications for Public Works Construction, 3rd Edition, Item 6.2, Excavation and Backfill.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
 - 1. Proposed material list and sources as record data.
 - 2. Experience record of proposed paving subcontractor as record data.

1.03 STANDARDS

- A. The applicable provisions of the following standards shall apply as if written here in their entirety:
 - 1. Texas Department of Transportation (TXDOT), Standard Specifications for Construction of Highways, Streets, and Bridges, latest edition.

1.04 JOB CONDITIONS

- A. Do not place materials when, in the opinion of the Owner's Representative, weather conditions are unsuitable. Do not place concrete when the temperature is 40 F and falling. Concrete may be placed when temperature is above 35 F and rising. Do not place asphalt or asphaltic concrete when the temperature is below 50 F and falling. Asphalt or asphaltic concrete may be placed when temperature is above 40 F and rising.

2.00 PRODUCTS

2.01 MATERIALS

- A. Concrete Pavement:
 - 1. Concrete: 3000 psi conforming to the North Central Texas Council of Governments Standard Specifications for Public Works Construction, 3rd Edition, Item 6.5, Street Cut Excavation and Repair Standards.
 - 2. Reinforcing Steel: Of the same size and spacing as in the existing concrete pavement unless otherwise indicated. New billet steel, deformed bars, conforming to ASTM A615, Grade 60.
- B. Asphalt Pavement:

1. Hot Mix Asphaltic Concrete:
 - a. HMAC Surface Course: Conforming to TXDOT Standard Specifications, Item 340, Type D.
 - b. Asphaltic Materials Used in the Mix: Conforming to TXDOT Standard Specifications, Item 300. The grade of asphalt shall be AC-10. Other grades of asphalt will be considered if weather conditions or mix design appear to warrant a change.
 - c. Aggregate: Conforming to TXDOT Standard Specification, Item 340.2.
 - d. Prime Coat: Conforming to TXDOT Standard Specifications, Item 300, Grade MC-30, or an appropriate asphalt emulsion.
 - e. Tack Coat: Cut-back asphalt RC-250 or MC-30 conforming to TXDOT Standard Specification, Item 300 unless otherwise approved by the Owner's Representative.
2. Two-Course Surface Treatment: Conforming to TXDOT Standard Specifications, Item 316. Asphaltic materials shall conform to TXDOT Standard Specifications, Item 300, AC-10 for hot weather and AC-5 for cooler weather. Aggregates shall conform to TXDOT Standard Specifications, Item 302. First course shall be Grade 1 and second course shall be Grade 2 (TXDOT Table 2 Aggregate Gradation Requirements).
3. Flexible Base: Of the depth and to the extent shown on the plans. Unless otherwise shown on plans, flexible base shall be one or more of the following listed options:
 - a. Flexible Base Material: Conforming to TXDOT Standard Specifications, Item 247, Type A, B, C, or D, Grade 1 or Grade 2.
 - b. Full Depth Asphaltic Concrete: Conforming to TXDOT Standard Specifications, Item 340, Type A (Coarse Base), B (Fine Base), or C (Coarse Surface).

3.00 EXECUTION

3.01 PREPARATION

- A. Concrete Pavement: Cut pavement in parallel straight lines a minimum of 1 foot outside trench walls on each side to permit pavement removal before trench excavation. Make cuts by sawing partial pavement depth to avoid cutting reinforcing steel. After concrete pavement is broken up and removed, cut off existing reinforcing steel to provide a minimum of 30 bar diameters lap with new reinforcing steel on each side and bent back to clear the trench for excavation and pipe laying.
- B. Asphalt Pavement: Cut paved surface in parallel straight lines outside trench walls prior to trench excavation. Before pavement replacement has begun, make additional straight line cuts and remove pavement a minimum of 1 foot outside trench walls.
- C. Subgrade: The subgrade, including granular trench backfill, shall be approved by the Owner's Representative before any base or pavement surface is replaced. Moisten, reshape, and re-compact subgrade as necessary to receive the base material.

3.02 INSTALLATION

- A. Concrete Pavement Replacement:

1. Install reinforcing steel on the approved subgrade and securely tie in place. Bend down existing reinforcing into proper position and securely tie each bar to new reinforcing bars. Support and tie reinforcing to steel bar chairs or other suitable supporting devices. New reinforcement shall be of equal size and spacing to existing steel, unless otherwise indicated. Install substantial forms to proper grade at pavement edges.
2. Rapidly deposit concrete on the subgrade in successive batches and distribute to the required depth and for the entire width of the pavement by shoveling or other approved methods. Do not use rakes in handling concrete. The placing operation shall be continuous. Level the concrete, as soon as placed, and then struck off and screed to such elevation above grade that when consolidated and finished the surface of the pavement shall be at the proper elevation. Tamp the entire surface and consolidate the concrete so as to insure maximum compaction and a minimum of voids.
3. After final floating and while the concrete is still workable, finish the surface to provide a uniform surface of gritty texture by brooming, use of belting, burlap drags or other approved methods.
4. Cure the concrete with an approved curing compound or other approved means. Concrete pavement shall not be opened to traffic until it has gained sufficient strength to withstand traffic without damage unless approved protective devices are provided. Concrete pavement at an age of 7 days or a strength of 2000 psi may be opened to traffic.

B. Flexible Base:

1. Where the base course exceeds 6 inches in thickness, construct the flexible base in two or more courses of equal thickness. Wet, manipulate, and compact material to 95 percent maximum density as determined by ASTM D698. Where deemed necessary by the Owner's Representative, apply a uniform application of prime coat asphaltic material to the surface of the prepared subgrade, applied at a rate of not less than 0.30 gallon per square yard of surface.
2. Where plant mix asphalt material is used for base, construction shall be in accordance with TXDOT Standard Specifications, Item 351, as applicable to small areas.

C. Asphalt Pavement Replacement:

1. Hot Mix Asphaltic Concrete: Apply prime coat to base or tack coat base as indicated. Coat contact surfaces of pavement edges and structures with asphalt before any pavement is placed. Do not place pavement until the Owner's Representative has approved the base. Hauling or transporting of the material to the project site, placing, compaction, and shaping shall be in accordance with TXDOT Standard Specification Item 340.6 as applicable for small areas. After final compaction of the pavement, no vehicular traffic of any kind shall be permitted until the pavement has cooled and hardened for at least 6 hours. Smooth the finished surface course, upon completion of final rolling true to grade and cross-section. Immediately correct low or defective areas by cutting out the faulty areas and replacing with fresh, hot mixture. Compact the area to conform to the remainder of the pavement.
2. Two-Course Asphalt Surface Treatment: On the approved surface of the finished base, asphalt at the rate of 0.20 to 0.30 gallons per square yard shall be applied by an approved distributor so operated to result in a uniform, proper distribution at the

correct temperature. Immediately cover the surface with No. 1 aggregate, distribute at a rate of one cubic yard per 80 square yards, broom as necessary for uniform distribution, and roll with a flat wheel roller of ample weight. Make a second application of asphalt in the manner specified for the first application, at a rate of 0.30 to 0.40 gallon per square yard. Make the second application with No. 2 aggregate at a rate of one cubic yard per 110 square yards and process as specified for the first application. After the work has been completed, there should be a slight excess of aggregate on the surface.

- D. Other Improved Surfaces: Where water, storm drains, or sewer lines to be constructed traverse or cross through gravel surfaced public roads or shoulders, or private dirt or gravel driveways or parking areas, replace the surface with a quality material, workmanship and at a thickness at least equal to the existing surfaces.

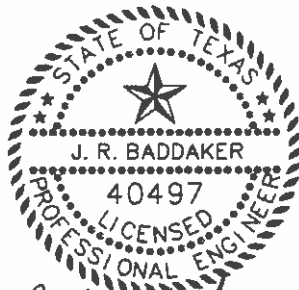
END OF SECTION

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK**

**CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 33 UTILITIES

33 10 13	Disinfecting of Water Utility Distribution
33 12 16.13	Miscellaneous Valves
33 12 16.16	Air Release & Air and Vacuum Valves
33 12 16.23	Gate Valves
33 12 16.26	Butterfly Valves
33 12 19	Water Utility Distribution Fire Hydrants
33 16 19.13	Composite Elevated Water Utility Storage Tank



J. R. Baddaker 10-12-2012

FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

33 10 13 DISINFECTING OF WATER UTILITY DISTRIBUTION

1.00 GENERAL

1.01 WORK INCLUDED

- A. Disinfect the facilities for pumping, storing, or conveying potable water to comply with the standards for potable water of the regulatory agency of jurisdiction. Potable water is defined as any water that has been filtered, disinfected or otherwise treated to the meet regulatory standards (in the water treatment plant this includes the inside surfaces of the filters).
- B. Disinfect piping systems that are used to convey water, solutions, or chemicals to the potable water facilities.
- C. Test water from the disinfected system per regulatory standards to verify that water is acceptable. Repeat procedure if tests do not meet standards.

2.00 PRODUCTS

2.01 MATERIALS

- A. Liquid Chlorine: Meeting the requirements of AWWA B301.
- B. Calcium Hypochlorite: Meeting the requirements of AWWA B300.

3.00 EXECUTION

3.01 NEW FACILITIES

- A. New facilities shall be thoroughly disinfected in accordance with AWWA Standard C651 - Water Mains, C652 - Storage Facilities, C653 – Water Treatment Plants, and then flushed and sampled before being placed in service. Samples shall be collected and tested in accordance with the TCEQ Rules and Regulations, Chapter 290.
- B. During construction keep basins, pipe, fittings, equipment, and appurtenances free from dirt and debris.
 - 1. Clean basins thoroughly before disinfection.
 - 2. Seal the open ends of pipe with water-tight plugs when pipe is not being laid.
 - 3. Pump water from trenches before removing the plug when water accumulates in the trench.
- C. Complete hydrostatic test of the line prior to disinfection.
- D. Wash the surfaces to be disinfected.
 - 1. Flush pipelines. The minimum quantity of water used for flushing must exceed the capacity of the line to insure that clean water has traversed the entire length of pipe.
 - 2. Power wash the surfaces of basins and reservoirs using high pressure wash systems.
- E. Disinfect facilities per the following procedures of AWWA:

1. Water Mains: C651 - latest revision.
 2. Water Storage Facilities: C652 - latest revision.
 3. Water Treatment Plants: C653 - latest revision.
- F. Fill the system with potable water. Test the water to see that it meets the requirements of the regulatory agency of jurisdiction for potable water. Monitor the system for 2 days. If water test fails to meet the prescribed standards, repeat the disinfection process until water meets quality standards for disinfection.

3.02 REPAIRS OR CONNECTIONS TO EXISTING LINES

- A. Clean and sterilize the interior surfaces of new piping, fittings, equipment, and appurtenances to be installed in an existing potable water system or connected to an existing system.
- B. Clean and sterilize the existing pipe or facilities for a minimum distance of 3 pipe diameters back from the ends of the pipe. Plug the ends of the line when work is not being performed on the pipe.
- C. Perform sterilization by swabbing each item with a concentrated chlorine solution.
 1. Each piece is to be disinfected prior to being assembled for installation in the existing pipe.
 2. Disinfect each piece just prior to assembly to help prevent re contamination.
 3. Plug the ends of the assembly until a new item is to be added to the assembly.
 4. Store disinfected materials on blocks to prevent contact with the ground.

3.03 DISPOSAL OF FLUSHING AND DISINFECTION WATER

- A. Chlorinated water used in flushing and disinfecting pipelines prior to connection to the distribution system shall be disposed of by the Contractor in an acceptable manner. Chlorinated water must be "de-chlorinated" prior to disposal to eliminate adverse impacts to the surrounding environment. Water released to the environment shall meet all AWWA, EPA, and TCEQ regulatory requirements.
- B. With the written permission of the Owner of the system, chlorinated water may be disposed of in a sanitary sewer system if one is available. In the case of larger pipelines and the larger volumes of water involved, the Contractor will not be permitted to use the sanitary sewer system for disposal even if one is available.
 1. The Contractor is responsible for complying with all of the applicable requirements of the TPDES General Permit TXG670000, issued by the TCEQ, regarding the discharge of hydrostatic test water.
 2. The discharge must be to a splash pad or paved area, and may not be located within 300 feet of the intake for a domestic drinking water supply or 500 feet of any public or private water well.
 3. An effluent water sample must be taken during the first hour of discharge at a location immediately near the point of discharge, and collected prior to commingling with storm water, wastewater, or other flows.

4. For discharges that extend beyond an hour in duration, a second sample must be taken of the last 10% of the effluent.
5. Sampling protocol, sample containers, holding times, preservation methods, and analytical methods must follow the requirements set forth in the general permit.
6. The effluent grab sample(s) must be analyzed for total residual chlorine by an accredited and certified laboratory, and the total residual chlorine in the sample must not exceed 0.10 mg/l.
7. Any noncompliance that endangers human health or safety, or the environment must be reported to the TCEQ in accordance with the general permit.
8. Any effluent violation which deviates from the permitted effluent limitation by more than 40% must be reported to the TCEQ in accordance with the general permit.
9. The Contractor must record all hydrostatic test water sample results on an approved DMR (EPA Form 3320-1). These monitoring records shall be retained for a period of three years from the date of the record and be readily available for review by the TCEQ upon request.

END OF SECTION

33 12 16.13 MISCELLANEOUS VALVES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidental necessary to install miscellaneous valves. Valves and accessories specified in this Section are to be installed only in the absence of product specifications in other Sections and must be approved by the Engineer. Review other Sections for specific requirements.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
 - 1. Shop Drawings.
 - 2. Operation and Maintenance Manuals.

2.00 PRODUCTS

2.01 MANUFACTURED PRODUCTS

- A. Corporation Stops: Corporation stops shall be bronze with tapered plug and flat key operator. Unless otherwise indicated, stops shall be equal to Mueller H-10046 with iron pipe thread on inlet and outlet, of the size indicated.
- B. Hose Faucet: Hose faucet shall be bronze sediment faucet with 1/2-inch pipe thread and standard garden hose thread outlet with brass tee handle as manufactured by Woodford Model Y2, Mueller, or approved equal.
- C. Shear Gates: Shear gates shall be double wedge type, with iron body and bronze wedges. Wedges shall be bolted to the shear gate frame. Gates shall be furnished with a pull rod, lifting handle, and catch. Gates shall be M&H style 44 or approved equal.

2.02 FLAP VALVES

- A. Flap valves shall be circular flange framed, with machined back flange for attachment to a flanged wall thimble. Body and flap shall be cast iron, ASTM A126-B. Resilient seat shall be neoprene or Buna-N bonded in a groove machined in the body. Hinge arms shall be high-tensile bronze, ASTM B584-CA865 with two pivot points, an adjustable lower pivot with limited rotation and a threaded upper hinge post to adjust flap valve sensitivity. A lubrication fitting shall be supplied for each pivot. Hinge pins shall be silicon bronze, ASTM B98-CA655 or Type 304 Stainless Steel.
- B. Flap valve shall be designed to open when differential head across the flap is 0.3 foot or less.
- C. Flap valve shall be Rodney Hunt Series FV-AC, Waterman Equal Model, or equal.

2.03 BACKFLOW PREVENTERS

- A. Provide reduced pressure principle backflow preventers meeting requirements of ANSI/ASSE 1013. Backflow preventers shall be rated at 150 psi working pressure, and shall comply with AWWA Standard C506.
- B. Units 2-1/2 inches and larger shall consist of two independently acting check valves together with an automatically operating pressure relief valve, two gate valves, and four test cocks, bronze or iron body with bronze internal parts. Acceptable manufacturers and models: Cla Val Co., RP 1 (2 inches and larger); Watts, 909; Hersey, 6CM, Wilkins, 975 and Febco, 825.
- C. Units 2 inches and smaller shall consist of two independently acting check valves together with an automatically operating pressure relief valve, two ball valves, strainer, and four test cocks, bronze or iron body with bronze internal parts. Acceptable manufacturers and models are Cla Val Co., RP 2 (1-1/2 inches and smaller); Watts, 009; Wilkins, 975XL, Hersey, FRP II, Febco, 825Y and Wilkins, 575.
- D. Provide Watts, TK 9 A test kit consisting of gauge test valves, hoses, adaptors, securing strap, instruction guide and lightweight case.

2.04 DUCKBILL CHECK VALVES

- A. Duck bill check valves shall be of the flow-operated check type with a slip-on end connection. Inlet port areas shall be 100 percent of the mating pipe port size. The port area shall contour down to a duckbill which shall allow passage of flow in one direction while preventing reverse flow. Valves shall open in the proper direction under 2 inches or more of pressure, and shall withstand up to 10 feet of back pressure. Valves shall be designed to slip over the specified pipe outside diameter, and shall be attached to the pipe by means of clamps furnished by the valve manufacturer. Valves shall be of one-piece neoprene rubber construction with a fabric reinforcement, with a protective EPDM exterior wrapping for protection against ultraviolet radiation. Valves shall be Red Valve Tide Flex Check Valves or approved equal.

2.05 AIR RELEASE VALVES

- A. Each air release valve shall have a cast iron body, bronze, or stainless steel trim and stainless steel float. Float shall be baffled to prevent air from blowing valve closed until air is exhausted.
- B. Valve inlet shall be N.P.T. for 2-inch and smaller valves. Valve inlet shall be ANSI flange for 3-inch and larger valves. Flange rating shall equal or exceed the maximum working pressure.
- C. Air release valves shall be designed to automatically release accumulated air pockets within the pipeline while in operation and under pressure. Air release valves shall be APCO Model 200, Val-Matic Model 38, or Crispin Model P.

3.00 EXECUTION

3.01 INSTALLATION

- A. Carefully handle and install valves in a manner that prevents damage to any part of the valves. Install valves in accordance with the Manufacturer's instructions.

END OF SECTION

33 12 16.16 AIR RELEASE AND AIR AND VACUUM VALVES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install air release and air and vacuum valves of the sizes and types indicated. Furnish the necessary isolating valves and piping.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
 - 1. Shop Drawings.
 - 2. Certificate of Adequacy of Design.
 - 3. Operation and Maintenance Manuals.

2.00 PRODUCTS

2.01 MANUFACTURED PRODUCTS

- A. General:
 - 1. Each air valve shall have a cast iron body, bronze, or stainless steel trim and stainless steel float. Float shall be baffled to prevent air from blowing valve closed until air is exhausted.
 - 2. Valve body, float, etc., shall be designed for a working pressure and shall seat at a minimum pressure shown in the valve schedule, Paragraph 3.02.
 - 3. Air valves shall be manufactured by the Valve and Primer Corporation (APCO), Val-Matic Manufacturing Corp., or Multiplex Manufacturing Company (Crispin).
 - 4. Top of valve assembly shall be fitted to attach discharge pipe as indicated. Valve inlet shall be N.P.T. for 2-inch and smaller valves. Valve inlet shall be ANSI flange for 3-inch and larger valves. Flange rating shall equal or exceed the maximum working pressure.
- B. Air Release Valves (AR): Air release valves shall be designed to automatically release accumulated air pockets within the pipeline while in operation and under pressure. Air release valves shall be APCO Model 200, Val-Matic Model 38, or Crispin Model P.
- C. Air and Vacuum Valves (AV): Air and vacuum valves shall be designed to allow large volumes of air to escape through the valve orifice when filling a pipeline and to close water tight once the air has been expelled. Air and vacuum valves shall also permit large volumes of air to enter through the valve orifice when the pipeline is being drained to break the vacuum. Air and vacuum valves shall be APCO Model 140, Val-Matic Model 100, or Crispin Model AL.
- D. Combination Air Valves (CAV):
 - 1. Combination air valves shall be heavy duty air and vacuum valves with air release.

2. Combination air valves shall be designed to release accumulations of air at high points within a pipeline by exhausting large volumes of air as the pipeline is being filled and by releasing accumulated pockets of air while the pipeline is in operation and under pressure. Combination air valves shall also be designed to permit large volumes of air to enter the pipeline during pipeline drainage.
3. Combination air valves shall be APCO Model 140C, Val-Matic Model 200, or Crispin Model C.

E. Air and Vacuum Valves for Vertical Turbine Pumps (PAV):

1. Air and vacuum valves for vertical turbine pumps shall be designed to allow large volumes of air to escape out the valve orifice when the pump is started and close water tight when the liquid enters the valve. The air valve shall also permit large volumes of air to re-enter through the valve orifice when the pump is stopped to prevent a vacuum in the pump column.
2. The baffle shall be designed to protect the float from direct contact of the rushing air and water to reduce premature float closures in the valve.
3. The entire float and baffle assembly must be shrouded with a perforated water diffuser to reduce slamming of the float.
4. The discharge orifice shall be fitted with an adjustable throttling device to regulate the flow of air escaping to establish a pressure loading on the rising column of water to minimize shock to the pump and check valve.
5. Air and vacuum valves for vertical turbine pumps shall be APCO Series 140 WDT, Val-Matic Model 100 DWS-T, or Crispin Model DL.

3.00 EXECUTION

3.01 INSTALLATION

- A. Carefully handle and install valves vertically in such a manner as to prevent damage to any part of the valves. Installation shall be in accordance with the Manufacturer's instructions. Provide nuts, bolts, and gaskets where applicable.

3.02 SCHEDULES

Pressure				
Location	Size	Type	WP./Min.P.	No. Required
As Shown	2"	CAV	150# / 40#	1

END OF SECTION

33 12 16.23 GATE VALVES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install gate valves and appurtenances, including valve boxes, operators, bolts, nuts and gaskets.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers:

1. American-Flow Control.
2. M&H.
3. Mueller.
4. Clow.

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
1. Operation and Maintenance Manuals.

1.04 STANDARDS

- A. The applicable provisions of the following standards shall apply as if written here in their entirety:

1. American National Standards Institute (ANSI) Standards:

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings
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2. American Society for Testing and Materials (ASTM) Standards:

ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A536	Standard Specification for Ductile Iron Castings

3. American Water Works Association (AWWA) Standards:

AWWA C111	Rubber-Gasket Joints
AWWA C500	Gate Valves for Water and Sewage Systems
AWWA C509	Resilient Seated Gate Valves for Water and Sewage Systems

2.00 PRODUCTS

2.01 GATE VALVES

A. General:

1. Unless otherwise specified, gate valves greater than 24 inches in size shall be in strict accordance with AWWA C500. Gate valves shall be double disc, parallel seat internal wedging type with non-rising stem. Unless otherwise specified, gate valves 3 through 24 inches in size shall be in accordance with AWWA CS09, Resilient Wedge. Valves 16 inches and larger shall be provided with gearing to reduce the maximum required opening and closing torque to 80 ft-lb.
 2. Gate valves 2-1/2 inches and smaller shall be bronze, non-rising stem with wedge disc and screwed ends for 300-psi W.O.G. working pressure. Bronze gate valves shall be Crane No. 437, Mueller No. H 10914, or approved equal.
 3. Gate valves 30 inches and larger shall be equipped with non-rising stem bypass valve and with spur-gears in enclosed oil or grease lubricated gear cases. Gear boxes shall be factory lubricated. Flanges shall conform to ANSI, Class 125 or 250.
- B. Gate: Gate for double disc valves shall be cast iron with bronze mounted wedges and seats. Gate for resilient seated valves shall be cast iron with rubber-seat compound bonded to the valve gate.
- C. Operators: Operators shall turn counterclockwise to open the valve. Exposed valves shall have handwheel operators unless otherwise designated. A directional arrow and the word "open" shall be cast on the handwheel. Valves for buried service shall have a 2-inch square nut operator and shall be installed with extension stems where required to extend operating nut to within 12 inches of the finished grade. Provide a cast iron valve box to enclose the operating stem. Valve box shall be three-piece extension type equal to Mueller No. 10380 or Clow F2450.
- D. Stem and Seal: The non-rising stem shall be bronze with inside screw. Shaft seal shall employ O-rings or V-type packing.
- E. Bell Ends: Where designated, valves shall be mechanical joint or rubber gasketed push on joints in accordance with the applicable requirements of AWWA C111.

3.00 EXECUTION

3.01 INSTALLATION

- A. Carefully handle and lower buried valves into position to prevent damage to any part of the valves. Place the valve in the proper position with stem truly vertical and securely hold until connections have been made. Furnish bolts, nuts, and gaskets. The Contractor shall be responsible for adjusting the valve boxes to the proper length to conform to the ground surface.

3.02 BLOCKING UNDER GATE VALVE

- A. Gate valves 18 inches and larger which are buried shall rest on a concrete pad. Pad shall extend for the full width of the trench and from back of hub to back of hub (or flange). Care shall be taken to not interfere with the jointing. Concrete shall be minimum 1500-psi compressive strength.

3.03 FIELD QUALITY CONTROL

- A. Upon completion of installation of the equipment, an acceptance test to verify the satisfactory operation of each unit shall be conducted. The test shall be conducted in a manner approved by and in the presence of the Engineer. The unit shall be checked for general operation and leakage. The unit must perform in a manner acceptable to the Engineer before final acceptance will be made by the Owner.

END OF SECTION

33 12 16.26 BUTTERFLY VALVES

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install butterfly valves.

1.02 QUALITY ASSURANCE

A. Acceptable Manufacturers:

1. DeZurik.
2. M&H.
3. CMB/K-Flo.
4. Pratt.

- B. Experience Requirements: The Manufacturer shall have had successful experience in manufacturing tight-closing, rubber-seated butterfly valves for this type service in the sizes indicated. The Manufacturer shall have at least 10 years' experience in the manufacture of valves.

- C. Manufacturer's Representative for Startup and Testing: The Valve Vendor or Manufacturer shall provide the services of a competent manufacturer's representative for an indefinite period of time as required to insure proper adjustment, installation, and operation of the valve.

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:

1. Shop Drawings (needed if electric actuators are used).
2. Operation and Maintenance Manuals.

1.04 STANDARDS

- A. The applicable provisions of the following standards shall apply as if written here in their entirety:

1. American National Standards Institute (ANSI) Standards:

ANSI B16.1	Cast Iron Pipe Flanges and Fittings
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2. American Society for Testing and Materials (ASTM) Standards:

ASTM A48	Standard Specification for Gray Iron Castings
ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A276	Standard Specifications for Stainless Steel Bars
ASTM A536	Standard Specification for Ductile Iron Castings

ASTM B148	Standard Specifications for Aluminum Bronze Coatings
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3. American Water Works Association (AWWA) Standards:

AWWA C504	Standard for Rubber-seated Butterfly Valves
AWWA C550	Standard for Protective Interior Coatings for Valves and Hydrants

2.00 PRODUCTS

2.01 VALVE CONSTRUCTION

- A. General: Butterfly valves supplied under this Contract shall be of the tight-closing, rubber seated type with rubber seats that are securely attached to the valve disc or body. Valves shall be bubble tight at rated pressures with flow in either direction and shall be satisfactory for applications involving valve operation after long periods of inactivity. Butterfly valves shall conform to the applicable requirements of AWWA C504 and AWWA C550. All valves for potable water service shall comply with NSF61 standards.
- B. Valve Bodies: Valve bodies shall be constructed of cast iron ASTM A126, Class B or ASTM A48, Class 40 or ductile iron in accordance with ASTM A536, Grade 65/45/12. Valve class shall be suitable for the pressure class of the adjacent pipe in which it is installed.
- C. Valve Discs: Valve discs shall be cast iron conforming to ASTM A126, Class B, aluminum bronze conforming to ASTM B148, or ductile iron conforming to ASTM A536, Grade 65/45/12.
- D. Valve Shafts: Valve shafts shall be turned, ground and polished, constructed of stainless steel conforming to ASTM A276. Valve shafts may consist of a one-piece unit extending completely through the valve disc, or may be of the "stub shaft" type, which comprises two separate shafts inserted into the valve disc hubs. If of the "stub shaft" construction, each stub shaft shall be inserted into the valve disc hubs for a distance of at least 1-1/2 shaft diameters. The shaft shall be tightly connected to the disc using tapered or wedged keying devices.
- E. Valve Seats: Valves shall have Neoprene, Buna-N or other synthetic rubber resilient seas to provide tight shut off at the pressure specified. The mating seat surface shall be ASTM A276, 18-8 stainless steel or a 95 percent pure nickel overlay. All valves shall have replaceable, adjustable seats. Valves 30 inches and larger shall have in-line replaceable seats.
- F. Valve Bearings: Valve shall be fitted with sleeve type bearings. Bearings shall be of corrosion-resistant and "self-lubricated" materials that will not deteriorate natural or synthetic rubber.
- G. Valve Shaft Seals: Where shafts project through the valve bodies for operator connection, a split-V or O-ring type shaft seal shall be provided.

2.02 VALVE OPERATORS:

- A. General: The valve operator shall be designed and manufactured in accordance with the applicable requirements of AWWA C504 and AWWA C540, and shall be arranged for horizontal or vertical valve shaft installation.

B. Manual Operators:

1. Manual operators shall have all gearing totally enclosed and shall be pre-lubricated or grease packed. Operators shall be of the worm gear or travelling nut and link type with field adjustable stops to prevent over travel in the open or closed positions. The direction of the manual rotation shall be clockwise to close.
 2. Operators for exposed valves shall be provided with a valve position indicator and a handwheel or chain and sprocket device. Provide chain and sprocket for valves greater than 6 feet above walking surface.
 3. Operators for buried valves shall have an extended stem with a 2-inch square operating nut within 12 inches of the finished grade. Provide a cast iron valve box to enclose the operating stem. Valve box shall be three-piece extension type equal to Mueller No. 10380 or Clow F2450. For valves which are installed with the shaft vertical, provide a level gear for vertical operation of the operating nut.
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3.00 EXECUTION

3.01 INSTALLATION

- A. Installation shall be in accordance with the Manufacturer's instructions. Valve shaft shall be truly vertical or horizontal as indicated.

3.02 FIELD QUALITY CONTROL

- A. Upon completion of installation of the butterfly valves an acceptance test shall be conducted to verify the satisfactory operation of the valves. The valves must perform in a manner acceptable to the Engineer before final acceptance will be made by the Owner.

END OF SECTION

33 12 19 WATER UTILITY DISTRIBUTION FIRE HYDRANTS

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install fire hydrant and appurtenances, operators, bolts, nuts and gaskets.

1.02 QUALITY ASSURANCE

- A. Acceptable Manufacturers:

- 1. Mueller
- 2. Clow

1.03 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:

- 1. Hydrant cut sheets and Certification of Compliance with AWWA C502 as record data.

1.04 REFERENCE SPECIFICATIONS

- A. Section 01 33 00 "Submittal Procedures."

1.05 STANDARDS

- A. The applicable provisions of the following standards shall apply as if written here in their entirety:

- 1. American National Standards Institute (ANSI) Standards:

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings
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- 2. American Society for Testing and Materials (ASTM) Standards:

ASTM A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A307	Carbon Steel Bolts and Studs, 60,000-psi Tensile Strength
ASTM A536	Standard Specification for Ductile Iron Castings
ASTM D2000	Classification System for Rubber Products in Automotive Applications

- 3. American Water Works Association (AWWA) Standards:

AWWA C111	Standard for Rubber-Gasket Joints
AWWA C502	Standard for Dry-Barrel Fire Hydrants

2.00 PRODUCTS

2.01 FIRE HYDRANTS

- A. General: Fire hydrants to be installed as shown on the plans or furnished for general installation shall be dry-barrel, traffic model conforming to AWWA Standard for Dry-Barrel Fire Hydrants, AWWA Standard C502.
- B. Supplementary Details:
1. Type of Shutoff: Per City of Lancaster General Design Manual. Valve action shall provide positive shutoff at minimum closing torque. Wedge action closing gates shall not be permitted. Scissor type main valves shall not be permitted unless approved by the Owner's Representative.
 2. Inlet Connection: Mechanical joint unless otherwise specified. Inlet connection shall be for a 6-inch cast iron pipe with minimum net valve opening of 5-1/4 inches unless otherwise specified.
 3. Delivery Classification: Number and size of pumper and hose nozzles shall be two 2.5-inch nozzles and one 4.5-inch nozzle with standard NST thread.
 4. Bury Length: Ground to bottom of connection pipe shall be 5 feet, or as specified by the Owner's Representative.
 5. Harnessing Lugs: Furnished with the hydrants.
 6. Nozzle Cap Gasket: Furnished on all nozzle caps; long life; black rubber; conforming to Rubber Products in Automotive Applications ASTM D2000 or equal.
 7. Drain Valve and Outlet: Hydrants shall be equipped with two drain holes and provided with an automatic and positively operating, non-corroding drain or dip valve so as to drain the hydrant completely when the main valve is shut.
 8. Direction to Open: Clockwise. The number of turns to open shall be in accordance with AWWA C502, Section 2.9.3.
 9. Color Of Finish Paint Above Ground Line: After placement, the outside of the hydrant above the finished ground line shall be thoroughly cleaned and painted with two coats of aluminum paint in accordance with Owner's Standards. Bonnet to flange and nozzle caps color code for main size according to the City of Lancaster's standards on the plans. Remainder of hydrant above ground to be painted aluminum.
 10. Operating and Cap Nuts: See City of Lancaster's General Design Manual.
- C. Breakable Type Hydrants: Breakable Or Sleeve Type Couplings: The barrel of the hydrant between the elbow and the top cap shall be made in two parts connected by a swivel flange or breakable flange which shall permit facing of the nozzles in any desired direction in increments of 45 degrees or less. The complete hydrant shall be of such design that when the hydrant barrel is broken through traffic collision or otherwise, it may be replaced without disturbing the bottom of the hydrant.
1. The materials used for gaskets between the upper and lower barrels and the base and nozzle section shall be compounded to conform to ASTM D2000.
 2. Provision shall be made in the design of the stem to disconnect the stem from the hydrant parts above the standpipe break point in the event of traffic accidents. If breakable or sleeve type couplings are used, they shall have sufficient torsional strength so that a torsional failure of the stem shall occur at some point other than at the coupling. Design of the coupling shall be such that when the coupling is broken, no

parts shall come loose and fall into the hydrant barrel, and the break shall not occur through the pins or bolts holding the coupling to the stem.

- D. Main Valve Seats: Designed so that incorrect positioning is impossible.
- E. Gaskets - Ground Line: The valve body flange gaskets shall be fabricated from "Accopac" CS-301 manufactured by Armstrong Cork Company or an equal approved by Owner's Representative prior to substitution. They shall be full face or ring type with the lower flange recessed to hold the gasket in place.
- F. Nozzle Cap Chains: In accordance with AWWA C502, Section 4.6.3.2.
- G. Flanges: All flanges other than break flanges shall be equipped with mechanical joints. Gland bolts shall be high-strength, low-alloy, corrosion-resistant steel conforming to ASTM A325, Type 3.
- H. Operating Stems: The spindle of the operating stem and the stem nuts for hydrants having the operating threads located in the barrel or waterway shall be manganese bronze, Everdur or other high quality non-corrodible metal. Barrel bolts and nuts shall meet the requirements of ASTM A307, 60,000-psi tensile strength.
- I. All working parts in the waterway, except for sliding stem support mechanisms, shall be bronze-to-bronze or bronze-to-iron.
- J. O-Ring: Hydrant stem packing boxes, where needed, shall be provided with O-ring grooves and sealed with O-rings. O-rings shall be furnished in lieu of stem packing. They shall be of the double O-ring type designed so that the rubber rings shall move against a bronze, stainless steel or other non-corrodible metal surface. O-ring shall be in accordance with ASTM D2000.
- K. Extensions: Fire hydrants shall be designed to accept 6-, 12-, or 18-inch extensions.
- L. Hydrant Heads: Nozzle may be faced in any desired direction.
- M. Upperstem Thread Lubrication: Upperstem thread lubrication may be accomplished with oil or grease. When oil is used, it shall be in conjunction with a functional oil reservoir and an oil filler port. The hydrant shall be factory filled with a USP white mineral oil such as Lubriplate No. 3-V (SAE 20), Mobile Whiterex 425 or equal. Means for field check of oil lubrication level shall be provided. When grease is used, the hydrant shall be factory lubricated with food grade grease such as Lubriplate No. 630-AA (medium soft) or equal. Means for field lubrication without disassembly shall be provided.

3.00 EXECUTION

3.01 INSTALLATION

- A. Install hydrants at the locations shown on the Plans or as directed by the Owner's Representative. Set hydrants truly vertical and securely brace with concrete until self-standing. Surround hydrants with a minimum of 7 cubic feet of washed gravel or stone and install concrete splash pad as shown in the plans.
- B. Install fire hydrants using special mechanical joint anchoring fittings. Install a flanged by MJ gate valve on the main line tee.

- C. Wrap and protect the gate valve, including bolts at joints, and the bottom of the fire hydrant with 3-mil polyvinyl to prevent direct contact with concrete blocking.

3.02 FIELD QUALITY CONTROL

- A. Upon completion of installation of the equipment, conduct an acceptance test to verify the satisfactory operation of each unit. The test shall be conducted in a manner approved by and in the presence of the Owner's Representative. Check the unit for general operation and leakage. The unit shall perform in a manner acceptable to the Owner's Representative before final acceptance is made by the Owner.

3.03 SCHEDULES

- A. Paint the fire hydrants to conform to the Owner's color coding.

END OF SECTION

33 16 19.13 COMPOSITE ELEVATED WATER UTILITY STORAGE TANK

1.00 GENERAL

1.01 WORK INCLUDED

- A. The Work performed under this Contract shall include all labor, materials and equipment necessary to design, construct, inspect and test a 2,000,000 gallon composite elevated tank, foundation, internal tank piping, external piping to the limits as shown on the plans, and tank accessories as shown on the Drawings and specified herein. The design shall be the product of one manufacturer. The composite elevated tank shall consist of a welded steel tank and concrete support structure.
- B. The Work shall also include, but shall not be limited to, all labor, materials and equipment necessary to clean, paint and disinfect the water storage tank.
- C. Electrical power at the Site shall be in accordance with Section 01 11 00 "Summary of Work." The Tank Manufacturer will be responsible for connecting to the water and electrical utilities and for coordination with the electrical and water utilities.
- D. A cathodic protection system is not included as part of the Project.
- E. System Description:
1. Elevated Tank: The Composite elevated tank shall consist of the following: foundation, reinforced concrete support structure, all internal and external piping ending at the flexible couple located outside the pedestal wall, tank accessories, and a welded steel water tank. The support structure shall extend vertically from the foundation as a single circular concrete wall. A domed concrete slab shall be provided as structural support for the steel tank within the perimeter of the wall. A reinforced concrete ring beam shall be provided to connect the steel tank, concrete dome and concrete support wall. Dimensions shown may be adjusted to suit Tank Manufacturer's standard tank shape up to the minimum dimensions shown on the plans and in the Specifications.

2. Hydraulic Design Criteria:

	Base Bid
Minimum Capacity Within Operating Range	2,000,000 Gallons
Maximum Operating (Head) Range	45 Feet
Elevation	
Overflow/Top Capacity Elevation	792 Feet
Tank Floor Elevation	624.0 Feet
Inlet/Outlet Pipe Diameter	24 Inches
Overflow Pipe Diameter	20 Inches
Maximum Fill Rate	9,027 Gallons Per Minute
Maximum Drain Rate	8,312 Gallons Per Minute

3. General Design:

- a. Design Loads: The steel tank, concrete support structure and foundation shall be designed to safely withstand loads acting separately or in load combinations as specified by the most current editions of AWWA D107, AWWA D100, ACI 371R, and ASCE/SEI 7 for category IV structures.
- b. Foundation Design:
 - 1). The concrete foundations shall be designed by the Tank Manufacturer and compatible with their proposed tank design. Foundations shall be constructed by the Tank Manufacturer or a Subcontractor directly supervised by the Tank Manufacturer in accordance with the drawings supplied. Foundations shall be of adequate size to properly distribute the bearing loads from the tank and to resist uplift due to wind forces.
 - 2). The Tank Manufacturer shall design the foundations accounting for soils and subsurface conditions. The successful Tank Manufacturer shall satisfy himself as to the adequacy of the geotechnical report that is included with these Contract Documents, and its recommendations. The successful Tank Manufacturer shall acquire any additional soils and foundation data necessary for the final design at no additional cost to the Owner.

1.02 QUALITY ASSURANCE

A. Qualifications:

1. The Work described in this Section shall be performed by an Elevated Tank Manufacturer that has a minimum of 10 years' experience in composite tank design and construction. The Manufacturer shall have designed, constructed and commissioned a minimum of five composite elevated tanks of equal or greater capacity, all in satisfactory operation for at least 5 years in Texas. These tanks shall be of the same design as described above.
2. Acceptable manufacturers are: Caldwell Tanks, Inc., Landmark Tank Structures or Chicago Bridge and Iron Company (CB&I). Other manufacturers may submit proposals only if they pre-qualify and show conformance with the specification criteria. Request for qualification with supporting documentation must be received in writing 14 days prior to bid date. Documentation shall include an experience list detailing the projects completed directly by the manufacturer that comply with this specification. Information to be submitted shall also include details of construction, concrete forming process and equipment including concrete support wall placement height, steel tank erection process, rustication pattern and quality control procedures. The Owner and/or Engineer shall be the sole judge as to the acceptability of the Tank Manufacturer.
3. Elevated tank design, concrete support structure construction and steel tank construction shall not be subcontracted. These items shall be performed by the Tank Manufacturer.
4. The Tank Manufacturer shall directly employ a full time Texas Registered Professional Engineer with a minimum 5 years cumulative experience in the design and construction of Composite elevated tanks as described in this specification. The Engineer shall be in responsible engineering charge of the Work.

5. A qualified supervisor directly employed by the Tank Manufacturer shall be on-Site at all times during construction of the tank.
6. All welders employed on the Project shall be Tank Manufacturer's employees and AWS D1.1 certified if welding structural steel and AWS D1.6 certified if welding stainless steel. Welders that have not had proof of certification submitted in accordance with the Specifications shall not be employed on the Project until such certification is submitted.

B. Regulatory Requirements:

1. The elevated tank shall be designed and constructed in compliance with applicable federal, state and local regulations.
2. Personnel safety equipment shall be provided in accordance with OSHA requirements and manufacturer's documentation.

- C. Singular Responsibility:** It is acknowledged that the successful design and construction of composite elevated storage tanks requires specialized and proprietary knowledge and skills. It is further recognized that successful performance of the tank requires that the earthwork preparation, foundation for the tank and the tank itself be considered an integrated system. Therefore, it is the express intent of this Specification to create a singular responsibility for the design and construction of this integrated system required for composite elevated storage tanks. The design and construction of all aspects, including but not limited to, excavation, tank subgrade, fill placement beneath tank, tank foundation, foundation drainage systems, concrete support structure, inlet and outlet pipes, all piping and equipment inside the tank, welded steel tank, and pedestal and welded steel tank finishes must be performed by the Tank Manufacturer or his Subcontractor under the direct supervision of the Tank Manufacturer.

1.03 SUBMITTALS

A. Construction Drawings:

1. Construction drawings for the composite elevated tank shall be submitted as Shop Drawings. Drawings shall show all features of the Work, including the size and position of all structural components, the required strength or grade of all materials, and construction tolerances.
2. Foundation details shall also include excavation, soil protection and backfill.
3. Reinforced concrete details shall include construction joints, openings and inserts. Reinforcement shall be clearly indicated on the structural drawings and identified by mark numbers that are used on the fabrication schedule. Location, spacing and splice dimensions shall be shown. Placement and fabrication details shall conform to ACI 318.
4. Drawings of steel components shall show all details of welded joints and other connections. Standard weld symbols as listed in AWS A2.4 shall be used, unless joint details are shown.
5. Final construction drawings shall be sealed and signed by a Texas registered professional engineer and submitted as record data.

B. Construction Process:

1. Provide design, detail drawings and procedures for the support structure, forming system. Details shall include location of form and construction joints, rustications and ties. Procedures shall include form removal criteria and minimum elapsed time for adjacent concrete placement as record data.
2. Provide shop and field weld procedures for all structural joints on the steel tank as record data.

C. Design Data:

1. Provide a table showing capacity of the tank in gallons at all levels in 1-foot increments.
2. Provide a summary of the design for the foundation, support structure, overflow weir, tank and other components sealed and signed by a Texas Registered Professional Engineer. The codes and standards, methods of analysis, design coefficients, and resultant gravity, snow, wind, and seismic loads shall be documented.

D. Product Data:

1. Provide a separate concrete mix design for each specified concrete compressive strength indicated on the Tank Manufacturer's drawings sealed and signed by a Texas Registered Professional Engineer as record drawings.
2. Provide technical data and color Samples of all coating products.
3. Provide manufacturer's descriptive information for appurtenant equipment and accessories that are not detailed on the construction drawings.

E. Reports/Certification:

1. Provide documentation of all tests, inspections and certifications required by this specification.
2. Provide proof of AWS D1.1 and AWS D1.6 certification of all welders.
3. Provide certification that testing and inspection requirements of this specification have been performed and the results comply with the requirements of the specification.
4. Foundation excavation report as inspected by a representative of the Tank Manufacturer's geotechnical engineer prior to foundation construction.

F. Operation and Maintenance Manual: Provide O&M Manual with all operating instructions and maintenance procedures for the composite elevated tank, including but not limited to, complete drawings of the composite elevated tank, manuals and operating instructions for equipment, minimum maintenance and inspection instructions, repainting requirements, and control valve maintenance procedures.

G. Paint and Artwork Mock-Up: Provide Owner with a mock-up of the artwork design for approval prior to commencing paint work. Mock-up shall be to scale, color and indicate size of Logo and Lettering. Paint Samples of proposed colors shall also be submitted for Owner approval.

1.04 STANDARDS

- A. The applicable provisions of the following Specifications, Codes and Standards shall apply as if written here in their entirety:

ACI 117	Standard Tolerances for Concrete Construction and Materials
ACI 304	Guide for Measuring, Mixing, Transporting and Placing Concrete
ACI 305	Hot Weather Concreting
ACI 306	Cold Weather Concreting
ACI 318	Building Code Requirements for Structural Concrete
ACI 347	Guide to Formwork for Concrete
ACI 350	Environmental Engineering Concrete Structures
ACI 371R	Guide for the Analysis, Design, and Construction of Concrete Pedestal Water Towers
AISC S335	Specification for Structural Steel Buildings
ANSI B16.5	Pipe Flanges and Flanged Fittings
ASCE/SEI 7	Minimum Design Loads for Buildings and Other Structures
ASTM A123	Zinc Coatings on Iron and Steel Products
ASTM A240	Stainless Steel Plate, Sheet and Strip for Pressure Vessels
ASTM A285	Pressure Vessel Plates, Carbon Steel
ASTM A774	Welded Stainless Steel Fittings
ASTM A778	Welded Stainless Steel Tubular Products
AWS A 2.4	Standard Symbols for Welding, Brazing, and Nondestructive Examination
AWS D1.1	Structural Welding Code
AWS D1.6	Structural Welding Code – Stainless Steel
AWWA C200	Steel Water Pipe 6" and Larger
AWWA C206	Field Welding of Steel Water Pipe
AWWA C220	Stainless Steel Pipe 4" and Larger
AWWA C652	Disinfection of Water Storage Facilities
AWWA D100	Welded Steel Tanks for Water Storage
AWWA D102	Coating Steel Water Storage Tanks
AWWA D107	Composite Elevated Tanks for Water Storage
FAA 70/7460-1H	Obstruction Marking and Lighting
IBC 2000	International Building Code 2000
NACE RP0178	Standard Recommended Practice: Design, Fabrication, and Surface Finish of Metal Tanks and Vessels to be Lined for Immersion Service
NFPA NEC	National Electric Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
NSF 61	Standard for Drinking Water System Components

OSHA 29 CFR	Part 1910 Occupational Safety and Health Standards
SSPC VIS-89	Visual Standard for Abrasive Blast Cleaned Steel
SSPC PA-1	Paint Application Specification
30 TAC, Chapter 290	Public Drinking Water

1.05 DELIVERY AND STORAGE

- A. Handling and Shipping: The Tank Manufacturer shall handle materials and fabricated components in a manner that will protect them from damage. Allow painted materials adequate cure time prior to stacking or shipping.
- B. Storage and Protection: Protect delivered materials and equipment from damage. Store in well-drained areas and provide blocking to minimize contact with the ground.

1.06 JOB CONDITIONS

- A. Permits and Easements:
 - 1. Permits or licenses required for permanent structures, changes in existing facilities or advancement of the construction shall be secured and paid for by the Tank Manufacturer prior to the start of construction. These include building permits, code inspections, etc.
 - 2. Airspace authority permits and site easements have been secured by the Owner prior to construction. A copy of the FAA Permit can be found in Appendix B.
- B. Access: Tank Manufacturer shall provide Site access as indicated in the Drawings.
- C. Working Conditions:
 - 1. Safety and Health: The Tank Manufacturer shall comply with safe working practices and all health and safety regulations of OSHA, state and local health regulatory agencies and Material Safety Data Sheets (MSDS). Provide protective and lifesaving equipment for persons working at the Site.

1.07 SEQUENCING AND SCHEDULING

- A. Notification: The Contractor shall provide notification of the intent to start work at least 7 days prior to commencing each major phase of the Work.

1.08 GUARANTEES

- A. Workmanship and Material Guarantee: The Tank Manufacturer shall guarantee the tank structure against defects in workmanship and material for a period of 2 years. If, within 2 years from final completion of the Project, workmanship or material is proven defective, the Tank Manufacturer shall repair such defects at his own expense.
- B. Design Warranty: The Tank Manufacturer shall warrant its design of the proposed facility to be structurally and functionally applicable to serve the intended use of the projected work. Such intended use is exemplified by the criteria of design, workmanship, and material expressed by the requirements of the Specifications and Drawings prepared by the Engineer. The Owner's or Engineer's review of the Tank Manufacturer's design, or the

Owner's acceptance and final payment for the Work shall not relieve the Tank Manufacturer of design responsibility. The Owner shall be the direct beneficiary of the warranty.

2.00 PRODUCTS

2.01 MATERIALS

A. Reinforced Concrete:

1. All structural concrete materials, foundations, and reinforcement shall comply with ACI 318 and ACI 371R, except as modified in this Section.
2. Driveways, mow strips, sidewalks, flumes, and other miscellaneous concrete items shall be in accordance with Section 03 30 00 "Cast-In-Place Concrete."

B. Steel Tank: Steel tank components, including steel plates, sheets, structural shapes and filler metals shall be in accordance with AWWA D107.

2.02 CONCRETE SUPPORT STRUCTURE

- A. Support Wall: Wall thickness shall be provided such that the average compressive stress due to the weight of the structure and stored water is limited to 25 percent of specified compressive strength, but not greater than 1000 psi. A minimum total wall reinforcement of 0.15 percent vertically and 0.20 percent horizontally shall be distributed approximately equally to each face. A minimum of 1.00 percent vertical reinforcement shall be provided in the top 6 feet of the wall extending into the concrete ring beam.
- B. Tank Floor: The average compressive stress due to the weight of the structure and stored water shall not exceed 15 percent of the specified compressive strength, nor greater than 600 psi. Minimum total reinforcement in orthogonal directions shall be 0.40 percent distributed approximately equally to each face. Additional reinforcement shall be provided for stress caused by edge restraint effects.
- C. Openings: Openings 8 feet or wider used for vehicle access shall be strengthened against vehicle impact and local buckling by means of an internal buttress located on each side of the opening. The buttress shall consist of a thickened, reinforced concrete wall section that is integrally formed and placed with the support wall. The buttress section shall be not less than 3 feet wide and 6 inches thicker than the nominal wall dimension.

2.03 CONCRETE SUPPORT STRUCTURE / STEEL TANK INTERFACE

- A. Interface Region: The geometry of the interface shall provide for positive drainage and not allow either condensation or precipitation to accumulate at the top of the concrete wall or ring beam.
- B. Ring Beam: The ring beam shall be reinforced concrete with a nominal width and height of at least two times the support wall thickness. Minimum radial reinforcement shall be 0.25 percent. Circumferential reinforcement shall be not less than 1.0 percent.

2.04 STEEL TANK

- A. General: The steel tank shall be all welded construction and shall be designed in accordance with applicable sections of AWWA D107. The required capacity and dimensions of the tank are noted on the Drawings and in this Section of the Specifications.
- B. Roof Support: All structural members supporting the roof of the steel tank shall be flat bar or sealed square tubular sections. I-beams or other sections with horizontal projections may be used if the nominal depth is 10 inches or greater. Support beams shall be seal welded to the underside of the roof plate along the entire length of the beam.
- C. Cone: For areas of the elevated tank where the water is supported by a steel cone, the Tank Manufacturer shall submit evidence that the design is based on a finite element shell analysis. The analysis shall include the effects of material and geometric non-linearities and residual stresses. The modeled imperfection shall not be less than as specified in AWWA D100. The cone model should recognize the restraint conditions compatible with the actual response of the concrete support structure. The design shall have a minimum factor of safety of 2.0 against buckling.

2.05 ACCESSORIES

- A. General: Accessories shall comply with the minimum requirements of the Specifications, Codes and Standards listed in this specification, current applicable safety regulations, and the operating requirements of the structure.
- B. Ladder Access:
 - 1. Ladders shall be in accordance with AWWA D107 and ACI 371R, except as modified in this Section.
 - 2. Ladders shall be provided from the slab on grade inside the base of the support wall to the upper walkway platform located below the tank floor. The tank floor manhole shall be provided with ladder access from the upper platform. A ladder shall extend from the upper platform, through the access tube interior to the roof. Ladders mounted on the access tube exterior shall be provided for access to tank interior.
 - 3. Ladders that terminate at platforms or landings shall extend a minimum of 48 inches beyond the platform elevations.
 - 4. Ladders located in the concrete support structure and access tube interior shall be galvanized steel. Tank interior ladders shall be carbon steel and coated in accordance with the tank interior coating system.
 - 5. Ladder side rails shall be a minimum 3/8 inch by 2 inches with a 16-inch clear spacing. Rungs shall be minimum 3/4-inch diameter, spaced at 12-inch centers and plug welded into holes drilled in the side rails. Tank ladders shall be provided with 1-inch diameter rungs and 1/2-inch-by-2-inch side rails and shall be fully seal welded.
 - 6. Ladder shall be secured to the adjacent structure by brackets located at intervals not exceeding 10 feet. Brackets shall be of sufficient length to provide a minimum distance of 7 inches from the center of rung to the nearest permanent object behind the ladder.
- C. Safe Climbing Device:
 - 1. High strength aluminum, rigid rail safe climbing devices shall be provided on all ladders in accordance with OSHA requirements. Rails shall be center mounted and extend from

- 3 feet above the ladder bottom to the top of the ladder section. Mounting brackets, fasteners and splice bars shall be provided as required for a rigid installation.
2. Three trolleys with snap hooks that are designed to be operated with the aluminum rail shall be provided. A safety body harness with front and side rings shall be supplied for each trolley.
- D. Intermediate Platforms and Ladder Cages:
1. Provide intermediate offset platforms on the support wall ladder at maximum intervals shown on the Drawings. Platforms shall be a minimum 3 feet by 3 feet and provided with handrails, mid-rails and toe plates. Grating shall be used for the walking surfaces. All components shall be galvanized steel.
 2. Provide galvanized safety cages on support wall ladders between landings in accordance with OSHA requirements.
- E. Upper Platform: A 4-foot wide upper walkway platform shall be located at the top of the support wall to provide access from the support wall ladder to the roof access ladder located on the interior of the access tube. Platforms shall be provided with handrails, mid-rails and toe plates in accordance with OSHA requirements. Grating shall be used for the walking surface. All components shall be galvanized steel.
- F. Support Wall Doors:
1. Personnel Door:
 - a. Door frames shall be 14-gauge with concealed reinforcement at hardware locations. Expansion type anchors for existing openings shall be installed near the top, bottom and intermediate point of each jamb to rigidly secure the frame. Doors shall be 1-3/4-inch thick insulated, reinforced, full, flush type with 16-gauge face sheets and concealed reinforcement at hardware locations. All edges shall be finished flush with watertight seams. Frame shall be galvanized. Shop applied finish for the door shall be baked on rust inhibitive primer. Field finish shall be compatible with the tank exterior and approved by Owner. Standard hardware shall be stainless steel and include three 4-1/2-inch-by-4-1/2-inch hinges, industrial duty closer and lockset keyed to the Owner's requirements.
 - b. Size, quantity and location of personnel door(s) shall be as shown on the Drawings.
 2. Overhead Vehicle Door:
 - a. Door installation shall be on the interior face of the support wall. The door frame shall be a steel plate fabrication detailed, fastened and reinforced to accept the door. Frame shall be galvanized. Shop applied finish for the door shall be baked on rust inhibitive primer. Field finish shall be compatible with the tank exterior and approved by Owner. Operation shall be manual with a chain hoist. The curtain shall be formed of 22-gauge steel interlocking slats with end locks and wind locks designed for a wind loading of 20 psf. Torsion springs shall be mounted on a solid torsion rod, which is attached to an exterior mounted spring tension adjustment wheel. A 24-gauge steel hood shall be provided with a weather seal to protect the assembly. Steel brackets shall be installed to the interior face of the wall with expansion anchors, which enclose and support the counterbalance assembly with sealed bearings. Steel curtain guides are mounted to the brackets. The curtain,

bottom bar, brackets, guides, hood, pipe and chain shall be galvanized. Provide with locking device.

- b. Size, quantity and location of vehicle door(s) shall be as shown on the Drawings.

G. Tank Openings:

1. Floor: Provide a 30-inch diameter manhole through the tank floor. The manhole shall be operable from a ladder located on the upper platform and shall be designed to withstand the pressure of the tank contents without leakage. The manhole assembly shall include a stainless steel handwheel operator and threaded components.
2. Roof: Provide two 30-inch square or two 30-inch diameter access hatches on the roof of the tank. One hatch shall allow egress from the access tube to the roof. A second hatch, located adjacent to the first, shall allow access to the interior of the tank via the ladder mounted on the exterior of the access tube. The openings shall have a minimum 4-inch curb. Provide aluminum covers with a 2 inch down turned edge, stainless hinges, hold open arm and a locking mechanism.

H. Access Tube: Provide a minimum 48-inch diameter centrally located access drywell through the steel tank to provide access to the tank roof from the upper walkway platform and to house future telecommunication cabling. The access tube shall incorporate a 2-inch-by-2-inch channel to collect condensation that may form on the interior surface. A flexible 3/4-inch PVC hose complete with backflow preventer shall drain the channel to the overflow pipe.

I. Roof Railing: Provide a 42-inch high roof guardrail with hand rails, mid rails, and toe plates in accordance with OSHA requirements and a minimum diameter of 24 feet or as required to enclose all roof accessories within the railing, except interior rigging access point.

J. Rigging Access:

1. Provide a 24-inch-by-36-inch opening near the top of the support wall. This opening shall be accessible from a platform and shall provide access to the exterior-rigging rail located at the tank/support wall intersection. The access opening shall be provided with a hinged aluminum louvered vent with insect screen.
2. A minimum 24-inch diameter opening shall be provided on the tank roof to provide access to the tank interior rigging rail. The opening shall have a minimum 4-inch curb. Provide an aluminum cover with a 2-inch down turned edge and a locking mechanism.

K. Painters Rails:

1. Interior Painters Rails: Provide permanently installed rails suitable for rolling trolleys at the interior of the tank near the tank wall/roof and access tube/roof connections. Rails shall be galvanized and painted.
2. Exterior Painters Rail: Provide an exterior painter's rail at the base of the tank adjacent to the support structure and shall be accessible from the walkway via the upper platform and support wall painters vent. Rail shall be painted.

L. Piping:

1. Inlet/Outlet Pipe:

- a. Provide a 24-inch inlet/outlet pipe that extends from the base of the support structure and connects to the inlet and outlet valve assemblies inside the tank as shown in the Drawings. Provide check valves as shown and pipe supports as required inside the bowl. The bottom capacity level of the tank's operating range shall be at or above the elevation of the outlet. All pipe material shall be Schedule 10, 304L stainless steel.
 - b. The inlet/outlet pipe shall be designed to support all related static and dynamic loads. Galvanized steel brackets, guides and hangers shall be provided on the support wall and tank floor at a maximum of 20-foot intervals.
 - c. The inlet/outlet pipe shall be designed and constructed to accommodate any differential movement caused by settlement and by thermal expansion and contraction over the range of extreme temperature differences expected for the support wall and pipe. The required flexibility shall be provided by an expansion joint located near grade in the vertical section of pipe. Electrical isolation gaskets shall be used between dissimilar pipe materials as needed.
2. Overflow Pipe:
- a. Provide a 20-inch overflow pipe. The top of the overflow shall be located within the tank at the overflow elevation. It shall run adjacent to the access tube and extend through the tank floor. The pipe shall run vertically beside the support wall to grade. A base elbow shall direct the overflows through the support wall, where the pipe shall be terminated with a flap valve. Pipe material for the full extent of the overflow shall be Schedule 10, Type 304L stainless steel.
 - b. The entrance to the overflow pipe shall incorporate a conical weir or weir box and be designed for the maximum inlet flow rate. The design shall be based on the water level cresting a maximum of 6 inches above the overflow elevation.
 - c. The overflow shall be designed to support all related static and dynamic loads. Galvanized steel brackets, guides and hangers shall be provided on the support wall and tank floor at intervals not exceeding 20 feet. The overflow and weir section within the tank shall be stainless steel and supported by the access tube.
 - d. The overflow pipe shall be designed and constructed to accommodate any differential movement caused by settlement and by thermal expansion and contraction over the range of extreme temperature differences expected for the support wall and pipe. A layout with sufficient upper offset to accommodate differential movement is acceptable. If this method is not applicable, the required flexibility shall be provided by an expansion joint located near grade in the vertical section of pipe.
3. Tank Drain: A 6-inch diameter stainless steel drain pipe shall penetrate the tank at the low point of the tank floor and connect to the overflow pipe. The drain inlet shall be fitted with a gate valve with handwheel accessible from the upper platform as shown in the Drawings. The drain pipe shall have a wall thickness equal to or greater than standard weight pipe. Pipe material for the full extent of the drain shall be Schedule 10, Type 304L stainless steel.
4. Ductile Iron Pipe Requirements: Ductile Iron Pipe in accordance with Section 33 05 01.02 "Ductile Iron Pipe and Fittings."

5. **Stainless Steel Pipe Requirement:** Pipe and fittings shall be Type 304L stainless steel fabricated from material meeting the requirements of ASTM A240. Fabrication, inspection, testing, marking and certification of pipe and fittings shall be in accordance with ASTM A778 and A774 respectively. Backing flanges shall be in accordance with ASTM A285-C drilled to ANSI B16.5 Class 150. Pipe, fittings and welds shall be cleaned and passivated.

M. Ventilation:

1. **Tank Ventilation:**

- a. A tank vent shall be provided, located centrally on the tank roof above the maximum weir crest elevation. It shall consist of stainless steel or aluminum components, including a support frame, screened area and cap. The vents shall be easily dismantled to facilitate removal and cleaning of the screen. The support shall be fastened to a flanged opening in the tank roof. The vent caps shall be provided with sufficient overhang to prevent the entrance of wind driven debris and precipitation. A minimum of 4 inches shall be provided between the roof surface and the vent cap.
 - b. The tank vent shall have an intake and relief capacity sized to prevent excessive pressure differential during the maximum flow rate of water, either entering or leaving the tank. The overflow pipe will not be considered as a vent. The maximum flow rate of water exiting the tank shall be calculated assuming a break in the inlet/outlet at grade when the tank is full. The vent shall be provided with an aluminum or fiberglass insect screen. Vent capacity shall be determined based on open area provided by the screen meeting TCEQ requirements.
 - c. In addition to the tank vent, a pressure/vacuum relief mechanism shall be provided that will operate in the event of vent failure. The mechanism shall be designed to return automatically to its original position after operation. The pressure/vacuum relief mechanism shall be located on the tank roof above the maximum weir crest elevation, and may be incorporated in the vent assembly.
2. **Support Structure Ventilation:** The location and number of vents for ventilation of the concrete pedestal interior should conform to state and local building code requirements based on occupancy classification. A removable vent at the top of the pedestal shall be used for access to the exterior rigging rails. Provide aluminum louvered vents with removable insect screens. Vents should be accessible from the interior ladders, platforms, or floors.
 3. **Access Tube Ventilation:** Provide a 6-inch diameter aluminum vent with insect screen on the access tube hatch cover.

N. Interior Floors:

1. **Slab on Grade:** Provide a 6-inch thick, 3500-psi concrete floor slab in the base of the support structure. The slab shall be supported per the geotechnical report and shall be reinforced with #5 reinforcing steel at 12-inch centers each way. Provide 1/2-inch expansion joint between floor slab and support wall and at pipes and supports that extend through the floor. Place cap strip and sealant over the expansion joint. The slab shall be sloped at 0.5 percent toward the southern truck door for drainage.

2. Structural Floor:

- a. Provide a composite construction structural floor located 20 feet above the slab on grade. The design shall comply with the applicable requirements of AISC S335. It shall be designed for a minimum uniform heavy load of 250 psf. The floor shall consist of a concrete slab supported by a galvanized formed steel deck and galvanized steel girders.
- b. The structural floor shall be a clear span design supported entirely by the concrete support wall. All loads transferred from the structural floor to the support wall shall be considered in the design. The wall shall be strengthened as required in the vicinity of connections causing point load or eccentric conditions. Loads transferred from the structural floor(s) to the foundation shall be considered in the design of the foundation.
- c. Unless structural floor and supports are isolated from the wall, loads on the wall caused by thermal stresses in these members shall be considered. An analysis of the lateral loading condition shall be performed and the wall strengthened accordingly.
- d. Provide a galvanized steel access stairway adjacent to the support wall. Access openings through the structural floor shall be protected with 42 inch high galvanized steel handrails.

O. Level Monitoring:

1. General: Provide a minimum of one 3/4-inch coupling welded to each inlet/outlet pipe a maximum of 5 feet above grade and above any tank control valve. Each coupling shall be provided with a stainless steel nipple and an isolation gate valve.
2. Pressure Gauge: Provide pressure gauges as shown on the Drawings. Refer to Section 22 05 19 "Meters And Gauges for Plumbing Piping."

P. Lightning Protection: Provide a lightning protection system for the elevated tank as indicated in Section 26 41 13 "Lightning Protection for Structures."

Q. Communications Equipment:

1. The Owner's antenna mounts shall be provided at the top of the tank. Five antenna locations shall be provided. The location of the mount on top of the tank shall be coordinated with the Owner.
2. Five future antenna location openings in the tower pedestal and foundation shall be provided as shown on the Drawings. All openings shall include water tight, removable plugs.

2.06 ELECTRICAL AND LIGHTING

- A. General: All Work shall be performed and all materials shall be provided in accordance with National Electric Code and the governing electrical, safety and inspection codes, regulations and ordinances. Refer to Division 26 additional requirements.

2.07 STEEL TANK PAINTING

- A. Steel tank painting shall comply with AWWA D102 and NSF 61 and with Section 09 96 00 "High-Performance Coatings." Galvanized, stainless steel and concrete surfaces are not coated except as otherwise specified. Color selection shall be determined by The Owner.

2.08 SOURCE QUALITY CONTROL

- A. Tests: Review mill test certifications of all steel plate, structural components and reinforcement to ensure compliance with specification requirements.
- B. Inspections: Provide inspection of shop fabricated components in accordance with AWWA D100.

3.00 EXECUTION

3.01 EXAMINATION

- A. Foundation Excavation: The foundation bearing surface and excavation shall be inspected by a representative of the geotechnical engineer prior to foundation construction. Verification of the applicable design and construction recommendations is required. The geotechnical engineer shall be retained by the Tank Manufacturer.
- B. Environmental Conditions: Prior to performing any Work, verify the expected temperature, humidity and weather conditions are within the specified limitations for executing the Work.
- C. Elevated Tank Components: After completion of each major component and prior to proceeding with the next stage of construction, verify that tolerance inspections and material quality control tests conform to the requirements as specified in this specification.

3.02 REINFORCED CONCRETE CONSTRUCTION

- A. Reinforcement: Fabrication, placement, development and splicing of reinforcement shall be in accordance with ACI 318, ACI 371R, and ACI 117.
- B. Formwork:
 - 1. Formwork design, installation and removal shall comply with the minimum requirements of ACI 318, ACI 371R, and ACI 117 and with the applicable recommendations of ACI 347.
 - 2. Forming systems shall be designed with the provision of ties and bracing such that concrete components conform to the correct dimensions, shape, alignment and elevation without leakage of mortar. Formwork systems shall be designed to safely support all loading conditions. Embedded items shall be properly positioned and secured. Form surfaces shall be cleaned of foreign materials and coated with a release agent prior to placing reinforcement.
- C. Concrete: Concrete proportioning, production, placement, quality control and curing procedures shall comply with ACI 318, ACI 371R and ACI 117. Concrete shall satisfy the specific structural, durability and architectural requirements of the completed components.
 - 1. Proportioning: The proportions of materials for concrete shall be established to provide adequate workability and proper consistency to permit concrete to be worked readily into the forms and around reinforcement without excessive segregation or bleeding. Unless otherwise specified, concrete without high range water reducer shall be

proportioned to produce concrete slumps at the point of placement between 2 and 4 inches. If high range water reducer is used, concrete slump prior to addition shall be 3 to 4 inches. The slump, after addition of high range water reducer, shall be a maximum of 8 inches. Air shall be entrained to provide concrete with 3.0 to 6.0 percent air content.

2. Production: Concrete that arrives at the Project with slump below that suitable for placing, may have water added within the limits of the maximum permissible water-cement ratio. Maximum slump shall not be exceeded. The water shall be incorporated by additional mixing equal to at least half of the total mixing time required. For concrete with site-administered high range water reducer, the pre-plasticized minimum slump requirement shall be attained as permissible by addition of water and mixing prior to the addition of the water reducer.

- a. Placement: Prior to concrete placement, all snow, ice, water or other foreign material shall be removed from the spaces that the concrete will occupy. Concrete shall be deposited in its final position in accordance with ACI 318 or ACI 350. These shall be moved at short intervals to prevent stacking of concrete.
- b. All concrete shall be consolidated by vibration while fresh concrete is still plastic so that the concrete is thoroughly worked into the corners of forms and around the reinforcement and embedded items to eliminate all air or stone pockets which may cause honeycombing, pitting, or planes of weakness. Internal vibrators shall be the largest practical size that can be used in the Work and they shall be operated by competent workmen.

D. Weather:

1. Concrete shall not be placed during precipitation or extreme temperatures unless protection is provided.
2. During cold weather the recommendations of ACI 306.1 shall be followed.
3. During hot weather the recommendations of ACI 305.1 shall be followed.

3.03 FOUNDATION

- A. Excavation: After verification of the foundation-bearing surface, provide a 2-inch thick concrete working slab within the lower excavation limits. Grade the Site to prevent runoff from entering the excavation.
- B. Concrete Construction:
 1. For shallow foundations, reinforcement placed adjacent to a concrete working slab shall have a 2-inch minimum cover, and reinforcing steel shall be supported by precast concrete block, metal or plastic bar supports.
 2. The sides of foundations shall be formed using any suitable system conforming to ACI 318. Earth cuts shall not be used as forms for vertical surfaces. Forms shall be provided on top sloping surfaces steeper than 2.5 horizontal to 1 vertical. Straight form panels may be used to form circular foundation shapes. The minimum design radius shall be maintained at all sections.
- C. Finish:

1. Formed surfaces shall have a smooth form finish when exposed and a rough form finish when not exposed.
2. Unformed surfaces shall have a troweled finish when exposed and floated finish when not exposed.

3.04 CONCRETE SUPPORT STRUCTURE

A. Architectural Concrete Construction:

1. The exposed exterior surface of the concrete support wall is designated architectural concrete. The concrete and formwork requirements of this Section shall be strictly enforced to ensure concrete of the highest practicable structural and architectural standard. Concrete proportioning, placing, and finishing shall be in accordance with the ACI 301, Chapter 18, except as modified by this Section. Formwork design, installation and removal shall comply with the minimum requirements of ACI 318, ACI 371R, ACI 117 and the applicable requirements of ACI 347, except as modified by this Section.
2. Attention shall be given to ensure the same concrete design mix is used throughout the support wall. The proportion, type and source of cement and aggregates shall not be changed. Uniform moisture content and placing consistency shall be maintained.
3. Drop chutes shall be used in all wall concreting operations where concrete placement is 5 feet or greater in drop height. Concrete shall be placed directly inside the reinforcement cage. The concrete pour rate and placement procedures shall prevent aggregate segregation and form splatter with the resulting surface finish variations.
4. Support wall reinforcement shall be installed with plastic supports. Maximum spacing of supports for welded wire fabric shall be 5-foot centers, horizontal and vertically.
5. Forming systems shall be designed with the provision of ties and bracing such that concrete components conform to the correct dimensions, shape, alignment and elevation. Embedded items shall be properly positioned and secured. Form surfaces shall be thoroughly cleaned of concrete residue and coated with a release agent prior to placing reinforcement. Do not allow excessive release agent to accumulate on the form. Steel forms shall be coated with a non-staining, rust preventative form oil or otherwise protected. Rust stained steel formwork shall not be used.
6. The forming system for the pedestal wall shall be fully engineered and detailed with procedures to meet the increased demands of architectural concrete. The support wall shall be constructed with a jump form process using form segments prefabricated to match the wall curvature. Concrete pour height shall be a minimum of 4 feet and a maximum of 10 feet. Form panels shall extend the full height of the concrete pour using only vertical panel joints. Form system shall be designed to be secured to the previous wall pour. The space between the form and the previous pour shall be sealed to prevent grout leakage. Wall forms shall incorporate a positive means of adjustment to maintain dimensional tolerances specified. Wall forms shall be adjusted for vertical plumb and circularity and locked into position prior to concrete placement. Panels shall be designed for lateral pressures associated with full height plastic concrete head, and support and bracing shall be provided for construction related impact loads and wind loads. Working platforms that allow safe access for inspection and concrete placement shall be provided. Form surfaces shall be steel, plastic or fiberglass coated material.

7. The form system shall incorporate a uniform pattern of vertical and horizontal rustications to provide architectural relief to the exterior wall surface. Rustication strips shall be sealed to the form face to eliminate the grout leakage that results in broken corners, color variations and rock pockets. Broken edges and chamfers will not be accepted. All construction joints and panel joints shall be located in rustications. Vertical panel joints shall be sealed using closures which combine with the form pattern to eliminate grout leakage and panel joint lines. All joints shall be grout tight. The vertical and horizontal rustications shall be proportioned and combined to impart a symmetrical architectural pattern to the completed structure. Form ties shall be located in a uniform pattern. No architectural form treatment is required on the interior surface.
 8. Support wall concreting shall be per the Tank Manufacturer's standard procedures submitted to the Engineer.
 9. Wall forms shall not be disturbed or removed until the concrete has attained sufficient strength to prevent forming operations or environmental loads from causing surface damage or excessive stress. Form removal shall be based on early age concrete strength testing. The minimum concrete strength shall be established by the Tank Manufacturer, based on an analysis of stress at critical stages throughout the forming and concrete operations. Early age concrete testing shall be in accordance with ACI 228.1R-89. Pull Out testing in accordance with ASTM C900-99, Maturity Method testing in accordance with ASTM C1074-93, or field cured cylinders compressive strength tested in accordance with ASTM C172 are the acceptable methods to determine early concrete strength.
 10. The formwork system for the domed structural floor shall be designed to support all construction loads. Adequate shoring and bracing shall be provided to transfer loads without appreciable movements. Form surfaces shall be steel, plastic or fiberglass coated material. Shoring and forms for the structural dome slab shall remain in place until the concrete has gained sufficient strength to carry the floor weight without damaging deflections.
 11. Concrete surfaces shall be protected in accordance with the recommendations of ACI 306 until the component attains 35 percent of the specified compressive strength. At this time, protection may be removed subject to the allowable temperature differential. A reasonable temperature differential shall be defined, based on component thickness and restraint conditions.
- B. Finish:
1. Provide a smooth form finish without rub for the interior and exterior support wall. Tie holes shall be plugged using grout on the interior and manufactured plugs on the exterior which match the color of the cured concrete as closely as possible. Provide a light sandblast to the exposed exterior concrete support wall surface. Sandblast must be done in the presence of the Owner's Representative and be approved by the Owner's Representative.
 2. Provide a smooth form finish without rub for the interior dome slab. The unformed surface shall have a floated finish.
- C. Dimensional Tolerances:
1. Support structure concrete construction shall comply with ACI 117 and the following:

a. Support Wall Variation:

Thickness	-3% to +5%
Diameter	0.4% ≤ 3 in.
Vertical Alignment:	
In any 10 feet of height	1 in.
In any 50 feet of height	2 in.
Over total height	3 in.

b. Tank Floor Variation:

Slab floor thickness	-3% to +5%
Dome floor normal radius	-6% to +10%
Finish tolerance measured with a 5 ft. straightedge or radius board	3/4 in.

c. Level Alignment Variation:

From specified elevation	1 in.
From horizontal plane	1/2 in.

d. Offset Between Adjacent Forms:

Exterior exposed surfaces	1/8 in.
Interior exposed surfaces	1/4 in.

D. Mock Up Panel:

1. A mock up panel of the basic concrete support structure shall be constructed using the proposed formwork, concrete, placement, and finishing methods. Minimum size will be 8 feet wide by 8 feet high. This panel shall be agreed upon by the Tank Manufacturer and Engineer as the reference standard with which to judge surface quality, appearance and uniformity of texture and color. This mock panel shall remain immediately adjacent to the tank concrete support structure so that the Owner and Engineer can easily compare the mock-up panel to the actual support structure construction. The panel shall not be removed from the Site until the Owner has accepted the entire tank.
2. Review and acceptance of formed concrete surface will be made by the Owner or Owner's Representative within 24 hours of form removal. The Tank Manufacturer shall be responsible to inform the Owner's Representative as to pour schedule at least 48 hours in advance.
3. Concrete with surface defects exceeding limitations specified herein or not meeting the standard represented by the mock-up panel shall be repaired to meet that standard, or removed at no additional cost to the Owner.

3.05 STEEL TANK

A. Welding:

1. Welding procedures and general welding requirements shall be in accordance with AWWA D107, Section 5.4, "Fabrication and Construction Requirements".
 2. No structural welding is permitted to any steel embedded in hardened concrete, unless a weld procedure is utilized that will preclude damage to the concrete.
- B. Fabrication: Layout, cutting, forming, edge preparation and workmanship for steel tank components and fabrications shall be in accordance with AWWA D100, Section 9, "Shop Fabrication".
- C. Tank Erection: Steel tank erection procedures and general requirements shall be in accordance with AWWA D100, Section 10, "Erection".
- D. Dome Lining: Domed tank floor shall be lined with steel plates that may be shaped to match the shape of the tank floor. Unformed steel liner plates that do not match the shape of the concrete floor may be used provided the liner plate is grouted after welding. The steel liner should be constructed with a 1-inch or larger grout space between the liner plate and the concrete member. Subsequent to testing, the void in the interface between the steel tank floor plate and the supporting structural concrete dome or slab shall be filled with a flowable grout mix using a procedure that removes entrapped air. Provide anchorage in areas where the grout pressure is sufficient to lift the plate.

3.06 TANK PAINTING

- A. Refer to Section 09 96 00 "High-Performance Coatings."

3.07 FIELD QUALITY CONTROL

- A. Concrete Testing and Inspection:
1. The evaluation and acceptance of concrete shall be in accordance with Section 5.6 of ACI 318 and ACI 117, except as modified in this Section.
 2. Four cylinders shall be made from each Sample required. Two cylinders should be tested at 28 days for the strength test. One cylinder should be tested at 7 days to supplement the 28-day tests. The fourth cylinder is a spare to replace or supplement other cylinders.
 3. Slump, air and compressive cylinder testing shall be performed by an independent laboratory. The Tank Manufacturer shall retain the independent laboratory and provide the Owner with copies of all test results.
 4. The support wall radius, plumb and thickness shall be verified for each concrete lift at 45 degree intervals. An inspection report certified by the Tank Manufacturer shall be provided to the Owner at Project completion.
- B. Steel Tank Testing and Inspection:
1. Inspection procedures for the steel tank shall be as required by AWWA D107, Section 9, "Inspection and Testing". Radiographic inspection of full penetration butt-welded joints shall be made by an independent inspection company retained by the Tank Manufacturer.
 2. Erection tolerance of the steel cone in the radial direction shall be measured. Provide field measurements at 30-degree intervals.

3. Weld joints of plate over the structural concrete floor shall be tested for leaks by vacuum box / soap solution testing, or equivalent method prior to grouting.
- C. Piping Test Inspection: Refer to Section 01 40 00 "Quality Requirements."
- D. Tank Painting Inspection and Testing: Refer to the North Central Texas Council of Governments Standard Specifications for Public Works Construction, 3rd Edition, Item 6.7, Underground Conduit Construction.

3.08 CLEAN AND ADJUST

- A. Site: The Site shall be kept in a clean and safe condition at all times. The Tank Manufacturer shall remove all construction equipment and debris at Project completion.
- B. Tank Disinfection:
 1. Water and sufficient pressure for flushing, cleaning, initial testing and disinfection shall be supplied by the Owner at no cost to the Tank Manufacturer. Tank Manufacturer is responsible for coordination with Owner and all materials required to test and disinfect tank. Tank disinfection shall be in accordance with AWWA C652, Chlorination Method No. 2
 2. After disinfection, the Tank Manufacturer shall arrange for bacteriological testing of water Samples from the tank. Failed tests will be supplemented by the Tank Manufacturer. The tank shall not be placed in service until bacteriological tests pass.
 3. Disinfection of piping shall be performed per Section 33 10 13 "Disinfecting of Water Utility Distribution."

END OF SECTION

**CITY OF LANCASTER
2.0 MG ELEVATED STORAGE TANK
CONTRACT DOCUMENTS AND SPECIFICATIONS
BID NO. 2012-45**

DIVISION 40 PROCESS INTEGRATION

40 90 00	Instrumentation and Control for Process Systems
40 90 01	Instrumentation
40 90 02	Supervisory Control & Data Acquisition



FREESE AND NICHOLS, INC.
TEXAS REGISTERED
ENGINEERING FIRM
F-2144

40 90 00 INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEMS

1.00 GENERAL

1.01 SCOPE

- A. General Requirements for Instrumentation.

1.02 QUALITY ASSURANCE

- A. GENERAL: Should there be a conflict between various standards, codes, specifications, and contract drawings, bring the matter immediately to the attention of the Owner's Representative.

B. REFERENCE STANDARDS:

1. American Society of Testing Materials:
 - A269 Seamless and Welded Austenitic Stainless Steel Tubing for General Service
 - B 68 Seamless Copper Tube
 - D 1047 Polyvinyl Chloride Jacket for Wire and Cable
 - A 36 Specification for Structural Steel
 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware
2. Research Council on Riveted and Bolted Structural Joints (RCRBSJ).
3. American Institute of Steel Construction (AISC).
4. Steel Structures Painting Council (SSPC): Painting Specifications for weather exposure.
5. American Welding Society (AWS): Welding Code D 1.1-75.
6. Federal Specifications: Primer, Paint Zinc, Chromate, Alkyd Type, Fed. Spec. TT-P-645a.
7. National Electrical Manufacturers Association (NEMA).
8. National Fire Protection Association (NFPA): National Electrical Code (NEC), 1990 edition.
9. Instrument Society of America (ISA):
 - RP 3.1-1960 Flow Meter Installations, Seal and Condensate Chambers
 - S5.1-1973 Instrumentation Symbols and Identification
 - RP7.1-1956 Pneumatic Control Circuit Pressure Test
 - S7.3-1975 Quality Standard for Instrument Air
 - RP18.1-1965 Specifications and Guides for the Use of General Purpose Annunciators
 - S5.4-1976 Instrument Loop Diagrams
 - S8.1-1968 Instrument Enclosures for Industrial Environments
 - RP12.1-1960 Electrical Instruments in Hazardous Atmospheres
 - RP20.1, 20.2 Specification Forms for Instruments
 - S39.1-1972 Control Valve Sizing Equations
 - S39.2-1972 Control Valve Capacity Test Procedures
 - S51.1 Process Instrumentation Terminology
10. American Petroleum Institute (API):
 - API RP 550 Manual on Installation of Refinery Instruments and Control Systems
 - API RP 520 Recommended Practice for the Design and Installation of Pressure-Relieving Systems in Refineries

11. Scientific Apparatus Makers Association (SAMA):
 PM 20.1-1973 Process Measurement and Control Terminology
 RC5-10-1963 Resistance Thermometers
12. Underwriters' Laboratory (UL): Subject 13, Subject 1227.
13. Factory Mutual (FM).
14. American National Standard Institute (ANSI):
15. Supplement to C37.90-1971, Relays and Relay Systems Associated with Electric Power Apparatus (IEEE Std. 313-1971), C37.90a-1974.
16. National Bureau of Standards (NBS).
17. Institute of Electrical and Electronics Engineers (IEEE): Tray Fire Tests, IEEE 383.

1.03 GUARANTEE

- A. **GUARANTEE PERIOD:** The Contractor shall provide guarantees as defined hereunder for a period of one year after final acceptance by the Owner.
- B. **GUARANTEE REQUIREMENTS FOR ANALOG DEVICES:** Each device shall perform its intended function within the specified operating accuracy and repeatability without more than 12 adjustments for any consecutive period of 12 months. The availability of each device shall be not less than 98.0 percent for any consecutive period of six months. Downtime of analog devices affecting more than 8 loops shall be considered a system failure.

1.04 CONTRACTOR'S QUALIFICATIONS

- A. The System Integrator's personnel shall have a minimum of ten years of prior experience in furnishing, installation, testing, programming, debugging, start-up, and training for systems at least as large and similar to the one in this Contract. The system installer shall have employees who are qualified technicians for the duration of the contract. The Contractor shall submit for evaluation within one week of Notice to Proceed, his instrumentation systems installer's company resumes complete with company history, project lists, locations, Owner, costs, type of system installed, and references with phone numbers. Installers not meeting these qualifications shall not be accepted. As a part of this contract, the instrumentation system installers shall assume complete system responsibility, including coordination and interfacing with all subsystems and equipment suppliers and manufacturers. The Contractor shall actively be involved in control system integration industry for the last five years. The Contractor shall not act as a broker for the project; he shall provide and be responsible for all hardware, interfacing software, training, testing, and extended warranties.

1.05 DEFINITIONS

- A. The terms used in this specification conform to definitions in ISA S51.1, SAMA PMC 20.1-1973 and RC 5-10-1963, except as modified below.
 1. **Device:** An electronic or mechanical apparatus designed to perform a specific measurement or control function.
 2. **Equipment:** The machinery used in a process, e.g., pumps, fans, etc.
 3. **Interchangeability error:** The algebraic difference between the indication and true value of the measured variable as a result of exchanging a device with a replacement.
 4. **Loop:** Any combination of interconnected transmitters, receivers, switches, alarms, indicators, controllers, computers, or final control elements.
 5. **Operating accuracy:** Conformity of indicated value to accepted standard value or true value throughout specified operating conditions with a confidence level of 95 percent includes, but is not limited to, hysteresis, linearity, and operating influence of temperature, pressure, supply voltage, and transmitter power supply. Operating accuracy for loop is defined as root-mean-square (RMS) of individual device operation accuracies.

6. **Process:** A progressively continuing operation that consists of a series of controlled actions systemically directed toward a particular result, e.g., a process to mix, filter, heat, and/or cool air to a particular condition.
7. **Response:** The results of the act, or process of measuring the time difference between the time of a change in an input signal or a measured variable, and the time when the output, display, and final control element in the loop has changed to at least 60 percent of the change which should result from the input change.
8. **Subsystem:** A discrete subdivision of a system and an assemblage of parts, devices, or software modules designed to perform one or more of the specific tasks required for the system to accomplish its functions.
9. **System:** An assemblage of sometimes diverse parts, devices, or software modules serving a common set of measurement or control functions.
10. **Time resolution:** The result of the act or process of rendering distinguishable events occurring at nearly the same time. Expressed as a measurement of time in seconds.
11. **Unit:** Any combination of equipment items interconnected in a predetermined manner, performing one or more controlled actions toward a particular result. A discrete subdivision of a process.
12. **Concealed - Accessible:** Out of general sight, but can be easily reached by removing panels or access doors.
13. **Concealed - Inaccessible:** Out of general sight and cannot be easily reached except by removing a permanent part of the building or using special tools.
14. **Exposed:** Open to general view without removing panels, access doors, or a permanent part of the building.
15. **Field termination point:** Termination of a run of raceway from an instrument panel to the vicinity of a field instrument. Field termination point is usually within five horizontal feet from the field instrument.
16. **Analog device:** Any sensor, transmitter, indicator, recorder, controller, computing relay, or control valve which transmits or receives an analog signal. Excludes the analog portion of a digital system or I/O subsystems.

1.06 SUBMITTALS

A. SHOP DRAWINGS AND PRODUCT DATA:

1. **Detail:** Give sufficient detail to permit system configuration, installation, and wiring without reference to design drawings. Refer to Division 1 - General Provisions.
2. As a minimum, shop drawings shall include a bill of materials with original manufacturer's name and catalog number (re-labeled component information is not acceptable), original manufacturer's catalog cut sheets, front views, assembly drawings, nameplate schedules, electrical schematics, electrical connections diagrams, and piping connection diagrams.
3. Electrical, piping, and interconnection diagrams shall show all terminations of equipment, complete with conduit, cable, and equipment designations, and shall include terminal identification information.
4. Include size of all conduits, pipe, cables, and conductors.
5. Physical arrangement drawings shall include operating and servicing clearance requirements, cooling requirements, electrical power requirements, and cabling information.
6. Operator console configuration drawings shall include specific location of all keys and pushbuttons.
7. Logic drawer drawings shall show used space and expansion space.
8. Show appropriate tag numbers on all product data.
9. Software specifications for all software provided in addition to existing standard software.
 - a. Include fully annotated source listings, input-output requirements, memory requirements, timing and sequencing requirements, flow chart showing functions performed, operating sequences and decision points, required system configuration, list of known or anticipated limitations of software modules, list of malfunction

procedures to be followed for recovering from operator error or other malfunction, and description of how each module interfaces with calling and called programs.

- b. Provide proposed screen layouts showing modifications to existing screens, and new screens: Show all displays, inputs, outputs, recorders, alarms and indications along with the associated signal tag number.

B. TECHNICAL MANUALS:

1. Supply six (6) sets of technical manuals with software specifications to Owner's Representative no later than the equipment shipment date. Each set shall be bound in a standard size, three-ring, loose-leaf, vinyl plastic, hard-cover binder suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches.
2. Each set of technical manuals shall include a general and detailed description, a theory of operation description, detailed schematic drawings, specifications, and installation, connection, calibration, operating, troubleshooting, preventive maintenance, and overhaul instructions in complete detail with a clear and specific description of the steps the operators must take to perform each of the tasks and modes of operating specified. These manuals shall provide the Owner with comprehensive information on all systems and components to enable operation, service, maintenance and repair. Exploded or other detailed views of all instruments, assemblies, and accessory components shall be included together with complete parts lists and ordering instructions. These manuals are in addition to all applicable requirements of Division 1 - General Provisions.

C. SPARE PARTS LIST:

Contractor shall prepare and submit for Engineer's review a master spare parts list of all Division 40 items. All division 40 spare parts shall be turned over to the City at one time and stored into lockable cabinets.

2.00 PRODUCTS

2.01 INFORMATION ON DRAWINGS

A. The following information is indicated on the drawings:

1. Loop diagram on flow sheet for each control loop. Diagrams are schematic in nature and intended only as a guide to work to be performed.
2. Approximate location of primary elements, instrument panels, and final control elements.
3. Location of electrical distribution panel boards for instrument electrical power.
4. Location of equipment having alarms and equipment status contacts.
5. Location of equipment being controlled by system.

B. The following information is not shown on drawings, but shall be the responsibility of the Contractor to determine, furnish, and coordinate with other divisions based upon systems specified. Show this information on project record drawings.

1. Instrument loop drawings per ISA S5.4 minimum, desired and optional items.
2. Detailed enclosure and instrument panel layouts, PLC enclosure layouts, Filter console layouts, fabrication details, and wiring diagrams.
3. Detailed system configuration.
4. Raceway and cable routing for instrumentation wiring.

2.02 OPERATING CONDITIONS

- A. AMBIENT CONDITIONS:** Provide equipment suitable for ambient conditions specified. Provide system elements to operate properly in the presence of radio frequency fields produced by portable RF transmitters with output of five watts operated at 24 inches from instruments in the presence of plant telephone lines, power lines, and electrical equipment, and in the presence of digital data transmission systems.

- B. FIELD LOCATIONS: Field equipment may be subjected to ambient temperatures from -5 to 50°C with direct radiation and relative humidity from 45 to 100 percent with condensation.
- C. POWER SUPPLY: Power supply will be 117 volts a-c, single-phase, 60-hertz commercial power. Voltage variations will be at least plus or minus 8 percent. Certain loops shall have integral power supply as specified in the Contract Documents. Power supplies shall be provided in the panels as specified in the Contract Documents or required for a complete system, plus one spare.

2.03 SPARE PARTS

- A. Supply spare parts as indicated in these Specifications.
- B. Spare parts shall become property of the Owner.

2.04 MATERIALS AND EQUIPMENT

- A. Provide equipment of solid-state construction utilizing second source semiconductors, unless otherwise specified. Derate components to assure dependability and long-term stability. Provide printed or etched circuit boards of glass epoxy, hand or wave soldered, of sufficient thickness to prevent warping. Coat printed circuit boards in field-mounted equipment with two mils of solderable conformal coating complying with MIL-I-46058B. Alignment and adjustments shall be noncritical, stable with temperature changes or aging, and accomplished with premium grade potentiometers. Do not insert components of specially selected values into standard electronic assemblies to meet performance requirements. Use parts indicated in instruction manuals, replaceable with standard commercial components of the same description without degrading performance of completed assembly.
- B. Use test equipment and instruments to simulate inputs and read outputs suitable for purpose intended and rated to an accuracy of at least five times greater than the required accuracy of device being calibrated. Such test equipment shall have accuracies traceable to the National Bureau of Standards as applicable.

2.05 SPECIAL PROJECT REQUIREMENTS

- A. The instrumentation system Contractor shall provide the Owner's staff with all required training and operating procedures, at no extra cost to the Owner, in addition to In-Plant SCADA training specified in Section 40 90 02. The training schedule shall be coordinated with the Owner's Representative. Training shall include operating, testing, calibration and programming of the system, and simple troubleshooting of the system. The training shall include manuals which are specifically written for the system provided as described in Division 01 - General Provisions of these Specifications.
- B. The calibration, testing, and start-up of all the instruments whether existing or provided new, shall be done by the manufacturer's field technician/Engineer in the presence of the Owner. The Contractor shall provide a list of all manufacturers whose technicians will perform this work. The Contractor shall also provide a certified calibration report stating that each instrument shown or specified in the Contract Documents has been installed, tested and calibrated per manufacturer's recommendations and per these Contract Documents.
- C. Follow-up Services: After the acceptance of the system, the Contractor shall make four (4) trips to the project site for calibration and adjustment of all the instruments and devices, including the In-Plant SCADA system. The first trip shall be three months after acceptance of the complete system, and thereafter every three months for a total of four trips. These trips are in addition to all warranty items, and shall be at no extra cost to the Owner. The

Contractor shall provide the services of a trained technician for each trip with appropriate calibration and testing instruments. All defects shall be immediately remedied. The trips shall be coordinated with the Owner.

- D. All control software developed for this contract shall be delivered to the Owner stored on electronic media in a format suitable for installing on the existing equipment and new equipment installed under this contract. This includes all source code, complied code, link libraries, run-time libraries or other modules necessary to recreate an operational system in the event of a catastrophic failure or cessation of business by any of the Contractors. In addition, copies of all data bases and necessary associated files as configured after the final test shall be supplied on the same medium.

END OF SECTION

40 90 01 INSTRUMENTATION

1.00 GENERAL

1.01 WORK INCLUDED

- A. Furnish labor, materials, equipment and incidentals necessary to install all equipment for complete instrumentation and controls. Contractor's work shall include but not be limited to the following:
 - 1. Installation of equipment furnished under this contract.
 - 2. Interconnections between equipment furnished under this contract.
- B. The Contractor's attention is directed to the fact that instrumentation is an integrated system and as such shall be furnished by one vendor or system integrator who shall provide all the equipment and appurtenances, regardless of manufacture, and be responsible to the Contractor for satisfactory operation of the entire system.
- C. Supervision, labor, tools, and materials necessary for installation of the instrumentation equipment and material furnished herein and their interconnection shall be provided by the Contractor. Installation work shall conform to applicable city, state, and national building and electrical codes.
- D. Coordinate the work of the system manufacturer's service personnel during construction, testing, calibration and acceptance of the instruments.

1.02 QUALITY ASSURANCE

- A. **GENERAL:** Equipment shall be the Manufacturer's latest and proven design. Specifications and drawings call attention to certain features, but do not purport to cover all details entering into the design of the instrumentation system. The completed system shall be compatible with the functions required and the equipment furnished by the Contractor.
- B. **OPERATING VOLTAGE:** Electrical components of the system shall operate on 120 volt, single-phase, 60 Hertz, except as otherwise noted in the specifications.
- C. **POWER SUPPLIES:** The drawings and specifications indicate the energy sources that will be provided. Any other devices or power supplies necessary to obtain proper operation of the instrument system from these energy sources shall be furnished with the instrumentation.
- D. **INPUT/OUTPUT**
 - 1. In general and unless specifically stated otherwise, inputs and outputs involving instrumentation systems shown shall be 4-20 mA DC process measurement signals. Current loop isolators, current repeaters, or other signal isolators shall be furnished and installed as required to meet instrument specifications and to make instrumentation system fully operational.
 - 2. Pair shielded cable, as specified in Section 26 05 10, LOW VOLTAGE POWER CONDUCTORS & CABLES shall be used for all 4-20 mA DC loops.

1.03 SUBMITTALS

Submittals shall be in accordance with Section 01 33 00, SUBMITTALS and shall include:

- A. Shop Drawings

1. Shop drawings shall be submitted to the Engineer for approval before fabrication or shipment to the job. Equipment shall not be fabricated or shipped to the job before receipt of approved shop drawings from the Engineer. Submittals for approval shall include (1) component manufacturing data sheet indicating pertinent data and identifying each component by item number and nomenclature, (2) component drawing showing dimensions, mounting, and external connection details, (3) a system piping schematic and wiring schematic each on a single drawing with full description of operation, (4) complete schematic diagram of each piece of electrical and electronic equipment including electrical valves and tolerances for each component. Component identification on the schematic shall be as described above.
2. Following approval, the manufacturer shall be responsible for preparation of the required sets of these drawings for distribution as indicated in Division 0 and Division 1 specifications.
3. Shop drawings submitted for all equipment furnished under this section of the specifications, shall be submitted at the same time in the same package. Partial submittals will not be reviewed.

B. Sales bulletins and other general publications are not acceptable as submittals for approval.

C. Operation and Maintenance Manuals

1. Operating instructions shall incorporate a functional description of the entire system including the system schematics which reflect "as-built" modifications. Wiring diagrams shall be furnished as a part of the Operation and Maintenance Manuals which clearly show terminal numbers and wire numbers as they actually are in the instrumentation system. Instrument panel wiring shall be such that each wire installed has its own number designation at each end and such that no number is repeated. Instrument panel wire tagging instructions as specified in Section 26 05 10, LOW VOLTAGE POWER CONDUCTORS & CABLES shall be followed.
2. Special maintenance requirements particular to the system shall be clearly defined along with special calibration and test procedures
3. O&M manual shall include setup form for each instrument installed in the field. The setup form shall include the manufacturers name, model number, instrument location, instrument tag name, parameter settings, power supply location (panel circuit number), and full catalog ordering information.

1.04 STANDARDS

The applicable provisions of the following standards shall apply as if written here in their entirety:

ASTM A-126 Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings

ASTM B-61 Specification for Steam and Valve Bronze Castings

1.05 JOB CONDITIONS

A. SPARE PARTS

1. Furnish all standard recommended spare parts as indicated in the Manufacturer's instruction manuals, for each component in the system.
2. Furnish two (2) of each different type and size of fuses.

B. SPECIAL TOOLS: Furnish a kit which contains special size wrenches and other types of tools, not normally available, which are necessary for assembling, disassembling, aligning, and calibrating each piece of equipment. In addition, any piece of equipment (meter, test set, etc.) required by the Manufacturer to align, adjust, or otherwise calibrate any item under this section of the specification shall be furnished.

2.00 PRODUCTS

2.01 ENCLOSURES/PANELS

Enclosures and panels as indicated on the plans and in this specification shall be furnished, installed, and wired. Enclosures shall be NEMA 4X for outdoor environments and NEMA 1 enclosures for indoor environments, unless specifically stated otherwise.

2.02 PRESSURE INDICATING TRANSMITTER

- A. Pressure indicating transmitter shall measure pressure using a small deflection of the Hastelloy C diaphragm of the sensor and shall measure gauge or absolute pressure. Output signal shall be 4-20mA for the range of the transmitter. The transmitters shall have a hermetically sealed enclosure with externally adjustable span and zero, an integral junction box and an accuracy of 0.25% of span. Pressure transmitter shall be provided with pressure indication.
- B. Range limits of transmitter shall be 0-40 to 0-300 psi. Each transmitter shall include an integrally or externally mounted transient protector to protect the instrument against lightning produced voltage spikes and other transient surges. Transmitter shall not need calibration.
- C. Wetted part shall be made of 304 stainless steel. The process seal material shall be FPM Viton.
- D. Pressure transmitter shall be Rosemont 3051, Endress & Hauser or approved equal and shall be HART compatible.
- E. Pressure transmitter shall have a 3 valve manifold with normal, zero, block, calibrate and blow down functions. Provide D/A PTM6 or approved equal to allow maintenance to take the pressure transmitter out of service while the water line is in service and shall include a bleed valve to put the transmitter back in service and bleed the air out.

Tag	Service	Range
PIT-201	EST Level	0-150PSI

2.03 INTRUSION ALARM

- A. Hermetically sealed brushed anodized aluminum housing, Rhodium plated switch contacts, industrial wide gap magnetic contacts, UL listed, surface mount, 3' stainless steel armored cable, Sentrol 2500 series. Provide with one normally open and one normally closed set of contacts.

2.04 VISUAL ALARM

- A. Visual Alarm shall be provide and audible and visual alarm indication at the facility site. Alarm equipment shall be 120VAC powered and shall have NEMA 4X enclosure.
- B. Visual Alarm shall be Ingram Part number SBN120AC as manufactured by Ingram Products Inc or approved equal.

Tag	Service
YA-01	Generator Run Status

3.00 EXECUTION

3.01 INSTALLATION

Wire each device requiring power so that when wires are removed from any one device, power is not be disrupted to any other device. Ground the case of each device either by mounting directly on a steel frame or by a third wire.

3.02 FIELD QUALITY CONTROL

- A. The supervisory service of a factory-trained service engineer who is specifically trained on the type of equipment herein specified shall be provided during construction to assist the Contractor in the location of sleeves; methods of installing conduit and special cable; mounting, piping, and wiring one of each type of device, and the methods of protecting all of the equipment prior to placing it into service. Upon completion of the installation, the services of the above service engineer shall be provided for calibration and start up of the equipment and for instructing the operating personnel. The Manufacturer shall provide sufficient service to place the system in satisfactory operation.
- B. Check out and calibrate the system upon completion of the installation.
- C. Prior to the Owner turning on any form of energy to the system, the Contractor shall provide the Engineer with a certified statement of approval of the installation including his supplier's authorization for turning on energy to the system.

END OF SECTION

40 90 02 SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM (SCADA)

1.00 GENERAL

1.01 DEFINITIONS

- A. SCADA System Integrator – The contractor providing Human Machine Interface (HMI), remote telemetry, and radio and Programmable Logic Controller programming.
- B. Instrumentation System Integrator – The contractor providing, installing, and calibrating instruments such as level transmitters, pressure transmitters, flow meters, etc.

1.02 SCOPE

- A. This section specifies furnishing, installing, testing, and start-up operations of a complete control system and sub-system as indicated in the Plans and as specified herein. The system shall be configured to operate as a Distributed Control System having an open system architecture.
- B. The SCADA system integrator and Instrumentation System Integrator Contractor shall provide all hardware, software, configuration, and integration associated with the PLC based Instrumentation and SCADA system at the 2.0 MG Elevated Storage Tank (EST). The EST PLC shall record and transmit tank level (PIT-201), intrusion detection, obstruction light general fault signals to the existing Operator Work Station (OWS) at the Bonnie View Pump Station and to the secondary existing OWS at the Ames Pump Station. The contractor shall remove the existing SCADA antenna from the EST at the Ames EST and provide a building mounted antenna and coaxial cable on the Ames Pump Station building. The contractor shall provide all hardware and programming as required to operate the Ames Pump Station from the new 2.0 MG EST in place of the existing Ames EST. Provide a complete and operational system in accordance with these Contract Documents:
 - a. Provide all required labor, materials, PLC programming, system configuration and integration to provide a dependable radio telemetry system.
 - b. Provide all required software and programming in the PLCs and Owners' computer system for a complete and operational system in accordance with these Contract Documents.
 - c. Coordinate and fully cooperate with the Owner to provide all required hardware and PLC hardware and PLC programming necessary.
 - d. Provide personnel to check out, test and commission the system.
 - e. Provide factory trained personnel to train the Owner's staff as specified.
 - f. Provide software programming to create new screens as specified.
 - g. Provide the required drivers, if required, to receive and transmit data over the radio system to fully communicate with the PLC systems.
 - h. Provide PLC programming, interconnection, wiring, etc as required by the drawings and the Loop Descriptions.
- C. System Components: The system will consist of the following major components and subsystems (but not limited to):
 - 1. One (1) Motorola ACE3600 RTU PLC. The PLC shall be mounted in a NEMA 12, 14 gauge steel enclosure.
 - 2. One (1) loop powered level display, Endress and Hauser model RIA 251 or approved equal. Mount the display on the front panel of the EST RTU cabinet. The display shall indicate the EST Level.

3. One (1) Motorola Astro XTL 2500 Radio.
 4. One (1) Omni Antenna
 5. Uninterruptible power supply (UPS).
- D. Path Study for Radio Communications
1. Prior to purchasing any equipment associated with the SCADA system, the SCADA System Contractor shall do a path study to determine the exact antenna height required for a clear line of sight and good reliable communication path year around between the various sites including the existing Ames Road Pump Station and the Bonnie View Pump Station.
 2. A radio propagation study shall be included. The study shall include physically transmitting a calibrated radio signal from one site to another site. The transmitting antenna shall exhibit the same overall gain as the proposed system locating the antenna in its proposed location and height.
 3. The results of the study shall be submitted to the Owner/Engineer as an official submittal for approval prior to purchasing any equipment.
 4. Any interferences shall be noted in path study.

1.03 REFERENCE STANDARDS:

- A. American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE):
1. C37.90.1, IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems.
 2. C37.90.2, Trial Use Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers.
- B. Electronic Industries Association (EIA):
1. RS-232-C, Interface Between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange.
 2. RS-422-A, Electrical Characteristics of Balanced Voltage Digital Interface Circuits.
- C. National Electrical Manufacturers Association (NEMA):
1. ICS 1, General Standards for Industrial Control and Systems.
 2. ICS 1.1, Safety Guidelines for the Application, Installation and Maintenance of Solid State Control.
 3. ICS 4, Terminal Blocks for Industrial Use.
 4. ICS 6, Enclosures for Industrial Controls and Systems.
 5. Publication No. 250, Enclosures for Electrical Equipment (1000 V maximum).
- D. National Electrical Code.
- E. ISA Standards
- F. IEC 2 KV Isolation test
- G. IEEE472/ANSI C37-90A Surge withstand capability test.
- H. IEEE 802.3

1.04 SUBMITTAL

- A. Submittals shall conform to the requirements set forth in Section 01 33 00, SUBMITTALS. Preliminary Submittals shall be provided to the General Contractor within thirty days of a notice to proceed.
- B. Loop diagrams shall be prepared according to ISA Standard ISA-S5 and using loop numbers.
- C. Schematic ladder diagrams shall include all terminal blocks, hardware devices, software interlocks, software data links, and control.
- D. Interconnection diagrams of all devices. Interconnection diagrams shall include terminal blocks and wire tags.
- E. PLC panel layout, plans, elevations, sections, details, bill of materials, etc.
- F. A schedule defining all I/O, database reference, and point of origin or destination, and PLC system internal address.
- G. Submit written description of functions, loops, and logic.
- H. Submit all SAMA Logic and Wiring Diagrams and ISA Logic Diagrams for all equipment requiring programming at the PLC's, with all set points and ranges indicated.
- I. Copies of all PLC programming logic in printed form and on burned on CD.
- J. Complete spare parts list with catalog and part numbers and quantities.
- K. Radio Path Study results. The radio path study shall include a summary page indicating the findings and recommendations. The radio study shall include information from both the software path study and from the physical radio path study test. The radio path study shall include screen shots from the radio path software study.
- L. UPS Battery Sizing Calculations
- M. Factory Test Reports.
- N. Equipment Installation Report
- O. O&M manuals

1.05 QUALITY ASSURANCE

- A. Suppliers Qualifications: The complete system shall be configured, programmed, and installed by one system supplier.
- B. Tests: The complete system shall be assembled at a panel fabrication shop and tested at the fabrication shop then tested at the job site. The Owner and Engineer shall reserve the right to witness test the Factory testing. The SCADA System Integrator shall test the spread spectrum radio systems between remote sites and the treatment plants.
- C. Standards: All applicable NEC, ISA, IEEE, NEMA, UL, ANSI, IEC, FCC, FM standards shall apply. All equipment shall be new and UL listed and labeled.

- D. Assembly, Storage, & Handling: The complete system, including all individual electronic component units, shall be assembled and stored in air-conditioned and heated facilities with low humidity. Once assembled and tested, the system shall be stored in air-conditioned and heated rooms.
- E. Acceptable PLC Manufacturer at EST site:
 - 1. Motorola ACE3600
- F. Acceptable HMI Software
 - 1. WonderWare
- G. Acceptable Computer Manufacturer:
 - 1. Dell.
- H. Acceptable SCADA installers:
 - 1. BLTechnologies; Stephen Davis (817) 477-9989
 - 2. Richardson Logic Controls (RLC); Michael Cunningham (972)542-7375
 - 3. WHECO; Kent Meyerheffer (817) 244-6660
 - 4. Bauman Instrument; Jerry Bauman (918) 254-2424
 - 5. Prime Controls, Jim McMillon (972) 221-4849
 - 6. No others approved

1.06 CONTRACTOR'S QUALIFICATIONS

- A. The SCADA System Integrator Contractors' personnel shall have a minimum of ten years of prior experience in furnishing, installation, testing, programming, debugging, start-up, and training for systems at least as large and similar to the one in this Contract. The system installer shall have employees who are qualified technicians for the duration of the contract and are familiar with the D/FW Metroplex. The Contractor shall submit for evaluation within one week of Notice to Proceed, his SCADA and instrumentation systems installer's company resumes complete with company history, project lists, locations, Owner, costs, type of system installed, and references with phone numbers. Installers not meeting these qualifications shall not be accepted. As a part of this contract, the SCADA and instrumentation system installers shall assume complete system responsibility, including coordination and interfacing with all subsystems and equipment suppliers and manufacturers. The Contractor shall actively be involved in the control system integration industry for the last five years and the experience shall be in similar water and wastewater applications. The Contractor shall not act as a broker for the project; he shall provide and be responsible for all hardware, interfacing software, training, testing, and extended warranties.
- B. The SCADA system installed shall be capable of future modifications by other SCADA Integrator entities within a 300 mile radius without having to learn a different PLC or HMI programming platform. Other SCADA Integrator entities shall be capable of modifying PLC programs, HMI screens, or radio paths without the approval, training, or consent of the installer for the work done under this contract.

1.07 SYSTEM DESCRIPTION

- A. Furnish and install a programmable controller-based supervisory control and data acquisition system configured as a distributed processing network as defined by the Contract Documents. Control functions shall include digital logic control, PID control, and setpoint control. Include all hardware, firmware, software, and application programming and configuration, as necessary, to make the system completely functional and operational in

accordance with the Contract Documents. All necessary components and equipment which are not specifically described in the Contract Documents, but which are necessary to configure an operational distributed control system as described herein, shall be identified, furnished, and installed by the CONTRACTOR. The system provided shall be the vendor's standard; a prototype system will not be accepted.

- B. Each programmable controller (PLC) along with all associated equipment shall be housed in its own separate cabinet.
- C. The contractor will be responsible to provide all new PLCs, radios, towers (where applicable), operator work stations (as specified), HMI software, server software, reporting software as described herein.

1.08 SPARE PARTS, TOOLS, AND SUPPLIES

- A. As a minimum, provide the following compatible spare parts, tools, and supplies as a part of this CONTRACT:
 - 1. One (1) each I/O modules for analog and discrete input/output signals. Each module to have 16 I/O points (where applicable).
 - 2. In addition to above, provide the manufacturer's recommended spare parts for each piece of equipment furnished.
 - 3. One (1) spare PLC CPU of each type furnished. One (1) spare PLC power supply and I/O card of each type furnished (where applicable).
 - 4. One (1) spare DC power supply of the each size furnished.

1.09 WARRANTY

- A. The Equipment supplier and the CONTRACTOR shall warrant to the OWNER that the equipment delivered with reference to this specification complies with this specification. The equipment supplier and the CONTRACTOR shall warrant the equipment as to defects in material and workmanship for a period of two years from the date of final acceptance of the project. Vendor shall include a copy of his special equipment warranty with the shop drawings. The warranty specified by this specification shall be exclusive, and in lieu of all other warranties whether written, implied, orally presented, or statutory.

2.00 PRODUCTS

A. Lightning/Surge Protection

- 1. Lightning/Surge protection shall be provided to protect the Supervisory Control & Data Acquisition system from induced surges propagating along the communications, signal and power supply lines. The protection systems shall not interfere with normal operation, but shall be lower than the surge withstand level for the device they are protecting and be maintenance free and self-restoring.
- 2. All wiring, hardware, and connections means shall comply with the National Electrical Code and/or applicable local codes.
- 3. Lightning/Surge protection devices shall be mounted as close to the equipment they are protection as possible. Mounting guidelines will be followed as indicated in installation instructions provided by the manufacturer. Wires shall be attached by means of a cable-clamping terminal block activated by a screw. Connections shall be gas-tight, and the terminal block shall be fabricated on non-ferrous, non-corrosive materials. All wiring points and plug connections shall be "touch safe" with no live voltages that can make contact with a misplaced finger.

4. Panel mounted Lightning/Surge protection devices shall consist of two parts; a base terminal block and a plug protection module. Base shall directly connect to DIN rail. Replacing a plug shall not require the removal of any wires nor shall it interrupt the signal. Base and plug shall have the ability to be coded to accept only the correct voltage plug. Field mounted Lightning/Surge protection devices shall be contained in NEMA 4X housings.

2.02 PROGRAMMABLE LOGIC CONTROLLERS

- A. The control system shall be configured using microprocessor-based programmable controllers for local process control functions. Each controller shall be equipped with two independent central processing units, power supplies and individual uninterruptible power supply (UPS) to perform logic control functions based on the program stored in memory and the status of inputs and outputs. Memory will be required such that there is a minimum of 20 percent spare, and will be non-volatile. Automatic shutdown feature shall be selectable such that the desired field condition will be the default condition in the event of power loss or system failure. Power supplies shall be provided for the process controller as required with built-in protection against short-circuits, overcurrent, and overvoltage. Two communications ports shall be provided for each programmable controller.

The programmable controller shall be capable of complete control, including PID control, digital logic control, batch, and setpoint control.

The entire PLC system shall immediately shut down and annunciate the occurrence of any of the following abnormal circumstances:

1. Memory parity error.
 2. Loss of signal communication between CPU and I/O's.
 3. Loss of logic power to any portion of the system.
 4. Halt or interruption of memory scan.
 5. Detection of any incomplete relay ladder rungs in memory.
- B. The PLC system shall accomplish the control requirements of the loop descriptions, and Contract Documents.
 - C. The design application and installation of the PLC system shall conform to NEMA ICS 1.1.
 - D. PLC programming shall be documented annotated in detail, and factory tested.
 - E. Human-machine interface (HMI) shall utilize system viewing displays and keyboard(s). Interface functionality shall include:
 1. Indication of process variables
 2. Configuration of control loop parameters
 3. Adjustment of controller output
 4. Display of real time and historical process trends
 5. Push button station controls
 6. System and process status indicators
 7. Graphic representation of operations with interactive status and measurement symbols
 8. Annunciation
 - F. The PLC system shall report the following events:
 1. All entries initiated by operator including the following:
 - a. Console key changes
 - b. Beginning and final values of setpoint and output changes

- c. Mode changes (i.e., auto to manual)
 - d. Which console changes were made from
 - e. Time change was made
- 2. Events:
 - a. Description of event
 - b. Time of event
 - c. Resolution of 100 milliseconds maximum
- G. The PLC system shall operate in ambient conditions of 32 to 122°F temperature and 0 to 95 percent relative humidity without the need for purging or air conditioning.
- H. Utilize a power turn-on time delay circuit when powering up or down DC power supplies to ensure power supply output voltage has reached the proper value prior to application of power to solid state logic and output circuits.
- I. Input/Output Connection Requirements:
 - 1. Outputs shall be fused:
 - a. External fusing shall be provided if output module does not possess internal fusing.
 - b. Fuses provided external to output model shall:
 - 1) Be in accordance with module manufacturer's specifications.
 - 2) Be installed at terminal block.
 - 2. Install bleeding resistors across input from field devices which leak current sufficiently to flicker input status light.
 - 3. Make connections to I/O subsystem by terminating all field wiring on terminal blocks within the I/O enclosure.
 - 4. Prewire I/O modules to terminal blocks.
 - 5. Provide terminal blocks with continuous marking strip.
 - 6. Size terminals to accommodate all active data base points and spares.
 - 7. Provide terminals for individual termination of each signal shield. Stripping back twisted shielded pair and twisting together all the shields is not acceptable.
 - 8. Field wiring shall not be disturbed when removing or replacing an I/O module.
- J. All PLC control system components shall be capable of meeting or exceeding electromagnetic interference tests per ANSI/IEEE C37.90.2.
- K. Incorporate the following minimum safety measures:
 - 1. Master Safety Relay:
 - a. Cuts off power to I/O devices upon de-energization
 - b. Multiple Master Safety Relays shall be available as required to provide ability to control separate designated blocks of the control program.
 - 2. External Watchdog Function to Monitor:
 - a. Internal processor clock failure
 - b. Processor memory failure
 - c. Loss of communication between processor and I/O modules
 - d. Processor ceases to execute logic program
 - 3. Safety Function Wiring:
 - a. Emergency shutdown switches shall not be wired into the controller.

4. An emergency power disconnect shall be placed in the power circuit feeding the power supply as a means of removing power from the entire PLC system.
 - a. Capacitor shall be placed across the disconnect to protect against current outrush through trails.
5. Safe Wiring:
 - a. Equipment failure mode shall be selected so that the loss of power or control signal to the equipment will result in the equipment either shutting down or operating safely.
 - b. Activation of alarms and stopping of equipment shall result from the de-energization of control circuits, rather than the energization of control circuits.
 - c. Low voltage control signal wires:
 - 1) Place in conduit segregated for that purpose only
 - 2) Twisted shielded wire pair
 - 3) Not located in the same conduit or bundle with power wiring
6. Initial Safety Conditions:
 - a. Utilize program module to dictate output states in a known and safe manner prior to running of control program.
 - b. Utilize program each time PLC is re-initiated and the control program activated.
7. PLC Fault Relay:
 - a. Placed in series with any other emergency stop conditions
 - b. Opening of PLC Fault Contact:
 - 1) Upon unsafe or undesirable system operation, including:
 - a) Loss of memory
 - b) Processor fault
 - c) Power supply fault
 - d) Isolation failure
 - e) Communications failure
 - f) Scan time overrun
 - g) Module failure
 - 2) Results from de-energization of PLC fault relay
 - 3) Causes Master Safety Relay to de-energize
8. Monitoring of Internal Faults and Display:
 - a. Internal PLC system status and faults shall be monitored and displayed. Monitored items shall include:
 - 1) Memory ok/loss of memory
 - 2) Processor ok/processor fault
 - 3) Battery ok/battery low
 - 4) Power supply ok/power supply fault
 - 5) Isolation failure
 - 6) High CPU temperature
 - 7) Scan time overrun
 - 8) Module failure
9. Control of Programs:
 - a. Protect access to PLC program loading with locked, key operated selector switches.
10. Effects of Failure:
 - a. PLC system shall incorporate safe responses to the following failure effects:
 - 1) Power losses, interruptions, excursions, dips, and transients.
 - 2) Loss or corruption of memory
 - 3) Information transfer corruption or loss
 - 4) "Fail on" or "Fail off" of inputs or outputs
 - 5) Unreadable signals
 - 6) Addressing errors
 - 7) Processor faults

11. Design PLC system with high noise immunity to prevent occurrence of false logic signals resulting from switching transients, relay and circuit breaker noise or conducted and radiated radio frequency interference.
12. Incorporate noise suppression and inductive load suppression design into input, output, and logic modules
13. Operator Intervention:
 - a. Logic system failure shall not preclude proper operator intervention
 - b. Safety shutdown of equipment or a system shall require manual operator intervention before the equipment or system operation may be reestablished.

2.03 COMPONENTS

A. PLC System Central Processor Unit (CPU):

1. Completely solid state CPU designed to provide:
 - a. Digital relay logic
 - b. Analog loop control
 - c. Other required control functions:
 - 1) Counting
 - 2) Floating point math computations
 - 3) Timing
2. To provide communications with other control systems and man-machine interfaces as specified.
3. To use electrical ladder diagram style programming for discrete logic applications.
4. Memory:
 - a. Battery-backed RAM
5. Memory battery backup shall be capable of 60 days memory retention with fresh batter.
 - a. Provide visual indication of battery status and alarm low battery voltage.
 - b. Memory battery backup shall be capable of 14 days memory retention after the "Battery Low" indicating LED is on.
6. Plug-in card design to allow quick field replacement of fault devices.
 - a. Provide unit designed for field replacement and expansion of memory without requiring rewiring or use of special tools.
7. 20 percent minimum spare useable memory capacity after all required programming is in place and operating.
8. Capable of executing all control functions required by the Contract Drawings including digital and analog loops.
9. Built-in three-mode (proportional-integral-derivative) control capabilities.
 - a. As directly selectable algorithms requiring no user knowledge of programming languages.
10. On line reconfigurable.
11. Lighted status indicators for "RUN" and "FAILURE."
12. Capable of manual or automatic control mode transfer from the HMI system or from within the control strategy. Transfer shall be bumpless and balanceless.

B. Input/Output (I/O) Modules

1. Provide plug-in modular-type I/O racks with cables to connect to all other required PLC system components.
2. Provide I/O system with:
 - a. I/O solid state boards with status lights indicating I/O status and board failure.

- b. Electric isolation between logic and field device.
 - c. Individually fused outputs with blown fuses indication.
 - d. Interchangeable boards for similar I/O type to allow substitution of operating boards for failed units by the operator.
 - e. Capability of withstanding low energy common mode transient to 1500 V without failure.
 - f. Incorporate noise suppression design.
 - g. Capable of meeting or exceeding surge-withstand capability tests, per ANSI/IEEE C37.90.1.
 - h. Capable of meeting or exceeding electrical noise tests, NEMA ICS1-109.60-109.66.
 - i. Capable of being removed and inserted into the I/O rack under power, without affecting any other I/O modules in the rack.
-
- 3. Discrete I/O Modules:
 - a. Interface to ON/OFF devices
 - b. I/O status indicator module front
 - c. Voltage rating to match circuit voltage
 - d. Output module current rating:
 - 1) Match maximum circuit current draw
 - 2) Minimum 1.5 A/point for 120 V AC applications
 - e. Isolated modules for applications where one module interfaces with devices utilizing different sources of power.
 - f. Individually fused with blown fuse indication.
 - 4. Analog I/O Modules:
 - a. Input modules to accept signals indicated on Drawings or Specifications
 - b. 12 bit resolution
 - c. I/O chassis supplied power for powering connected field devices
 - d. Isolated (differential) inputs and outputs
 - e. User configurable for desired fault response state
 - f. Provide output signals as indicated on Drawings and Specifications
 - g. Individual D/A converter for each output module
 - h. Individual A/D converter for each input module
 - 5. Spare I/O Modules: Each LPU-PLC shall have a minimum of 20 percent spare analog and 20 percent spare discrete I/O points installed and wired to terminal blocks, isolates, surge devices, and relays inside the LPU.
- C. Power Supply Units:
- 1. Provide regulated power units:
 - a. Designed to operate with PLC system and shall provide power to:
 - 1) All components of PLC system
 - 2) Two-wire or four-wire field instruments
 - 3) Other devices as indicated on Drawings or Specifications
 - b. Capable of supplying PLC system when all of the specified spare capacity is utilized
 - c. Each power supply shall be sized such that it will carry no more than 75 percent of capacity under normal loads.
 - 2. Electrical service to PLC system is 105 to 125 V, 60 HZ, ± 1 percent, 1 PH power.
 - 3. Separate AC circuit breakers shall be provided for each power supply.

4. If the PLC system is field expandable beyond the specified spare capacity, and if such expansion requires power supply modification, note such requirements in the submittals and allow room in the PLC system enclosure.
5. Provide integral battery backup to maintain 60 seconds upon loss of all AC power. This is required to ensure transient power surges and dips do not affect the operation of the PLC system.
6. Capable of meeting or exceeding electrical noise tests, NEMA ICS1-109.60-109.66.
7. Capable of meeting or exceeding surge-withstand capability tests per ANSI/IEEE C37.90.1.
8. Power Distribution:
 - a. Immune to transients and surges resultant from noisy environment.
 - b. Shall provide constant voltage level DC distribution to all devices.
9. Provide UPS at each PLC and in PLC enclosures.

2.04 HMI CENTRAL CONTROL AND DATA ACQUISITION SYSTEM

- A. All HMI software shall be registered to the City and the developer shall not lock the software. The City and anybody they see fit shall have access to the software for future modifications and troubleshooting. The City shall possess all software keys and all applications.
- B. The central computer system shall be configured and programmed to maintain a real-time database of all input/output points within the system. The central system shall monitor and control the local instrumentation; it will log selectable points within the system, and be capable of data management such that all data is available while monitoring concurrently.

The system provided shall include the following features:

1. Data Collection of Analog and Digital I/O
 2. Historical and Archival Data Logging
 3. Alarming
 4. Trending - Historical and Real-Time
 5. Networking
 6. Real-Time Multi-tasking
 7. Telephone Modem Support
 8. Event Processing - Control Strategy Initiation
 9. Easily Configured Displays and Display Modification with Graphic icons.
 10. Real-Time Display with Status Change Color Change Feature
 11. Pre-emptive multitasking
 12. 32 or 64 bit computing
 13. Dynamic objects for configuring I/O devices
- C. Data Collection: The real-time database shall be modified to manage an additional 1,000 points minimum in any combination of analog/digital I/O.
 - D. Data Logging: Real-time database points shall be selectable for logging.
 - E. Report Generation:

Alarm/event logs are to print all alarms immediately as they occur. The message is to include the time of the alarm, point name, and a description of the alarm. Time of the operator acknowledgment and return to normal are also to be printed. Events, including operator log on, system control point change, and operator control functions, are also to be reported. The system is to be equipped with a facility for time-generated reports such as alarm summary, shift log of events, etc.

1. The following custom reports shall be generated:
 - a. Standard Format:
 - 1) User configurable
 - 2) Contain selected information from any log, event, or alarm list
 - 3) Capable of producing custom log report for periodic and on-demand printing of a list of process or calculated variables
 - b. Variable Format:
 - 1) User configurable
 - 2) Ability to include any system data including:
 - a) Calculated time based on averages
 - b) Totalizations
 - c) Minimum values
 - d) Minimum times
 - e) Maximum values
 - f) Maximum times
 - c. Reports shall not require software programming to setup.
 - d. All reports shall be output to standard print devices, to ASCII files and to Microsoft Excel.
- F. Trending: Trend graphics are to be provided as either a stand-alone tool for analysis, or as a real-time recorder. Compression techniques shall be provided for automatic rescaling, optimal resolution, and time slot averaging to give the operator an efficient interface for analysis. Datapoints for trending are to be selectable directly from the database by scrolling through the tag database and selecting the desired points to trend. The trend facility is to provide the ability to generate reports to provide the operator with a hard copy of his analysis. Coordinate with the Owner to provide reports as required by regulatory agencies.
- G. Networking: Facilities shall be provided to network the system with microcomputers such that the real-time database generated within the system can be easily transferred to other computers for manipulation and analysis. A network window shall be provided for the use of a telephone modem.
- H. Displays: Displays are to be accessible through the use of the mouse and/or touch screen. Status is displayed on the screen through the use of color and alphanumerics. The mouse and/or touch screen can change the status of a discrete device or the output value of an analog device. Displays shall be easily built or reconfigured through the use of an established library of symbols. The system shall be easily modified to change the values displayed, the format and arrangement of the display. Status colors changed within each display shall include tanks, line, rotating equipment, etc. Provide the owner and engineer with proposed screens prior to implementation.

The graphic displays shall have the following additional capabilities:

1. Utilize ISA symbols for devices
2. Have selectable colors
3. Utilize loop numbers, equipment numbers, and valve number
4. Devices shall dynamically change colors on status change
5. Graphics shall be pixel oriented
6. Level indication shall be dynamic
7. Have bar-graph capability
8. Have complete touch screen interface.
9. Graphic icon library."

2.05 ANTENNA

- A. Antennas provided shall be compatible with radio systems. Approved antenna manufacturer is Commscope, SAMCO Antenna or approved equal.
- B. Antenna mounting equipment shall be stainless steel. Antenna shall be mounted at least 10' away from the RTU, radio, or any other equipment.
- C. Antenna mounting shall include a grounding kit.
- D. Yagi: The antenna shall be fabricated 6061/T6 aluminum rod and seamless drawn pipe. All aluminum materials shall be gold anodized. Mounting casting shall permit horizontal or vertical polarization. Internal balun, coax feed and connectors shall be sealed in a foam potting system which prevents moisture penetration. Antenna shall have a wind rating of 150 mph.
 - 1. Frequency (MHz): 450-512 MHz
 - 2. Polarization: Vertical
 - 3. Gain (dBd/dBi): 10/12.1
 - 4. Impedance (Ω): 50 Ω
 - 5. Lightning Protection: DC Ground
 - 6. VSWR: <1.5:1
- E. Omnidirectional: Antenna shall be specifically designed for 450- 482 MHz (Broadband). The antenna shall be fabricated from fiberglass. The antenna shall be provided with a 6 dB gain, vertically polarized, 50 ohm impedance. Antenna shall be manufactured by Kathrein –SCALA Corporation, Max Rad Inc., Antenna Specialist, Celwave RFS or approved equal.
- F. Contractor shall verify exact antenna requirements after results of radio path study are obtained and provide type of antennas required for a clear communications signal between the different sites.

2.06 RADIO

- A. The transceiver radio shall be a Motorola Astro XTL 2500. The frequency range of the radio shall be 450-482 MHz. The operating voltage of the spread spectrum radio shall be 12VDC. The following functions shall be indicated:
 - 1. Power – on
 - 2. Transmitter – active
 - 3. Receiver – active
- B. The following alarms shall be indicated:
 - 1. Transmitter RF Power – low
 - 2. Transmitter Local Oscillator – low/high
 - 3. Backup Battery – low
 - 4. Receiver Signal Strength – low
- C. Radio transceiver shall be housed in the Field Interface PLC cabinet.

2.07 SURGE SUPPRESSOR

- A. Surge suppressor for AC power circuits shall be UL listed or recognized. Suppressor shall be designed to withstand a maximum 10 kA test current of a 8/20 μ S waveform according to ANSI/IEEE C62.41 Category C Area. Suppressor shall consist of a multistage hybrid circuit with staging inductors or resistors to properly coordinate the components. Surge protection modules shall have a visual indication of circuit integrity. Devices shall include a SPDT contact rated for at least 120 VAC, 1 Amp, for remote failure indication. AC power surge suppressor shall be Phoenix Contact Mains-Plugtrab Series or approved equal.
- B. Surge suppressors for analog, discrete and data signals shall be UL listed or recognized. Suppressors shall be designed to withstand a maximum 10 kA test current of a 8/20 μ S waveform according to ANSI/IEEE C62.41 Category C Area. Suppressors shall consist of a multistage hybrid circuit with staging inductors or resistors to properly coordinate the components. Analog, discrete and data signal surge suppressors shall be Phoenix Contact Plugtrab Series or approved equal.

2.08 COAXIAL CABLE

- A. Coaxial cable shall meet the following requirements:

Characteristic impedance:	50 ohms
Outer Conductor:	Copper, annularly corrugated
Inner Conductor:	Copper
Dielectric:	Closed cell low loss foam
Seal:	Connector o-rings to seal out moisture

- B. Coaxial cable shall be Andrew Corporation Heliax LDF Series (Andrew Corporation, Dallas, TX, (800) 676-5342) or approved equal. Other acceptable manufacturer is Radio Frequency Systems (Radio Frequency Systems, Meriden, CT, (800) 321-4700).
- C. Diameter of coaxial cable shall be sized so that feedline loss from the antenna-side of the coaxial surge suppressor to the antenna does not exceed 1dB for directional antennas and 2 dB for omni-directional antennas. Feedline losses shall be calculated at the operating radio frequency and shall include losses in cable and connectors. The minimum size coaxial cable provided from the panel to the antenna shall be as indicated in the contract documents unless larger size is required to meet the feedline loss indicated above.
- D. All coaxial connectors shall be Type-N connectors. Connectors shall be manufactured by the same cable manufacturer which furnishes the coaxial cable. Connectors shall be Andrews Corporation Heliax cable connectors, or approved equal. All connectors shall be constructed of brass or be silver plated as recommended by manufacturer. Connectors shall have o-ring seal.
- E. All connections shall be weatherproofed using 3M-brand cold shrink weatherproofing kit or approved equal cold shrink weather proofing kit.
- F. Provide a pre-made cable assembly of Andrews Heliax Superflexible coaxial cable to connect from the radio antenna port to the radio-side of the coaxial surge suppressor. Provide straight or angled N-type connectors as necessary to route cable assembly within panel without exceeding manufacturer's recommended bend radius. The pre-made cable shall be assembled by the coaxial cable manufacturer and shall be shipped with a certification of assembly and testing.

- G. Provide manufacturer's recommended coaxial ground kit with adequate ground wire length to secure to ground bus bar on drilled shaft.
- H. Cable hangers shall be Andrews Hanger Model 42396A-S for 7/8" cable or 43211A for 1/2" cable with Andrews Round Member Adapter Model 31670.

2.09 COAXIAL GROUNDING KIT

- A. Grounding straps shall be solid copper for high current handling. Construction shall be of the non-braided type. Grounding cable shall have field attachable grounding lug with a two-part tape system for weatherproofing. Grounding kit shall be Andrew Corporation or approved equal.

2.10 RF SURGE SUPPRESSION

- A. Composition
 - 1. Body Material: Brass
 - 2. Body Surface Treatment: 2.5μ, Silver Plate Type II, Grade A
 - 3. Contact Pins Material: Brass
 - 4. Contact Pins Surface Treatment: 3.2μ, Silver Plate, QQ-S-365, Grade A
 - 5. Contact Insulators: PFFE
 - 6. Sockets: Brass
 - 7. Gaskets: Neoprene, CR705/G70
- B. Performance Specifications
 - 1. Impedence: 50 Ω
 - 2. Return Loss: ≤-26 dB (≤ 1.1 VSWR)
 - 3. Insertion Loss: ≤.1 dB Typical, 0.15 dB Maximum
 - 4. Max. Impulse Discharge: 40 kA - N or 90 kA – DIN
 - 5. Operating Temperature: -40° to 100° C
- C. Surge suppression shall be located at the RTU enclosure where the Coax enters the RTU enclosure and installed per manufacturer recommendations.
- D. Device shall be UL497B listed and approved. Approved manufacturer is PolyPhaser SX Series. No other manufacturers are acceptable.
- E. All coaxial cables shall be protected at the point of entering the panel using bulkhead mount coaxial surge suppressors.
- F. Coaxial surge suppressors shall be directly bonded to the panel ground lug using a minimum 6 GA solid copper wire.
- G. Coaxial protectors shall be manufactured using 304 stainless steel hardware and shall include an o-ring to ensure water tightness of the enclosure
- H. Terminal Block Surge Protectors:
 - 1. All digital/analog inputs shall be protected within the panel using surge suppressors.
 - 2. Surge suppressors shall be EDCO DRS Series (EDCO, Ocala, Florida, 800-648-4076), or approved equal.

3. Surge suppressors shall be din rail mountable, single-pair surge suppression devices and shall use three-stage hybrid protection including silicone avalanche diodes, gas tubes, and polyswitch resettable fuses.
4. Surge suppressors shall be directly bonded to the panel ground lug using a minimum 10 GA solid copper wire.
5. Surge suppressors shall meet the following requirements:

Peak Signal Voltage	30 Volts
Clamp Voltage	36 Volts
Response Time	< 1 Nanosecond
Peak Surge Current	10kA for 8 x 20 @ μ s
Life Expectancy	> 100 Occurances @ 8 x 20 μ s (2000A)
Maximum Series Resistance	5 Ohms
Maximum Operating Current	150 mA
Operating Temperature Range	-40°C to 85°C

2.11 POWER SUPPLY

- A. The power supply shall be fully enclosed and provide screw terminations by means of a cable clamping terminal block activated by a screw. Connections shall be gas-tight, and the terminal block shall be fabricated of non-ferrous, non-corrosive materials. All wiring points shall be touch safe with no live voltages that can make contact with a misplaced finger. Power supply shall have integral metal mounting feet to attach to 35-mm DIN-rail.
- B. The power supply shall conform to UL 508C standards allow use at the full rated current. The power supply shall have a visual indicator for applied power. Operating temperature range shall be -25°C to 70°C. Power supply shall have means of limiting DC current in case of short circuit and shall automatically reset when fault is corrected. Power supply shall be able to be run in parallel mode without external circuitry to provide redundancy. Residual ripple shall not exceed 150 mV peak to peak.
- C. Power supply shall be Phoenix Contact, Power-One or approved equal.

2.12 RTU CABINET

- A. ENCLOSURES FOR Elevated Storage Tank PLC
 1. Housings: The in EST PLC with its UPS unit shall be housed in a wall-mounted NEMA 12 enclosure.
 2. The enclosure shall be equipped with a 120 volt grounded duplex receptacle and a switched service light free of RFI. All switches, fuses, terminal blocks, etc., shall have permanent nameplates or labels for identification.
 3. All equipment shall be mounted in such a manner that all maintenance may be accomplished with easy access through the door(s).
- B. Furnish and install the RTU cabinet at the location indicated. Cabinet shall have a hinged front door with key interlocking handle for interior locations and shall be pad lockable for exterior locations. The enclosure shall be made of 14 gauge steel with an 11 gauge mounting panel inside. The PLC with its UPS and radios shall be housed in the RTU cabinet.
- C. Interposing relays contained in this cabinet shall be 3PDT, shall have 120 VAC coils, shall each have a pilot light indicating energized coil, and shall each be mounted in a plug in socket

with relay retainer clip and screw terminals. Relays shall be Square D KU13M1P14 or approved equal.

D. Instrument panel wiring shall be as follows:

1. Single conductor wire shall be stranded, tinned 18 AWG and MTW insulation, as manufactured by American Insulated Wire or approved equal. Color-coding shall be purple for ungrounded conductors and white for grounded conductors.
 2. Pair shielded cable for 4-20 mA DC loops shall be as specified in 26 05 19, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS & CABLES.
 3. Each conductor terminated under a screw head shall have a crimp on spade terminal applied to its end prior to its termination.
 4. Each conductor has its own number and no number is used more than once.
 5. The number of each wire is placed at both ends of the wire next to its end according to wire tagging instructions as specified in 26 05 19, LOW VOLTAGE ELECTRICAL POWER CONDUCTORS & CABLES.
 6. The wire numbers, as actually installed, match the numbers on the shop drawings, O&M manuals, wiring diagrams and interconnection diagrams for this instrument panel.
 7. Wiring shall be run enclosed in plastic wireway wherever possible. Wireways shall be installed as required to enclose panel wiring. Where the use of plastic wireway is not practical, conductors shall be bundled and run open. Conductors run open shall be bundled and bound at regular intervals not to exceed 6" with nylon ties, or approved equal. Wires within a bundle are to be run parallel to one another and not twisted. Bundles shall have a uniform appearance, circular cross section, and shall be securely fastened to the panel framework. Conductors carrying different voltages that are from the same source may occupy the same wireway provided all are insulated for the maximum voltage of any conductor in the wireway. Wiring carrying voltages that originate at different source shall not run in the same wireway.
 8. Terminal blocks shall be installed for wire terminations and shall be capable of mounting on a 35mm DIN-rail. Terminal blocks shall have a method of labeling for easy identification. Typewritten labels shall denote terminal block numbers and shall match numbers shown on shop drawings, O&M manuals and wiring diagrams. 25 percent additional terminals, not including spare terminals associated with future I/O (future pump motors and flow meter), shall be provided for OWNER's use. Terminal blocks shall be available with screw clamp technology and be made of a non-corrosive material. The metal body shall contain a serrated pressure plate that will provide a gas-tight connection with the conductor. All terminal block wiring points shall be "touch safe" with no live voltages that can make contact with a misplaced finger. Terminal blocks shall be Phoenix Contact UT Series, Allen Bradley 1492-H1 Series or approved equal and rated 600V.
 9. A separate 120VAC Terminal Block and circuit breaker shall be provided for RTU cabinet.
- E. A print pocket shall be provided in the panel and shall contain an 11" x 17" control schematic and an 11" x 17" wiring diagram or diagrams. The wiring diagram shall contain all wire numbers, device names and terminal numbers. Drawings shall be laminated in clear plastic for preservation of the drawings.
- F. Enclosure shall be provided with an enclosed switched fluorescent light and 120 volt grounded duplex receptacle.
- G. All equipment shall be mounted in such a manner that all maintenance may be accomplished with easy access through the RTU cabinet doors.
- H. Acceptable RTU cabinet manufacturers:
1. Hoffman
 2. Hammond

- 3. Rittal
- 4. Cooper B-Line
- I. Provide a panel heater with thermostat within the RTU enclosure on all exterior mounted RTU panels to prevent condensation and maintain enclosure temperature during cooler months.

2.13 UNINTERRUPTIBLE POWER SUPPLY

- A. The system supplier shall provide an Uninterruptible power supply (UPS) for each programmable controllers and its associated RTU cabinet. The systems supplier shall size the UPS for the connected load plus 100% spare capacity for four (4) hours. UPS shall also be provided at each PLC. Utilize Gel-cell type batteries housed in their own enclosure inside the RTU cabinet. The UPS shall be equal to Liebert, Topaz, APC, MGE or approved equal, and shall have capacity to supply power for a period not less than four hours continuously for the processing units (PLC), wireless I/O modules, 12VDC, 24VDC power supplies, and loop powered instruments connected to the PLC and I/O modules

2.14 CATEGORY 5 ETHERNET CABLE

- A. The Category 5 Ethernet Cable shall be four, twisted pair 24 AWG solid bare copper wires. The Category 5 Ethernet Cable shall be Belden No. 1585A (Belden Division, Richmond, IN, (800) 235-3361) or approved equal. Cable connectors shall be RJ45.

3.00 EXECUTION

3.01 INSTALLATION

- A. All work shall be in accordance with manufacturer's recommended practices. Care shall be exercised to avoid damage to equipment during installation. Damaged equipment shall be replaced by Contractor at no expense to the Owner.
- B. System equipment shall be installed where indicated in the CONTRACT documents. Power and signal connections between components shall provide the specified functions. Install according to equipment manufacturer's instructions.

3.02 PROGRAMMING

- A. The loop descriptions and diagrams shown in the Contract Documents are functional only and do not attempt to specify detail program coding that may be required. The CONTRACTOR shall utilize this functional information to develop complete application programming for the PLC equipment provided under this CONTRACT. Programs shall be designed to provide fail-safe operation of equipment in case of PC logic or power supply failure. Fail-safe shall be defined as "stopped" for all drives and "closed" for valves, unless otherwise specified. Interrupting logic between the PLC and central computer system shall be required as per system sequence of operation. The graphics shall be sufficiently detailed to include all equipment, pipes, valves, solenoids, meters, switches, etc. Graphics shall include equipment tag numbers and display the current flow rates, levels, quantities, status, elapsed time of equipment, etc. All such work shall be done at no extra cost to the OWNER. Before programming the graphics, the CONTRACTOR shall furnish a set of drawings for ENGINEER'S AND OWNER'S review.

3.03 DOCUMENTATION

- A. Following delivery to the site, the equipment manufacturer, in the presence of the ENGINEER, shall demonstrate operation of the complete system.

- B. The CONTRACTOR shall provide documentation for all application software. Documentation system shall be diagrams in ladder-rung format, and shall show all input devices to the left of the left "power rail" and all outputs to the right of the right "power rail." The diagrams shall show all device codes and functional description used in the project manual, and shall also show PLC address codes, element codes, and I/O assembly codes, module numbers, and terminal numbers. All software documentation shall be included in the O&M Manual in printed form and in electronic form suitable for use by the OWNER.
- C. All software shall use comments in the documentation to identify all variables, ranges and functions.

3.04 TESTS

- A. All elements of the SCADA system, both hardware and software, shall be tested to demonstrate that the total system satisfies all of the requirements of the Specifications. Testing of the equipment may be difficult but shall be followed by the instructions listed below.
- B. The Contractor shall furnish and install the field instruments, PLC, remote input/output (RI/O), and interface equipment in a schedule to meet the construction sequencing.
- C. As a minimum, the testing shall include the following:
 - 1. Operational Readiness Tests (ORT)
 - 2. Functional Demonstration Tests (FDT)
 - 3. 35-Day Acceptance Test
- D. Each test shall be in the cause and effect format. The person conducting the test shall initiate an input (cause) and, upon the system's or subsystem's producing the correct result (effect), the specific test requirement will have been satisfied.
- E. All tests shall be conducted in accordance with Engineer-approved procedures and documented. Each specific test to be performed shall be described and a space provided after it for signoff by the appropriate party after its satisfactory completion.
- F. Copies of signoff test procedures, forms, and checklists will constitute the required test documentation.
- G. Provide all special testing materials and equipment. Wherever possible, perform tests using actual process variables, equipment, and data. Where it is not practical to test with real process variables, equipment, and data, provide suitable means of simulation. Define these simulations techniques in the test procedure.
- H. Coordinate all testing with other Contractors, the OWNER, and the Engineer.
- I. The OWNER and/or ENGINEER will actively participate in many of the tests. The OWNER and/or ENGINEER reserves the right to test or retest any and all specified functions whether or not explicitly stated in the approved test procedures. The OWNER and/or ENGINEER reserves the right to observe and/or inspect the work during any phase.
- J. The Engineer's decision shall be final regarding the acceptability and completeness of all testing.

3.05 OPERATIONAL READINESS TEST (ORT)

- A. General: Prior to start-up, the installed system shall be certified (inspected, tested, and documented) that it is ready for operation. The OWNER and ENGINEER shall be notified

when ORT starts. Copies of ORT forms that have been signed off by the CONTRACTOR shall be copied and sent to the OWNER and ENGINEER on a daily basis for record purposes only. No signature by the ENGINEER or OWNER is required for ORT forms.

- B. Loop/Component Inspections and Tests: The system shall be checked for proper installation, calibrated, and adjusted on a loop-by-loop and component-by-component basis to ensure that it is in conformance with related submittals and these specifications. Actual real-time signals generated from the field devices shall be used. This test is intended to actually operate the entire process and to find and correct all real-time operational deficiencies.

1. The Loop/Component Inspections and Tests shall be implemented using Engineer-approved forms and checklists.
 - a. Each loop shall have a Loop Status Report to organize and track its inspection, adjustment, and calibration. These reports shall include the following:
 - 1) Project name
 - 2) Loop number
 - 3) Tag number for each component
 - 4) Checkoffs/signoffs for each component
 - a) Tag/identification
 - b) Installation
 - c) Termination - wiring
 - d) Termination - tubing
 - e) Calibration/adjustment
 - 5) Checkoffs/signoffs for the loop
 - a) Panel interface terminations
 - b) I/O interface terminations
 - c) I/O signal operation
 - d) Inputs/outputs operational: received/sent, processed, adjusted
 - e) Total loop operational
 - f) Space for comments
 - g) Space for signoff by Contractor
 - b. Each active analog subsystem element and each I/O module shall have a Component Calibration Sheet. These sheets shall include the following:
 - 1) Project name
 - 2) Loop number
 - 3) Component tag number or I/O module number
 - 4) Component code number analog system
 - 5) Manufacturer (for analog system element)
 - 6) Model number/serial number (for analog system)
 - 7) Summary of functional requirements, for example:
 - a) For indicators and recorders: Scale and chart ranges
 - b) For transmitters/converters: Input and output ranges
 - c) For computing elements: Function
 - d) For controllers: Action (direct/reverse) control modes (PID)
 - e) For switching elements: Unit range, differential (fixed/adjustable), reset (auto/manual)
 - f) For I/O modules: Input or output
 - 8) Calibrations; for example:
 - a) For analog devices: Required and actual inputs and outputs at 0, 10, 50, and 100 percent of span, rising and falling
 - b) For discrete devices: Required and actual trip points and reset points
 - c) For controllers: Mode settings (PID)
 - d) For I/O modules: Required and actual inputs or outputs of 0, 10, 50, and 100 percent of span, rising and falling
 - 9) Space for comments
 - 10) Space for signoff by the Contractor

2. Maintain the Loop Status Reports and Component Calibration Sheets at the jobsite and make them available to the Engineer and Owner upon request.
3. These inspections and tests do not require witnessing. However, the Engineer will review the Loop Status Reports and Component Calibration Sheets and spot-check their entries periodically and upon completion of the Operational Readiness Test. Any deficiencies found shall be corrected.

3.06 FUNCTIONAL DEMONSTRATION TEST (FDT)

- A. Once ORT has been completed and operational readiness has been confirmed, a witnessed Functional Demonstration Test shall be performed on the complete system to demonstrate that it is operating and in compliance with the Contract Documents. Each specified function shall be demonstrated on a paragraph-by-paragraph, loop-by-loop, and component-by-component basis.
- B. Loop-specific and non-loop-specific tests shall be the same as specified under SOFTWARE and OPERATIONAL READINESS TESTS except that the entire installed PICS shall be tested and all functions demonstrated.
- C. Simulation of field signals, or simulation of the response of the process, or the response of individual components, or the functions being monitored or controlled, shall not be permitted. Simulation may be permitted with the express permission of the ENGINEER. The decision to simulate is the ENGINEER's alone. The CONTRACTOR shall include in the Contract Price the time necessary to wait for all process responses.
- D. Updated versions of the documentation called for under SOFTWARE and OPERATIONAL READINESS TESTS shall be made available to the Engineer at the jobsite both before and during the test. In addition, one copy of the approved Instrumentation O&M Manual shall be made available to the Engineer at the jobsite both before and during testing. The approved schedule shall be followed strictly on an item-by-item basis. Combining of test items shall be at the discretion of the ENGINEER alone. The CONTRACTOR shall include in the Control Price adequate time necessary to complete each test item one at a time.
- E. The daily schedule called for under SOFTWARE and OPERATIONAL READINESS TESTS shall also be followed during the Functional Demonstration Test.
- F. The Engineer will observe each test once on a pass-fail basis. The Engineer alone has the authority to determine if a test passes or fails. Only one (1) fifteen minute window per day will be allowed during the test procedure to make corrections to software or to field equipment and successfully pass a re-test; otherwise, that test will be declared a failure. If a test fails, it will be put on a retest schedule. If other tests to follow rely on a particular test which has failed, then the following tests will also be placed on a retest schedule even though they were not tested. Retesting shall not interrupt the test schedule. The CONTRACTOR may schedule retest days during the testing period, but not more than two per week. All retesting shall only occur on a day designated in the schedule or at the end of testing.
- G. All time and expense incurred by the Engineer and/or OWNER'S staff for all retests shall be borne by the CONTRACTOR and paid to the OWNER. Time and expense incurred shall be on a time and material basis tracked by the Engineer and OWNER for their own staff and presented to the CONTRACTOR on a periodic basis.
- H. The CONTRACTOR shall expedite the repair or correction of any deficiency discovered during testing. The CONTRACTOR shall have personnel representing each trade to standby during the test period to immediately correct, repair, or adjust any item of hardware, software or field equipment causing a test to fail.

- I. The system shall operate continuously for 100 hours without failure before this test will be considered successful.

3.07 35-DAY ACCEPTANCE TEST

- A. All database errors must be corrected prior to the start of the 35-Day Acceptance Test. The 35-Day Acceptance Test will not be considered successful until all databases are correct.
- B. Any malfunction during the test shall be analyzed and corrections made by the Contractor. The Engineer and Owner will determine whether any such malfunctions are sufficiently serious to warrant a repeat of the test. The cost of a retest shall be borne by the CONTRACTOR as specified.
- C. After completion of the Functional Demonstration Test, the Contractor shall be responsible for operation of the entire System for a period of 35 consecutive days, under conditions of full EST process operation, without single non-field repairable malfunction.
- D. During this test, Contractor personnel shall be present as required. The Contractor shall provide personnel for this test who have an intimate knowledge of the hardware and software of the system and also are familiar with the overall plant process. The Supplier shall be on call during the 35-Day Acceptance Test.
- E. While this test is proceeding, the Owner shall have full use of the system. Only the OWNER's operating personnel shall be allowed to operate equipment associated with live processes.
- F. Any malfunction, during this 35 consecutive day test period, which cannot be corrected within 24 hours of occurrence by the Contractor's personnel, or more than two similar failures of any duration, will be considered as a non-field-repairable malfunction.
- G. Upon completion of repairs, by the Supplier, the test shall be repeated as specified herein.
- H. In the event of rejection of any part or function, the Supplier shall perform repairs within 5 days or replacement within 35 days.
- I. Upon successful completion of the 35-Day Acceptance Test, approval of all as-built drawing and O&M Manuals, completion of all related Owner training, and delivery of all spare, expendable, and test equipment, the systems shall be considered substantially complete and the warranty period shall commence.

3.08 ON-SITE SUPERVISION

The Supplier shall provide, on-site, an experienced resident engineering manager to supervise and coordinate all of the on-site activities. This resident engineering manager shall be on-site as required during the total period to affect all the activities relating to the PICS.

3.09 START-UP AND TESTING TEAM

- A. The Supplier shall provide, on-site, a team of experienced engineering, technician, trades personnel, and software/configuring personnel during the total construction period to:
 - 1. Thoroughly check the installation, termination, and adjustment of all the subsystems and their components.
 - 2. Perform and complete all on-site tests.
 - 3. Provide start-up assistance.

4.00 LOOP DESCRIPTIONS

LOOP 101 ELEVATED STORAGE TANK OBSTRUCTION LIGHT PANEL

1. The Obstruction Light Panel shall monitor the status of the obstruction lights. Upon fault or failure of any single lamp the Obstruction Light Panel alarm to the OWS HMI. The HMI shall display the alarms and record time and date of the Failure for recovery.
2. Obstruction light fault alarms shall be recorded at the EST GUI and OWS HMI.
3. Hardware I/O points:
 - a. Obstruction Light Failure - DI

LOOP 201 ELEVATED STORAGE TANK PRESSURE TRANSMITTER

1. The EST Level shall be displayed on the RTU enclosure and transmitted back to SCADA for display and trending as the EST Level in feet and system pressure in PSI, High level and Low level shall be annunciated at the OWS HMI.
2. The pressure range for the pressure transmitter shall be 0 to 150 psi.
3. The level range to be displayed shall be 0 to 35 feet.
4. The EST level and pressure shall be trended at the OWS HMI.
5. RTU Hardware I/O points:
 - a. EST Pressure— AI
6. Alarms – The alarms shall be programmed into the OWS HMI.
 - a. EST High Level – Coordinate high level alarm with the Owner.
 - b. EST High Pressure – Coordinate high pressure alarm level with the Owner.
 - c. EST Low Pressure – Coordinat low pressure alarm level with the Owner

LOOP 301 ELEVATED STORAGE TANK INTRUSION DETECTION

1. Intrusion alarms shall be transmitted to the WTP OWS HMI for display and alarm. An intrusion shall be detected via magnetic contacts.
2. The OWS HMI shall display the alarm and shall include an “acknowledged” button. The operator at the OWS shall be capable of setting a timer on the acknowledge button allowing personnel to enter and leave a location without multiple intrusion alarms sounding.
3. Intrusion detection alarms shall be logged at the OWS HMI.
4. Hardware I/O points:
 - a. Building Intrusion Alarm – DI

LOOP 401 ELEVATED STORAGE TANK ACCESS LADDER LIGHTING UPS

1. The RTU shall monitor the status of the Access Ladder Lighting UPS for failure status.
2. Upon any event where the UPS is providing emergency power to the access ladder lights the UPS shall alarm to the OWS HMI. The HMI shall display the alarms and record time and date of the Failure for recovery.
3. Upon any fault in the UPS or UPS batteries that renders the UPS inoperable in the event of power loss the UPS shall alarm a general fault to the OWS HMI. The HMI shall display the alarms and record time and date of the Failure for recovery.
4. UPS faults and alarms shall be recorded at the EST GUI and OWS HMI.
5. Hardware I/O points:

APPENDIX A
GEOTECHNICAL REPORT

MEMORANDUM



**FREEZE
AND
NICHOLS**

4055 International Plaza, Suite 200 • Fort Worth, Texas 76109 • 817-735-7300 • fax 817-735-7491

TO: Jim Baddaker, P.E.
CC: Robin Ernstrom, E.I.T., Tony Bosecker, P.E.
FROM: Marc T. Miller, P.E.
SUBJECT: 2 MG Elevated Storage Tank
Lancaster, Texas
DATE: July 19, 2012
PROJECT: LCS11454



Introduction, Purpose and Scope

This memo presents the results of the geotechnical investigation for the proposed 2.0 Million Gallon (MG) elevated storage tank project for the City of Lancaster. The investigation was authorized by the City of Lancaster in the Professional Service Agreement dated October 25, 2011.

The purpose of the investigation is to provide recommendations for use during the design of the proposed tank. To accomplish this purpose, the study has been conducted based on the following scope:

- Drilling four (4) exploratory borings to obtain samples for observation and testing, and observe subsurface conditions;
- Performing laboratory tests on selected samples to determine classification and engineering properties of the subsurface;
- Performing an analysis using the collected data to develop recommendations for the proposed tank foundation and subgrade modification; and
- Preparing a technical memorandum report summarizing our findings and recommendations, and include a general discussion of construction considerations for use during development of the project plans and specifications.

Project Information

The proposed elevated storage tank is located southwest of the intersection Wintergreen Road and Reynolds Street in Lancaster, Texas, as shown on the attached Vicinity Map (Figure 1). The proposed elevated storage tank will have a capacity of 2.0 MG and a high water level about 170 feet above the ground surface. The tank will be a composite structure with a cylindrical cast-in-place concrete tower supporting a steel tank with a domed steel roof. The pedestal diameter will be about 48 feet. The City may use the space inside the tower pedestal for general storage. Loads will vary by manufacturer, but dead loads are expected to be about 3,000 to 5,000 kips, with live loads of about 15,000 to 20,000 kips.

July 19, 2012

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Field Investigation

The field investigation for this study included four (4) borings drilled at the proposed elevated tank site on June 20 and 21, 2012. The borings were drilled by Total Depth using a CME 75 truck-mounted drill rig. Mr. Donald D. James, P.G., of FNI supervised the drilling and logged the borings. The borings were drilled using continuous flight augers and sampled using 3-inch I.D. thin-walled tubes. Limestone in Borings T-01, T-02 and T-04 was evaluated in place by the TxDOT cone penetrometer, while the limestone in Boring T-03 was cored with an NX core barrel. The borings were observed for indications of subsurface water entry during drilling and before being backfilled with soil cuttings (except where rock coring was performed).

Hand penetrometer tests were performed on thin-walled tube samples and the results are shown on the boring logs. A value of 4.5+ tons per square foot (tsf) indicates the strength exceeds the capacity of the penetrometer. A hand torvane test was also performed in Boring T-01 at a depth of approximately 2.5 feet.

The boring logs were prepared from the field logs, laboratory test reports, and additional inspection of recovered samples in the laboratory. The logs and boring location plan are attached to this memo. The borings include latitude and longitude collected with a handheld GPS device during drilling. Borings T-01, T-03, and T-04 were later surveyed and the elevation from the survey is provided on the logs. The elevation for Boring T-02 was interpolated from a topographical map of the site. The coordinate data should be considered accurate only to the degree implied by the method used in its determination.

Laboratory Testing

Laboratory tests were performed on selected samples of soil obtained in the field investigation for use during classification of the soils and to evaluate pertinent engineering properties of the materials for the analyses. Gorrondona and Associates, Inc. performed laboratory tests in their Fort Worth, Texas laboratory. The test results are attached to this memo.

Geology

The Dallas Sheet of the Geologic Atlas of Texas locates the project within a mapped outcropping of the Austin Chalk geological formation. This formation typically consists of clays overlying chalky limestone. The thickness of the clay above the limestone varies, but is generally encountered at a shallow depth in the Dallas-metro area. The upper portions of the limestone are generally weathered, fractured, and very light brown to light yellow brown in color. Some zones of severely weathered limestone that are clay-like can be present above the weathered material. The underlying primary limestone is generally harder than the weathered limestone and is light to medium gray in color.

Subsurface Conditions

Subsurface conditions at the site are generally consistent across the site, with some minor variation in layer thickness. Generally, the first 3 to 5 feet of soil consists of hard, plastic clay (CL and CH). This clay is expansive. Limestone bedrock was encountered in all of the borings. The weathered limestone was encountered at depths ranging from 3.5 to 5.3 feet bgs, and was generally 4 to 6 feet thick before transitioning into gray limestone. Texas cone penetration tests in the gray limestone showed resistances ranging from 100 blows per 2.0 inches to 100 blows per 0.25 inches. An unconfined

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compression test in the weathered limestone resulted in an unconfined strength of 63.5 tsf. Unconfined compression tests in the gray limestone ranged from 107.0 to 151.3 tsf.

Water was not encountered during drilling or at the time of completion. Each boring was backfilled 24 hours after completion. The subsurface water conditions in the area probably fluctuate with seasonal and climatic changes, and groundwater may be encountered during construction even though it was not detected in the borings. Groundwater, if present, should generally be expected in the Austin Chalk within the weathered zone and near the interface of the light brown weathered limestone and the gray limestone.

Foundation

Although the elevated storage tank will exert relatively high loads on the foundation system, the presence of relatively shallow limestone will allow for the use of a shallow ring-beam footing system for the support of the tank. Due to some strength variability indicated by the borings in the upper few feet of the weathered limestone the footings should extend a minimum of 8 feet bgs (about Elev. 614). At this depth the excavation should expose light yellow brown weathered limestone that is competent (as verified by a FNI geotechnical engineer).

When bearing on light yellow brown weathered limestone at a depth of 8 feet, the footings may be designed based on an allowable bearing capacity of 10 ksf. If cost-effective, the depth of the footings can be extended an additional 2 to 3 feet (to expose light gray to gray limestone) and designed based on an allowable bearing capacity of 15 ksf. Both values include a minimum safety factor of 3.0. Because the dead loads are relatively high and the supporting tower is wide, downward loads and average bearing pressure will tend to control the size of the footing. Preliminary calculations for the tank indicate that the 10 ksf allowable bearing pressure will result in a footing width of about 16 feet. When founded on relatively hard limestone, settlement should be less than one-half inch.

Project documents should require that the base of the ring footing excavation be observed by a FNI geotechnical engineer to verify that the footing will be supported directly on competent limestone. Once the excavation is approved, a lean-concrete mudslab should be constructed to protect the base of the exposed foundation. The mudslab should be at least 3 inches thick (above high points left during excavation) and have a minimum 28-day unconfined compressive strength of 500 psi. In addition to protecting the exposed bearing material, the mudslab will also provide an improved working platform.

If subsurface vaults are used, then they will be subjected to at-rest lateral earth pressures. If onsite clays are used as backfill, then the vaults may be designed based on an undrained equivalent fluid pressure of 105 psf/ft (triangular stress distribution). This value includes hydrostatic pressure.

This area of Texas is considered to have low seismicity. Seismic designs in Texas are typically based upon the criteria established in the International Building Code (IBC). The seismic design is based upon the Site Class, as defined in Sections 1613.5.2 and 1613.5.5. Based upon the results of the site specific borings and our experience with the local geologic conditions, the average subsurface conditions correspond to Site Class "C." The site may also qualify for Site Class "B", but if that class is desirable shear wave velocity testing should be performed for verification.

Proper drainage is critical to the performance and condition of the foundation and flatwork. Positive surface drainage must be provided that directs surface water away from the structure and flatwork. If water is collected next to or below the structure and flatwork, then undesirable soil movements can

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occur, and these movements can exceed values used in design. It is recommended that a slope of at least 1½ percent be provided. The slopes should direct water away from the structure, and must be maintained throughout construction and the life of the structure. The location of gutter downspouts, and other features, should be designed such that these items will not create moisture concentrations at or beneath the structure or flatwork. Downspouts should discharge well away from the structure, and should not be allowed to erode surface soil.

Base Slab

The interior of the tank pedestal will include a reinforced concrete base slab to allow for storage space within the pedestal. The subgrade within the base slab should be undercut and replaced with "non-expansive" select fill because of expansive soil at the ground surface. This will generally require an undercut of 3.5 to 5.5 feet to expose the underlying weathered limestone. Select fill material should meet the FNI specifications for Class 4 Earth Fill (select fill). The select fill material should be compacted in six-inch lifts to at least 98% of the maximum dry density per ASTM D698 at moisture contents ranging between two points below to two points above optimum moisture content. A permanent vapor barrier beneath the slab is recommended to reduce moisture damage to floor covering and stored materials.

Supply Piping

A supply line will connect the tank to a proposed water line located north of the proposed tank. The hard medium plastic clays found at the site should provide adequate support for the supply pipe. Clean granular bedding and embedment should be used for pipe support in the trench. Cohesionless aggregate pipe embedment should be compacted to at least 95% of maximum index density per ASTM D4253. Cohesive backfill should be compacted to a minimum of 95% of maximum dry density at a moisture content within two percentage points of optimum moisture content, as determined by ASTM D698, Standard Proctor. The pipe embedment should extend to the top of the pipe plus 6 inches.

The pipe trench backfill above the embedment may consist of the clay on site. The placement, compaction, density and moisture requirements for the earth backfill should be the same as recommended above for cohesive backfill except the moisture content should be between optimum moisture content to five percentage points above optimum moisture content. The top 12 inches of backfill should consist of topsoil. The piping will be subject to potential heave from expansive soil underlying the piping, and the magnitude of the potential movement will be less than one inch when embedded at least 2 feet below ground.

Pavement and Flatwork

A 16-foot wide, six-inch thick reinforced concrete entrance road will be constructed from Wintergreen Road to the north side of the proposed elevated storage tank. The entrance road will be about 85 feet in length. A reinforced concrete parking area, approximately 27 feet by 25 feet in plan will be located just northwest of the proposed elevated storage tank. A concrete mow strip will be constructed along the perimeter of the tower.

Flatwork around the tower can be expected to heave from one to two inches with seasonal moisture variations. This degree of movement is generally tolerable for flatwork, but expansion joints should be provided where the sidewalk meets the structure to allow for differential movement. At the doorways, differential movement between the sidewalk and the structure is undesirable. We recommend that approach slabs be designed to span their length at doorways.

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Since expansive clays are present at the site and have significant shrink-swell potential, we recommend treating the pavement subgrade with hydrated lime to improve its strength, workability and to reduce the potential volume changes in the soils due when changes in the water content occur. Prior to lime treatment, the subgrade should be proof-rolled to detect soft spots or compressible material. The undercut area should be brought back to grade by compacting specified fill material in controlled lifts. We recommend a lime application rate of no less than six percent by weight or an approximate application rate of 27 pounds per square yard of treated area. The lime-treated subgrade should extend a minimum of 18 inches beyond the outside edge of the pavement and should be at least six inches thick (compacted). Pavement grades should be designed to accommodate some movement and still provide positive drainage. A minimum concrete pavement thickness of 6 inches is recommended.

Continuity

The geotechnical engineer should be requested to review the plans and specifications before being released for bidding to confirm that the design is consistent with the subsurface conditions indicated by the investigation. Construction should be observed and tested by qualified personnel. Freese and Nichols' geotechnical engineer should be requested to visit the site periodically to observe exposed subsurface conditions and construction procedures and to review the construction observation reports.

Limitations

This report was prepared specifically for use by Freese and Nichols, Inc. and the City of Lancaster for this project, and shall not be used for other projects or purposes. This work was performed in a manner consistent with the level of care and skill ordinarily exercised by other members of Freese and Nichols' profession practicing in the same locality, under similar conditions and at the date the services are provided. Freese and Nichols makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided. Recommendations contained in this report are based on our field observations, subsurface explorations, laboratory tests, and present knowledge of the proposed construction. It is possible that soil, rock or groundwater conditions could vary between or beyond the points explored. This report has been prepared for use during design. Paragraphs, statements, test results, boring logs, figures, etc., should not be taken out of context, nor utilized without a knowledge and awareness of their intent within the purpose of this report.

This report, and any future addenda or reports regarding this site, may be made available to contractors/bidders to supply them with only the data contained in the report regarding subsurface conditions and laboratory test results at the point and time noted. Contractors/bidders may not rely on interpretations, opinion, recommendations, or conclusions contained in the report. Verification of the subsurface conditions for purposes of determining difficulty of excavation, trafficability, etc., is the responsibility of the contractors/bidders. Because of the limited nature of any subsurface study, the contractor may encounter conditions during construction which differ from those presented in this report. In such event, the contractor should promptly notify the Owner so that Freese and Nichols' geotechnical engineer can confirm those conditions.



Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144



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Fort Worth, Texas 76109-4695
Phone - (817) 755-7300
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CITY OF LANCASTER, TEXAS 2.0 MG ELEVATED STORAGE TANK

CIVIL

VICINITY MAP

P&N JOB NO.
LCS11454

DATE
July 2012

SCALE
1"=2,000'

DESIGNED
MTM

DRAFTED
NBB

FILE
CV-BORE-vicinity.dwg

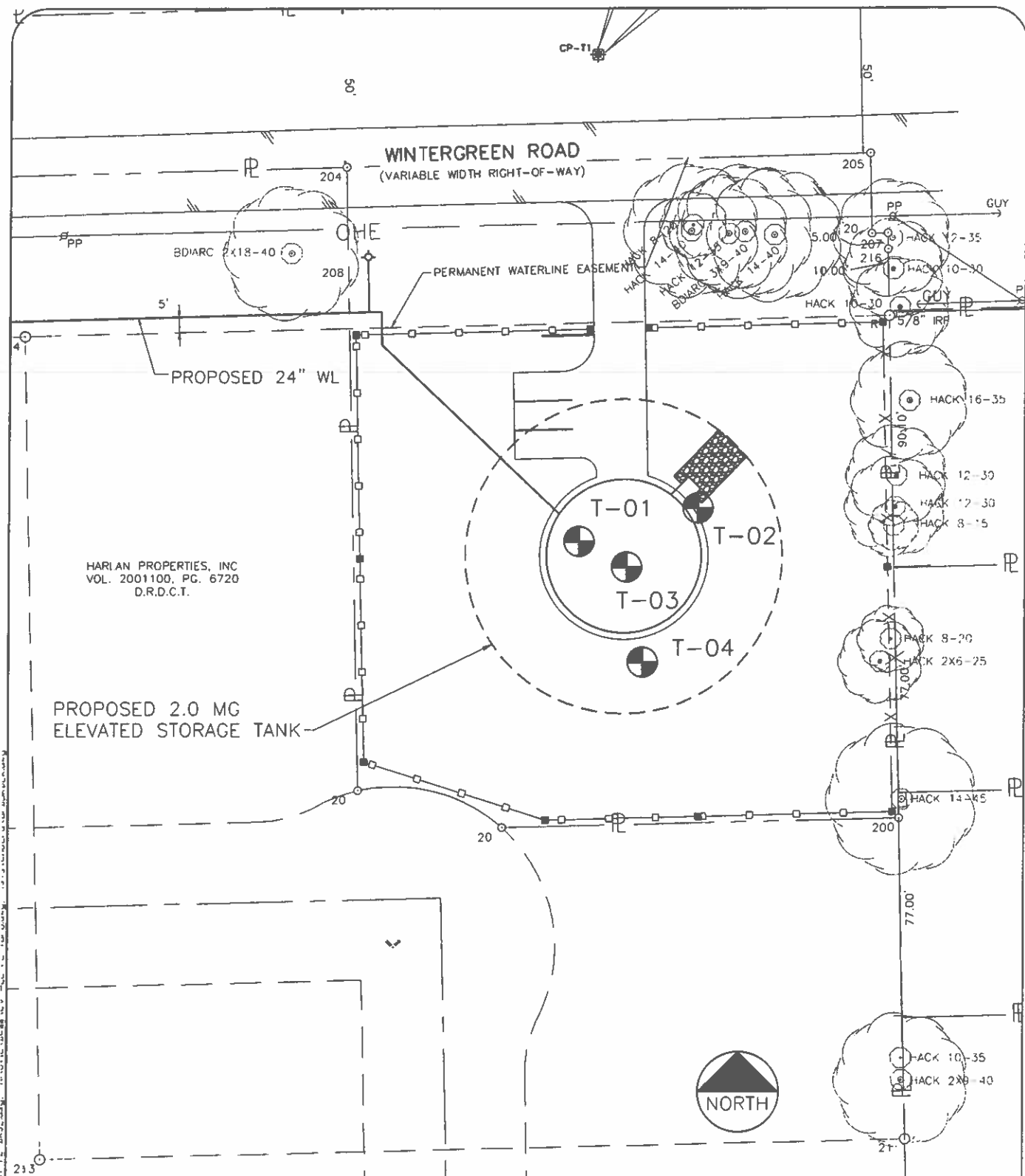
1

FIGURE

Date: Jul 13, 2012 - 1:33pm

User: nbb

File: N:\w\GEOTECH\CV-BORE-vicinity.dwg



HARLAN PROPERTIES, INC
VOL. 2001100, PG. 6720
D.R.D.C.T.

PROPOSED 2.0 MG
ELEVATED STORAGE TANK



4055 International Plaza, Suite 200
Fort Worth, Texas 76109-4895
Phone - (817) 355-7300
Fax - (817) 755-7491

CITY OF LANCASTER, TEXAS 2.0 MG ELEVATED STORAGE TANK

CIVIL

BORING LOCATION MAP

Fresse and Nichols, Inc
Texas Registered Engineering Firm F-2144

F&N JOB NO.
LCS11454

DATE
July 2012

SCALE
1"=40'

DESIGNED
MTM

DRAFTED
NBB

FILE
CV-BORE-LOC2.dwg

2

FIGURE

Date: Jul 13, 2012 - 1:39pm

User: nbb

File: N:\w\GEO\TECH\CV-BORE-LOC2.dwg



LOG OF BORING NO. T-01

Project Description: City of Lancaster 2 MG Elevated Storage Tank

Project Location: Lancaster, Texas

Date Drilling Started: 6/20/2012

Logged By: DDJ

Rig Type: CME 75

Northing/Latitude: 32.61492

Drilling Co.: Total Depth

Hammer Type: Automatic

Easting/Longitude: -96.801704

Project No.: LCS11454

Phase No.:

Date Drilling Completed: 6/20/2012

Drill Method: CFA & DRY

Hammer Wt. & Drop: 140 lb.; 30 in.

Elevation: 622.9 ft.

DEPTH, ft	SAMPLE					SYMBOL	MATERIAL DESCRIPTION	WATER CONTENT, %	UNIT DRY WEIGHT, pcf	% PASSING NO. 200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	UNC. COMPRESSIVE STRENGTH, tsf	STRAIN AT FAILURE, %	ELEVATION, ft
	TYPE	BLOW COUNTS	HAND PENE-TROMETER (P) / TORVANE (T), tsf	RECOVERY, %	RQD, %											
	U-1		4.5+ (P)				LEAN CLAY WITH SAND (CL), dark brown, brown to light yellow brown									
	U-2		4.5+ (P) 2.25 (T)				-with fragmented severely weathered, limestone	16		75	48	21	27			
	U-3		4.5+ (P)				LIMESTONE, light brown, light yellow-brown, hard, jointed, weakly to moderately cemented, fissile, marly, weathered (Austin Chalk)	15	116				2.9	5	19	618
5	SPT-4	12-10-22 (32)														
	TCP-5	50/4"														
	TCP-6	50/1.5" 50/0.50"					LIMESTONE, light gray to gray, hard, moderately cemented, fissile (Austin Chalk)									613
10																
	TCP-7	50/1" 50/0.50"														608
15																
	TCP-8	50/1" 50/0"														603
20																
	TCP-9	50/0.75" 50/0.25"														598
25																
	TCP-10	50/1.75" 50/0.25"														593
30							Total boring depth 30.0 ft.									

Water Observations:
None At Time Of Drilling

Remarks: Backfilled with drill cuttings 24 hr after completion.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual. These logs are subject to the limitations, conclusions, and recommendations in the associated report.

Sheet 1 of 1




LOG OF BORING NO. T-02

Project Description: City of Lancaster 2 MG Elevated Storage Tank
Project Location: Lancaster, Texas
Date Drilling Started: 6/20/2012
Logged By: DDJ
Rig Type: CME 75
Northing/Latitude: 32.614911

Drilling Co.: Total Depth
Hammer Type: Automatic
Easting/Longitude: -96.801569

Project No.: LCS11454
Phase No.:
Date Drilling Completed: 6/20/2012
Drill Method: CFA & DRY
Hammer Wt. & Drop: 140 lb.; 30 in.
Elevation: 622.1 ft.

DEPTH, ft	SAMPLE					SYMBOL	MATERIAL DESCRIPTION	WATER CONTENT, %	UNIT DRY WEIGHT, pcf	% PASSING NO. 200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	UNC. COMPRESSIVE STRENGTH, tsf	STRAIN AT FAILURE, %	ELEVATION, ft
	TYPE	BLOW COUNTS	HAND PENE- TROMETER (P) / TORVANE (T), tsf	RECOVERY, %	RQD, %											
5	U-1	50/2.50"	4.5+ (P)				LEAN CLAY WITH SAND (CL), dark brown, brown, hard, moist -with hard calcareous accretions below 3.5 feet -limonite 3.8 to 4 feet -with fragmented severely weathered limestone	18	77	47	23	24				
	U-2		4.5+ (P)													
	U-3		4.5+ (P)													
5	SP-4	50/2.50"					LIMESTONE, light brown with light yellow-brown, hard, weakly to moderately cemented, silty, fissile, weathered (Austin Chalk)	4.6/617.5								617
10	TCP-5	50/1" 50/0.25"					LIMESTONE, light gray and gray, hard, moderately cemented (Austin Chalk)	10.5/611.6								612
15	TCP-6	50/1" 50/0.25"					-increased drilling resistance below 16 feet									607
20	TCP-8	50/1.75" 50/0.25"														602
25	TCP-9	50/0.50" 50/0.25"														597
30	TCP-9	50/0.50" 50/0.50"					Total boring depth 30.0 ft.									592
Water Observations: None At Time Of Drilling								Remarks: Backfilled with drill cuttings 24 hr after completion.								

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual. These logs are subject to the limitations, conclusions, and recommendations in the associated report.

Sheet 1 of 1



LOG OF BORING NO. T-03

Project Description: City of Lancaster 2 MG Elevated Storage Tank
 Project Location: Lancaster, Texas
 Date Drilling Started: 6/20/2012
 Logged By: DDJ
 Rig Type: CME 75
 Northing/Latitude: 32.614883

Drilling Co.: Total Depth
 Hammer Type: Automatic
 Easting/Longitude: -96.80164

Project No.: LCS11454
 Phase No.:
 Date Drilling Completed: 6/21/2012
 Drill Method: CFA & DRY
 Hammer Wt. & Drop: 140 lb.; 30 in.
 Elevation: 622.0 ft.

DEPTH, ft	SAMPLE					SYMBOL	MATERIAL DESCRIPTION	WATER CONTENT, %	UNIT DRY WEIGHT, pcf	% PASSING NO. 200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	UNC. COMPRESSIVE STRENGTH, tsf	STRAIN AT FAILURE, %	ELEVATION, ft
	TYPE	BLOW COUNTS	HAND PENE- TROMETER (P) / TORVANE (T), tsf	RECOVERY, %	RQD, %											
5	U-1		4.5+ (P)				SANDY LEAN CLAY (CL), dark brown, brown, hard, moist									
	U-2		4.5+ (P)													
	U-3		4.5+ (P)													
	U-4		4.5+ (P)				-with limonite 5 to 5.3 feet	25	65	48	23	25				617
	CP-5	50/2.75" 50/1"					LIMESTONE, very light brown, light yellow-brown, hard, moderately cemented, fissile with manganese and limonitic stains, weathered	11	133				63.5			
10	C-6			100	63		LIMESTONE, light gray, hard, moderately cemented, massive to occasionally fissile on low angle bedding planes and pelecypod shells, pyritic (Austin Chalk)	10	139				122.6			612
15	C-7			97	88			9	141				107			607
20								8	142				151.3			602
25	C-8			92	56			9	134				139.1			597
30							-sandy, shelly, bioplastic below 33 feet									592

Water Observations:
None At Time Of Drilling

Remarks: Drill dry 0 ft. to 6 ft. with 5 inch CFA. Drill wet with water using nx core barrel 6 ft. to 50 ft.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual. These logs are subject to the limitations, conclusions, and recommendations in the associated report.

Sheet 1 of 2



LOG OF BORING NO. T-03

Project Description: City of Lancaster 2 MG Elevated Storage Tank

Project Location: Lancaster, Texas

Date Drilling Started: 6/20/2012

Logged By: DDJ

Rig Type: CME 75

Northing/Latitude: 32.614883

Drilling Co.: Total Depth

Hammer Type: Automatic

Easting/Longitude: -96.80164

Project No.: LCS11454


Phase No.:

Date Drilling Completed: 6/21/2012

Drill Method: CFA & DRY

Hammer Wt. & Drop: 140 lb.; 30 in.

Elevation: 622.0 ft.

DEPTH, ft	SAMPLE					SYMBOL	MATERIAL DESCRIPTION	WATER CONTENT, %	UNIT DRY WEIGHT, pcf	% PASSING NO. 200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	UNC. COMPRESSIVE STRENGTH, tsf	STRAIN AT FAILURE, %	ELEVATION, ft
	TYPE	BLOW COUNTS	HAND PENE- TROMETER (P) / TORVANE (T), tsf	RECOVERY, %	RQD, %											
40	C-9			97	80		LIMESTONE, light gray, hard, moderately cemented, massive to occasionally fissile on low angle bedding planes and pelecypod shells, pyritic(Austin Chalk) (continued) -with hard marl seam 37 to 38 feet									582
40							Total boring depth 40.0 ft.									582
45																577
50																572
55																567
60																562
65																557

Water Observations:
None At Time Of Drilling

Remarks: Drill dry 0 ft. to 6 ft. with 5 inch CFA. Drill wet with water using nx core barrel 6 ft. to 50 ft.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual. These logs are subject to the limitations, conclusions, and recommendations in the associated report.

Sheet 2 of 2



LOG OF BORING NO. T-04

Project Description: City of Lancaster 2 MG Elevated Storage Tank

Project Location: Lancaster, Texas

Date Drilling Started: 6/20/2012

Logged By: DDJ

Rig Type: CME 75

Northing/Latitude: 32.614817

Drilling Co.: Total Depth

Hammer Type: Automatic

Easting/Longitude: -96.801646

Project No.: LCS11454



Phase No.:

Date Drilling Completed: 6/20/2012

Drill Method: CFA & DRY

Hammer Wt. & Drop: 140 lb., 30 in.

Elevation: 621.3 ft.

DEPTH, ft	SAMPLE					SYMBOL	MATERIAL DESCRIPTION	WATER CONTENT, %	UNIT DRY WEIGHT, pcf	% PASSING NO. 200 SIEVE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	UNC. COMPRESSIVE STRENGTH, tsf	STRAIN AT FAILURE, %	ELEVATION, ft	
	TYPE	BLOW COUNTS	HAND PENE- TROMETER (P) / TORVANE (T), tsf	RECOVERY, %	RQD, %												
	U-1		4.5+ (P)				SANDY FAT CLAY (CH), dark brown, brown to yellow-brown, hard, dry to moist -hard calcareous accretions below 2 feet -transition to yellow-brown, limonitic below 3 feet -with fragmented severely weathered limestone	17		61	53	25	28				
5	SPT-4	50/4.75"						LIMESTONE, very light brown to light yellow-brown, hard, weakly to moderately cemented, fissile, silty, chalky, weathered (Austin Chalk)									616
10	TCP-5	50/0.075" 50/0.050"					LIMESTONE, gray, hard, moderately cemented, fissile (Austin Chalk)									611	
15	TCP-6	50/1" 50/0.25"															606
20	TCP-7	50/0.50" 50/0"															601
25	TCP-8	50/0.25" 50/0"															596
30	TCP-9	50/0.25" 50/0"															591
								Total boring depth 30.0 ft.									
Water Observations: None At Time Of Drilling							Remarks: Drill dry with 3 inch steel tubes and 5 inch CFA. Backfilled with drill cuttings 24 hr after completion.										

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual. These logs are subject to the limitations, conclusions, and recommendations in the associated report.

Sheet 1 of 1

ABSORPTION SWELL TEST (ASTM D 4546) RESULTS					
Boring No.	T-03				
Sample Depth (ft)	4.5-5.5				
Sample Height (in)	0.8				
Sample Diameter (in)	2.5				
Initial Sample Volume (cu in)	3.93				
Initial Sample Weight (gr)	142.2				
Initial Moisture (%)	14				
Final Moisture (%)	17				
Initial Wet Unit Weight (pcf)	137.8				
Initial Dry Unit Weight (pcf)	120.9				
Applied Over Burden (psi)	2.9				
Initial Dial Reading (in)	0.1159				
Final Dial Reading (in)	0.1175				
Swell (%)	0.20				

UNCONFINED COMPRESSION TEST (ASTM D 2166) RESULTS

[illegible]

Note: N/A → Strain at Failure Not Measured for Rock Cores

APPENDIX B
FAA PERMIT



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76137

Aeronautical Study No.
2012-ASW-4568-OE

Issued Date: 08/07/2012

Jim Brewer
City of Lancaster
City Hall
211 North Henry Street
Lancaster, TX 75146

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Water Tank 2MG Elevated Storage Tank
Location:	Lancaster, TX
Latitude:	32-36-53.49N NAD 83
Longitude:	96-48-05.59W
Heights:	622 feet site elevation (SE) 195 feet above ground level (AGL) 817 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be completed and returned to this office any time the project is abandoned or:

- ☐ At least 10 days prior to start of construction (7460-2, Part I)
☒ Within 5 days after the construction reaches its greatest height (7460-2, Part II)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 02/07/2014 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817) 321-7752. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2012-ASW-4568-OE.

Signature Control No: 168389505-170640372

(DNE)

Alice Yett
Technician

Attachment(s)
Frequency Data

cc: FCC

Frequency Data for ASN 2012-ASW-4568-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
860	930	MHz	5	W

APPENDIX C
EDA GRANT INFORMATION

**ECONOMIC DEVELOPMENT ADMINISTRATION
EDA REQUIRED SPECIFICATION DOCUMENTS**

Below are the documents that EDA requires to be inserted into the specifications:

- **EDA Required Specification Documents**
 - Davis-Bacon Wage Rates
 - Lobbying Certification and Restriction Forms
(Required for all contracts in which Federal funds exceed \$100,000)
 - Requirements for Affirmative Action (EEO)
 - EDA Contracting Provisions for Construction Projects
 - EDA Construction Site Sign Specifications
(Insert the sign specifications into the *EDA Contracting Provisions for Construction Projects* if the sign has not yet been erected);
 - ✓ There is information available in a variety of file formats for the contractor or sign-maker (See EDA Construction Site Sign)

PREVAILING WAGE RATES FOR CONSTRUCTION

The minimum wages to be paid to various classes of laborers and mechanics will be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on the project of a character similar to the contract work in the City of Lancaster.

Prevailing wage rates are determined by Davis-Bacon and other related Acts and may be found in the Code of Federal Regulations 29 CFR 1.5 and are published in the Federal Register. It is the responsibility of the contractor to ensure items bid (wages) in this contract are current to the published rates. See section 36 of the General Conditions for related requirements.

Rate may be viewed at: <http://www.access.gpo.gov/davisbacon/index.html>

- **Select Texas and Dallas County.**

Except for work on legal holidays, the "general prevailing rate of per diem wage" for the various crafts or type of workers or mechanics is the product of (a) the number of hours worked per day, except for overtime hours, times (b) the above respective Rate Per Hour.

For legal holidays, the "general prevailing rate of per diem wage" for the various crafts or type of mechanics is the product of (a) one and one-half times the above respective Rate Per Hour times (b) the number of hours worked on the legal holiday.

The "general prevailing rate for overtime work" for the crafts or type of workers or mechanics is one and one-half times the above the respective Rate Per Hour.

Under the provisions of Chapter 2258 Texas Government Code, the Contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, Ten Dollars (\$10.00) for each laborer, worker or mechanic employed, for each calendar day, or portion thereof, such laborer, worker or mechanic is paid less than the said stipulated rates for any work under the contract, by him, or by any subcontractor under him.

Under the provisions of Chapter 61 (Payment of Wages) Texas Labor Code, the Contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, Ten Dollars (\$10.00) for each laborer, worker or mechanic employed, for each calendar day, or portion thereof, such laborer, worker or mechanic is paid less than the said stipulated rates for any work under the contract, by him, or by any subcontractor under him.

General Decision Number: TX120027 07/20/2012 TX27

Superseded General Decision Number: TX20100033

State: Texas

Construction Type: Heavy

County: Dallas County in Texas.

Heavy Construction, Including Treatment Plants (Does not include water/sewer lines)

Modification Number	Publication Date
0	01/06/2012
1	04/20/2012
2	07/20/2012

* ASBE0021-003 05/01/2012

Rates	Fringes
-------	---------

ASBESTOS WORKER/HEAT & FROST INSULATOR (Includes application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems).....	\$ 20.67	7.15
---	----------	------

* ELEC0020-003 06/01/2012

Rates	Fringes
-------	---------

Electricians:		
Cable Splicer.....	\$ 26.41	4.50+12.5%
Electrician.....	\$ 24.85	12.25% + 4.70

ELEC0020-006 05/01/2004

Rates	Fringes
-------	---------

Line Construction:		
CABLE SPLICERS.....	\$ 17.12	3.75+14.5%
GROUNDMAN.....	\$ 12.84	3.75+14.5%
LINEMAN & EQUIPMENT OPERATORS.....	\$ 21.41	3.75+14.5%

ENGI0178-001 06/01/2009

Rates	Fringes
-------	---------

Cranes:		
Hydraulic Crane (35 ton & under).....	\$ 23.70	9.35
Hydraulic over 35 tons, Derricks, Overhead Gentry, Stiffleg, Tower, etc., and Cranes with Piledriving or Caisson attachements.....	\$ 24.70	9.35

* IRON0263-010 06/01/2012

Rates	Fringes
-------	---------

Ironworkers:		
Reinforcing & Structural....	\$ 21.85	5.40

* PLUM0100-002 06/01/2012

Rates	Fringes
-------	---------

Plumbers and Pipefitters.....	\$ 28.29	9.82
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* SHEE0068-002 05/01/2012

Rates	Fringes
-------	---------

Sheet metal worker.....\$ 27.09 8.84

SUTX1990-040 08/01/1990

Rates Fringes

CARPENTER.....\$ 10.536

Concrete Finisher.....\$ 9.603

Form Builder.....\$ 8.036

Form Setter.....\$ 9.578

Laborers:

Common.....\$ 7.25

Utility.....\$ 7.25

Pipelayer.....\$ 7.961

Power equipment operators:

Backhoe.....\$ 10.971

Bulldozer.....\$ 9.942

Front end loader.....\$ 10.771

Mechanic.....\$ 9.88

Motor Grader.....\$ 11.633

Oiler.....\$ 9.183

Scraper.....\$ 8.00

TRUCK DRIVER.....\$ 7.465

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows 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, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA

indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

CERTIFICATION REGARDING LOBBYING

(This Certification is required pursuant to 31 U.S.C. 1352)

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$11,000 and not more than \$110,000 for each such failure.

Please check appropriate box:

☒ No nonfederal funds have been used or are planned to be used for lobbying in connection with this application/award/contract.

or

☐ Attached is Standard Form LLL, "Disclosure of Lobbying Activities," which describes the use (past or planned) of nonfederal funds for lobbying in connection with this application/award/contract.

Executed this 6th day of November, 20 12

by Mike Lamon
(Type or Print Name)


(Signature of Executing Official)

Vice President of Landmark Structures Management Inc.,
(Title of Executing Official) General Partner of

Landmark Structures I, L.P.
(Name of organization/applicant)

CONTRACT CLAUSE NEW RESTRICTIONS ON LOBBYING

This contract, subcontract, or subgrant is subject to Section 319 of Public Law 101-121, which added section 1352, regarding lobbying restrictions, to Chapter 13 of Title 31 of the United States Code. The new section is explained in the common rule, 15 CFR Part 28 (55 FR 6736-6748, 2/26/90). Each bidder/applicant/recipient of this contract subcontract, or subgrant and subrecipients are generally prohibited from using Federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with this Award.

Contract Clause Threshold

This Contract Clause regarding lobbying must be included in each application for a subgrant and in each bid for a contract or subcontract exceeding \$100,000 of Federal funds at any tier under the Federal Award.

Certification and Disclosure

Each applicant/recipient of a subgrant and each bidder/applicant/ recipient of a contract or subcontract exceeding \$100,000 of Federal funds at any tier under the Federal Award must file a "Certification Regarding Lobbying" and, if applicable, Standard Form LLL, "Disclosure of Lobbying Activities," regarding the use of any nonfederal funds for lobbying. Certifications shall be retained by the next higher tier. All disclosure forms, however, shall be forwarded from tier to tier until received by the Recipient of the Federal Award (grant), who shall forward all disclosure forms to the Federal agency.

Continuing Disclosure Requirement

Each subgrantee, contractor, or subcontractor that is subject to the Certification and Disclosure provision of this Contract Clause is required to file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person. Disclosure forms shall be forwarded from tier to tier until received by the Recipient of the Federal Award (grant) who shall forward all disclosure forms to the Federal agency.

Indian Tribes, Tribal Organizations, or Other Indian Organizations

Indian tribes, tribal organizations, or any other Indian organizations, including the Alaskan Native organizations, are excluded from the above lobbying restrictions and reporting requirements, but only with respect to expenditures that are by such tribes or organizations for lobbying activities permitted by other Federal law. An Indian tribe or organization that is seeking an exclusion from Certification and Disclosure requirements must provide (preferably in an attorney's opinion) EDA with the citation of the provision or provisions of Federal law upon which it relies to conduct lobbying activities that would otherwise be subject to the prohibitions in and to the Certification and Disclosure requirements of Section 319 of Public Law No. 101-121. Note, also, that a non-Indian subgrantee, contractor, or subcontractor under an award (grant) to an Indian tribe, for example, is subject to the restrictions and reporting requirements.

**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(EXECUTIVE ORDER 11246 AND 41 CFR PART 60-4)**

The following Notice shall be included in, and shall be a part of all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000.

The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation for each trade
	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> %	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is:

State of _____

County of _____

City of _____

107 St. Louis, MO:	
SMSA Counties:	
7040 St. Louis, MO-IL	14.7
IL Clinton; IL Madison; IL Monroe; IL St. Clair; MO Franklin; MO Jefferson; MO St. Charles; MO St. Louis; MO St. Louis City.	
Non-SMSA Counties	11.4
IL Alexander IL Bond; IL Calhoun; IL Clay; IL Effingham; IL Fayette; IL Franklin; IL Greene; IL Jackson; IL Jasper; IL Jefferson; IL Jersey; IL Johnson; IL Macoupin; IL Marion; IL Montgomery; IL Perry; IL Pulaski; IL Randolph; IL Richland; IL Union; IL Washington; IL Wayne; IL Williamson; MO Bollinger; MO Butler; MO Cape Girardeau; MO Carter; MO Crawford; MO Dent; MO Gasconade; MO Iron; MO Lincoln; MO Madison; MO Maries; Mississippi; MO Montgomery; MO Perry; MO Phelps; MO Reynolds; MO Ripley; MO St. Francis; MO Ste. Genevieve; MO Scott; MO Stoddard; MO Warren; MO Washington; MO Wayne.	
108 Springfield, MO:	
SMSA Counties:	
7920 Springfield, MO	2.0
MO Christian; MO Greene.	
Non-SMSA Counties	2.3
KS Allen; KS Bourbon; KS Cherokee; KS Crawford; KS Labette; KS Montgomery; KS Neosho; KS Wilson; KS Woodson; MO Barry; MO Barton; MO Cedar; MO Dade; MO Dallas; MO Douglas; MO Hickory; MO Howell; MO Jasper; MO Laclede; MO Lawrence; MO McDonald; MO Newton; MO Oregon; MO Ozark; MO Polk; MO Pulaski; MO St. Clair; MO Shannon; MO Stone; MO Taney; MO Texas; MO Vernon; MO Webster; MO Wright; OK Craig; OK Ottawa.	

Arkansas:

109 Fayetteville, AR:	
Non-SMSA Counties	3.3
AR Baxter; AR Benton; AR Boone; AR Carroll; AR Madison; AR Marion; AR Newton; AR Searcy; AR Washington; OK Adair; OK Delaware.	
110 Fort Smith, AR:	
SMSA Counties:	
2720 Fort Smith, AR-OK	5.6
AR Crawford; AR Sebastian; OK Le Flore; OK Sequoyah.	
Non-SMSA Counties	6.6
AR Franklin; AR Logan; AR Polk; AR Scott; OK Choctaw; OK Haskell; OK Latimer; OK McCurtain; OK Pittsburg; OK Pushmataha.	
111 Little Rock-North Little Rock, AR:	
SMSA Counties:	
4400 Little Rock-North Little Rock, AR	15.7
AR Pulaski; AR Saline.	
6240 Pine Bluff, AR	31.2
AR Jefferson	
Non-SMSA Counties	16.4
AR Arkansas; AR Ashley; AR Bradley; AR Calhoun; AR Chicott; AR Clark; AR Calhoun; AR Cleveland; AR Conway; AR Dallas; AR Desha; AR Drew; AR Faulkner; AR Fulton; AR Garland; AR Grant; AR Hot Springs; AR Independence; AR Izard; AR Jackson; AR Johnson; AR Lincoln; AR Lonoke; AR Monroe; AR Montgomery; AR Ouachita; AR Perry; AR Pope; AR Prairie; AR Sharp; AR Stone; AR Union; AR Van Buren; AR While; AR Woodruff; AR Yell.	

Mississippi:

112 Jackson, MS:	
SMSA Counties:	
3560 Jackson, MS	30.3
MS Hinds; MS Rankin.	
Non-SMSA Counties	32.0
MS Attala; MS Choctaw; MS Choctaw; MS Clarke; MS Copiah;	
MS Covington; MS Franklin; MS Holmes; MS Humphreys; MS Issaquena;	
MS Jasper; MS Jefferson; MS Jefferson Davis; MS Jones; MS Kemper;	
MS Lauderdale; MS Lawrence; MS Leake; MS Lincoln; MS Lowndes;	
MS Madison; MS Neshoba; MS Newton; MS Noxubee; MS Oktibbeha;	
MS Scott; MS Sharkey; MS Simpson; MS Smith; MS Warren; MS Wayne;	
MS Winston; MS Yazoo.	

Louisiana:

113 New Orleans, LA:	
SMSA Counties	
0920 Biloxi-Gulfport, MS	19.2
MS Hancock; MS Harrison; MS Stone.	
5560 New Orleans, LA	31.0
LA Jefferson; LA Orleans; LA St. Bernard; LA St. Tammany.	
Non-SMSA Counties	27.7
LA Assumption; LA Lafourche; LA Plaquemines; LA St. Charles; LA St. James;	
LA St. John The Baptist; LA Tangipahoa; LA Terrebonne; LA Washington; MS Forrest;	
MS Lamar; MS Marion; MS Pearl River; MS Perry; MS Pike; MS Walthall.	
114 Baton Rouge, LA:	
SMSA Counties:	
0760 Baton Rouge, LA	26.1
LA Ascension; LA East Baton Rouge; LA Livingston; LA West Baton Rouge.	
Non-SMSA Counties	30.4
LA Concordia; LA E. Feliciana; LA Iberville; LA Pointe Coupee; LA St. Helena;	
LA West Feliciana; MS Adams; MS Amite; MS Wilkinson.	
115 Lafayette, LA:	
SMSA Counties:	
3880 Lafayette, LA	20.6
LA Lafayette.	
Non-SMSA Counties	24.1
LA Acadia; LA Evangeline; LA Iberia; LA St. Landry; LA St. Martin;	
LA St. Mary; LA Vermillion.	
116 Lake Charles, LA:	
SMSA Counties:	
3960 Lake Charles, LA	19.3
LA Calcasieu.	
Non-SMSA Counties	17.8
LA Allen; LA Beauregard; LA Cameron; LA Jefferson Davis LA Vernon.	
117 Shreveport, LA:	
SMSA Counties:	
0220 Alexandria, LA	25.7
LA Grant; LA Rapides.	
7680 Shreveport, LA	29.3
LA Bossier; LA Caddo; LA Webster.	
Non-SMSA Counties	29.3
LA Avoyelles; LA Bienville; LA Claiborne; LA De Soto; LA Natchitoches;	
LA Red River; LA Sabine; LA Winn.	

118 Monroe, LA:
 SMSA Counties:
 5200 Monroe, LA _____ 22.8
 LA Ouachita.
 Non-SMSA Counties _____ 27.9
 LA Caldwell; LA Catahoula; LA East Carroll; LA Franklin; LA Jackson; LA La Salle; LA Lincoln;
 LA Madison; LA Morehouse; LA Richland; LA Tensas; LA Union; LA West Carroll.

Texas:

119 Texarkana, TX:
 SMSA Counties:
 8360 Texarkana, TX-Texarkana, AR _____ 19.7
 AR Little River; AR Miller; TX Bowie.
 Non-SMSA Counties _____ 20.2
 AR Columbia; AR Hempstead; AR Howard; AR Lafayette; AR Nevada; AR Pike;
 AR Sevier; TX Camp; TX Cass; TX Lamar; TX Morris; TX Red River; TX Titus.

120 Tyler-Longview, TX:
 SMSA Counties:
 4420 Longview, TX _____ 22.8
 TX Gregg; TX Harrison.
 8640 Tyler, TX _____ 23.5
 TX Smith.
 Non-SMSA Counties _____ 22.5
 TX Anderson; TX Angelina; TX Cherokee; TX Henderson; TX Houston; TX Marion;
 TX Nacogdoches; TX Panola; TX Rusk; TX San Augustine; TX Shelby; TX Upshur;
 TX Wood.

121 Beaumont-Port Arthur, TX:
 SMSA Counties:
 0840 Beaumont-Port Arthur Orange, TX _____ 22.6
 TX Hardin; TX Jefferson; TX Orange.
 Non-SMSA Counties _____ 22.6
 TX Jasper; TX Newton; TX Sabine; TX Tyler.

122 Houston, TX:
 SMSA Counties
 1260 Bryan-College Station, TX _____ 23.7
 TX Brazos.
 2920 Galveston-Texas City, TX _____ 28.9
 TX Galveston.
 3360 Houston, TX _____ 27.3
 TX Brazoria; TX Fort Bend; TX Harris; TX Liberty, TX Montgomery, TX Waller.
 Non-SMSA Counties _____ 27.4
 TX Austin; TX Burleson; TX Calhoun; TX Chambers; TX Colorado; TX De Witt;
 TX Fayette; TX Goliad; TX Grimes; TX Jackson; TX Lavaca; TX Leon;
 TX Madison; TX Matagorda; TX Polk; TX Robertson; TX San Jacinto; TX Trinity;
 TX Victoria; TX Walker; TX Washington; TX Wharton.

123 Austin, TX:
 SMSA Counties:
 0640 Austin, TX _____ 24.1
 TX Hays; TX Travis; TX Williamson.
 Non-SMSA Counties _____ 24.2
 TX Bastrop; TX Blanco; TX Burnet; TX Caldwell; TX Lee; TX Llano.

124 Waco-Killeen-Temple, TX:
 SMSA Counties:
 3810 Killeen-Temple, TX. _____ 16.4
 TX Belt TX Coryall.
 8800 Waco, TX _____ 20.7
 TX McLernmarx

Non-SMSA Counties	18.6
TX Bosque; TX Falls; TX Freestone; TX Hamilton; TX Hill; TX Lampasas; TX Limestone; TX Milam; TX Mills.	
125 Dallas-Fort Worth, TX:	
SMSA Counties	
1920 Dallas-Fort Worth, TX	18.2
TX Collier; TX Dallas; TX Denton; TX Ellis; TX Hood; TX Johnson; TX Kaufman; TX Parker; TX Rockwall; TX Tarrant; TX Wise.	
7640 Sherman-Denison, TX	9.4
TX Grayson.	
Non-SMSA Counties	17.2
OK Bryan; TX Cooke; TX Delta; TX Erath; TX Fannin; TX Franklin; TX Hopkins; TX Hunt; TX Jack; TX Montague; TX Navarro; TX Palo Pinto; TX Rains; TX Somervell; TX Van Zandt.	
126 Wichita Falls, TX:	
SMSA Counties:	
9080 Wichita Falls, TX:	12.4
TX Clay; TX Wichita.	
Non-SMSA Counties	11.0
TX Archer; TX Baylor; TX Cottle; TX Foard; TX Hardeman; TX Wilbarger; TX Young.	
127 Abilene, TX:	
SMSA Counties:	
0040 Abilene, TX	11.6
TX Callahan; TX Jones; TX Taylor.	
Non-SMSA Counties	10.9
TX Brown; TX Coleman; TX Comanche; TX Eastland; TX Fisher; TX Haskell; TX Kent; TX Knox; TX Mitchell; TX Nolan; TX Scurry; TX Shackelford; TX Stephens; TX Stonewall; TX Throckmorton.	
128 San Angelo, TX:	
SMSA Counties:	
7200 San Angelo, TX	19.2
TX Tom Green.	
Non-SMSA Counties	20.0
TX Coke; TX Concha; TX Crockett; TX Irion; TX Kimble; TX McCulloch; TX Mason; TX Menard; TX Reagan; TX Runnels; TX San Saba; TX Schleicher; TX Sterling; TX Sutton; TX Terrell.	
129 San Antonio, TX:	
SMSA Counties:	
4080 Laredo	87.3
TX Webb.	
7240 San Antonio, TX	47.8
TX Bexar; TX Comal; TX Guadalupe.	
Non-SMSA Counties	49.4
TX Atascosa; TX Bandera; TX Dimmit; TX Edwards; TX Frio; TX Gillespie; TX Gonzales; TX Jim Hogg; TX Karnes; TX Kendall; TX Kerr; TX Kinney; TX La Salle; TX McMullen; TX Maverick; TX Medina; TX Real; TX Uvalde; TX Val Verde; TX Wilson; TX Zapata; TX Zavala.	
130 Corpus Christi, TX:	
SMSA Counties:	
1880 Corpus Christi, TX	41.7
TX Nueces; TX San Patricio.	
Non-SMSA Counties	44.2
TX Aransas; TX Bee; TX Brooks; TX Duval; TX Jim Wells; TX Kenady; TX Kyberg; TX Live Oak; TX Refugio.	
131 Brownsville-McAllen-Harlingen, TX:	
SMSA Counties:	
1240 Brownsville-Harlingen-San Benito, TX	71.0
TX Cameron.	
4880 McAllen-Pharr-Edinburg, TX	72.8

TX Hidalgo.	
Non-SMSA Counties	72.9
TX Starr; TX Willacy.	
132 Odessa-Midland, TX:	
SMSA Counties:	
5040 Midland, TX	19.1
TX Midland.	
5800 Odessa, TX	15.1
TX Ector.	
Non-SMSA Counties	18.9
TX Andrews; TX Crane; TX Glasscock; TX Howard; TX Loving; TX Martin;	
TX Pecos; TX Reeves; TX Upton; TX Ward; TX Winkler.	
133 El Paso, TX:	
SMSA Counties:	
2320 El Paso, TX	57.8
TX El Paso.	
Non-SMSA Counties	49.0
NM Chaves; NM Dona Ana; NM Eddy; NM Grant; NM Hidalgo; NM Luna; NM Otero;	
NM Sierra, TX Brewster; TX Culberson; TX Hudspeth; TX Jeff Davis; TX Presidio.	
134 Lubbock, TX:	
SMSA Counties:	
4600 Lubbock	19.6
TX Lubbock.	
Non-SMSA	19.5
NM Lea; NM Roosevelt ; TX Bailey; TX Borden; TX Cochran; TX Crosby;	
TX Dawson; TX Dickens; TX Floyd; TX Gaines; TX Garza; TX Hale; TX Hockley;	
TX King; TX Lamb; TX Lynn; TX Motley; TX Terry; TX Yoakum.	
135 Amarillo, TX:	
SMSA Counties:	
0320 Amarillo, TX	9.3
TX Potter; TX Randall.	
Non-SMSA Counties	11.0
NM Curry; NM Harding; NM Quay; NM Union; OK Beaver; OK Cimarron; OK Texas;	
TX Armstrong; TX Briscoe; TX Carson; TX Castro; TX Childress; TX Collingsworth; TX	
Dallam; TX Deaf Smith; TX Donley; TX Gray; TX Hall; TX Hansford; TX Hartley; TX	
Hemphill; TX Hutchinson; TX Lipscomb; TX Moore; TX Ochitree; TX Oldham; TX	
Parmer; TX Roberts; TX Sherman; TX Swisher; TX Wheeler.	

Oklahoma:

136 Lawton, OK:	
SMSA Counties:	
4200 Lawton, OK	14.8
OK Comanche.	
Non-SMSA Counties	10.8
OK Cotton; OK Green; OK. Harmon; OK Jackson; OK Jefferson; OK Kiowa;	
OK Stephens; OK Tillman.	
137 Oklahoma City, OK:	
SMSA Counties	
5880 Oklahoma City, OK	10.2
OK Canadian; OK Cleveland; OK McClain; OK Oklahoma; OK Pottawatomie.	
Non-SMSA Counties	9.0
OK Alfalfa; OK Atoka; OK Beckham; OK Blaine; OK Caddo; OK Carter; OK Coat;	
OK Custer; OK Dewey; OK Ellis; OK Garfield; OK Garvin; OK Grady; OK Grant;	
OK Harper; OK Hughes; OK Johnston; OK Kingfisher; OK Lincoln; OK Logan; OK	
Love; OK Major; OK Marshall; OK Murray, OK Okfuskee; OK Pontotoc; OK Roger	
Mills; OK Seminole; OK Washita; OK Woods; Ok Woodward.	

138 Tulsa, OK:	
SMSA Counties:	
8560 Tulsa, OK	10.2
OK Creek; OK Mayes; OK Osage; OK Rogers; OK Tulsa; OK Wagoner.	
Non-SMSA Counties	10.0
OK Cherokee; OK Key; OK McIntosh; OK Muskogee; OK Noble; OK Nowata; OK Okmulgee; OK Pawnee; OK Payne; OK Washington.	

Kansas:

139 Wichita, KS:	
SMSA Counties:	
9040 Wichita, KS	7.9
KS Butler; KS Sedgwick.	
Non-SMSA Counties	5.7
KS Barber; KS Barton; KS Chase; KS Chautauqua; KS Clark; KS Comanche. KS Cowley; KS Edwards; KS Elk; KS Finney; KS Ford; KS Grant; KS Gray; KS Greeley; KS Greenwood; KS Hamilton; KS Harper; KS Harvey; KS Haskell; KS Hodgeman; KS Kearny; KS Kingman; KS Kiowa; KS Lane; KS McPherson; KS Marion; KS Meade; KS Morton; KS Ness; KS Pawnee; KS Pratt; KS Reno; KS Rice; KS Rush; KS Scott; KS Seward; KS Stafford; KS Stanton; KS Stevens; KS Sumner; KS Wichita.	
140 Salina, KS:	
Non-SMSA Counties	1.5
KS Cheyenne; KS Cloud; KS Decatur; KS Dickinson; KS Ellis; KS Ellsworth; KS Gove; KS Graham; KS Jewell; KS Lincoln; KS Logan; KS Mitchell; KS Norton; KS Osborne; KS Ottawa; KS Phillips; KS Rawlins; KS Republic; KS Rooks; KS Russell; KS Saline; KS Sheridan; KS Sherman; KS Smith; KS Thomas; KS Trego; KS Wallace.	
141 Topeka, KS:	
SMSA Counties:	
8440 Topeka, KS	9.0
KS Jefferson; KS Osage; KS Shawnee.	
Non-SMSA Counties	8.5
KS Clay; Coffey; KS Geary; KS Jackson; KS Lyon; KS Marshall; KS Morris; KS Nemaha; KS Pottawatomie; KS Riley; KS Wabaunsee; KS Washington.	

Nebraska:

142 Lincoln, NE:	
SMSA Counties:	
4360 Lincoln, NE	2.8
NE Lancaster.	
Non SMSA Counties	1.9
NE Butler; NE Fillmore; NE Gage; NE Jefferson; NE Johnson; NE Nemaha; NE Otoe; NE Pawnee; NE Polk; NE Richardson; NE Saline; NE Seward; NE Thayer; NE York.	
143 Omaha, NE:	
SMSA Counties:	
5920 Omaha, NE-IA	7.6
IA Pottawattamie; NE Douglas; NE Sarpy.	
Non-SMSA	6.3
IA Adams; IA Audubon; IA Cass; IA Fremont; IA Harrison; IA Mills; IA Montgomery; IA Page; IA Shelby; IA Taylor; NE Burt; NE Cass; NE Colfax; NE Dodge; NE Platte; NE Saunders; NE Washington.	
144 Grand Island, NE:	
Non SMSA Counties	1.4
NE Adams; NE Aurthur; NE Blaine; NE Boyd; NE Brown; NE Buffalo; NE Chase; NE Cherry; NE Clay; NE Custer; NE Dawson; NE Dundy; NE Franklin; NE Frontier; NE Fumas; NE Garfield; NE Gosper; NE Grant; NE Greeley; NE Hall; NE Hamilton;	

Non-SMSA Counties	12.8
CO Cheyenne; CO Clear Creek; CO Elbert CO Grand; CO Kit Carson; CO Logan; CO Morgan; CO Park; CO Phillips; CO Sedgwick; CO Summit; CO Washington; CO Yuma.	
158 Colorado Springs-Pueblo, CO:	
SMSA Counties:	
1720 Colorado Springs, CO	10.9
CO EL Paso; CO Teller.	
6560 Pueblo, CO	27.5
CO Pueblo.	
Non-SMSA Counties	19.0
CO Alamosa; CO Baca; CO Bent; CO Chaffee; CO Conejos; CO Costilla; CO Crowley; CO Custer; CO Fremont; CO Huerfano; CO Kiowa; CO Lake; CO Las Animas; CO Lincoln; CO Mineral; CO Otero; CO Prowers; CO Rio Grande; CO Saguache.	
159 Grand Junction, CO:	
Non-SMSA Counties	10.2
CO Archuleta; CO Delta; CO Dolores; CO Eagle; CO Garfield; CO Gunnison; CO Hinsdale; CO La Plata, CO Mesa; CO Moffat; CO Montezuma; CO Montrose; CO Ouray; CO Pitkin; CO Rio Blanco; CO Routt; CO San Juan; CO San Miguel; UT Grand; UT San Juan.	

New Mexico:

160 Albuquerque, NM:	
SMSA Counties:	
0200 Albuquerque, NM	38.3
NM Bernalillo; NM Sandoval.	
Non-SMSA Counties	45.9
NM Citron. NM Colfax; NM De Baca; NM Guadalupe; NM San Juan; NM San Miguel; NM Santa Fe; NM Socorro; NM Taos; NM Torrance; NM Valencia.	

Arizona:

161 Tucson, AZ:	
SMSA Counties:	
8520 Tucson, AZ	24.1
AZ Pima.	
Non-SMSA Counties	27.0
AZ Cochise; AZ Graham; AZ Greenlee; AZ Santa Cruz.	
162 Phoenix, AZ:	
SMSA Counties:	
6200 Phoenix, AZ	15.8
AZ Maricopa.	
Non-SMSA Counties	19.6
AZ Apache; AZ Coconino; AZ Gila; AZ Mohave; AZ Navajo; AZ Pinal; AZ Yavapai; AZ Yuma.	

Nevada:

163 Las Vegas, NV:	
SMSA Counties:	
4120 Las Vegas, NV	13.9
NV Clark.	

**U. S. DEPARTMENT OF COMMERCE
ECONOMIC DEVELOPMENT ADMINISTRATION**



**EDA CONTRACTING PROVISIONS
FOR CONSTRUCTION PROJECTS**

These EDA Contracting Provisions for Construction Projects (EDA Contracting Provisions) are intended for use by recipients receiving federal assistance from the U. S. Department of Commerce - Economic Development Administration (EDA). They contain provisions specific to EDA and other federal provisions not normally found in non-federal contract documents. The requirements contained herein must be incorporated into all construction contracts and subcontracts funded wholly or in part with federal assistance from EDA.

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1. **DEFINITIONS**

Agreement – The written instrument that is evidence of the agreement between the Owner and the Contractor overseeing the Work.

Architect/Engineer - The person or other entity engaged by the Recipient to perform architectural, engineering, design, and other services related to the work as provided for in the contract.

Contract – The entire and integrated written agreement between the Owner and the Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

Contract Documents – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents.

Contractor – The individual or entity with whom the Owner has entered into the Agreement.

Drawings or Plans – That part of the Contract Documents prepared or approved by the Architect/Engineer that graphically shows the scope, extent, and character of the Work to be performed by the Contractor.

EDA - The United States of America acting through the Economic Development Administration of the U.S. Department of Commerce or any other person designated to act on its behalf. EDA has agreed to provide financial assistance to the Owner, which includes assistance in financing the Work to be performed under this Contract. Notwithstanding EDA's role, nothing in this Contract shall be construed to create any contractual relationship between the Contractor and EDA.

Owner – The individual or entity with whom the Contractor has entered into the Agreement and for whom the Work is to be performed.

Project – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

Recipient - An entity receiving Federal financial assistance from EDA, including any EDA-approved successor to the entity.

Specifications – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

Subcontractor – An individual or entity having direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

Work – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

2. **APPLICABILITY**

The Project to which the construction work covered by this Contract pertains is being assisted by the United States of America through federal assistance provided by the U.S. Department of Commerce - Economic Development Administration (EDA). Neither EDA, nor any of its departments, entities, or employees is a party to this Contract. The following EDA Contracting Provisions are included in this Contract and all subcontracts or related instruments pursuant to the provisions applicable to such federal assistance from EDA.

3. **FEDERALLY REQUIRED CONTRACT PROVISIONS**

- (a) Administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate (Contracts more than the simplified acquisition threshold - currently fixed at \$100,000. *See* 41 U.S.C. 403(11)).
- (b) Termination for cause and for convenience by the Recipient including the manner by which it will be effected and the basis for settlement (all contracts in excess of \$10,000).
- (c) Compliance with Executive Order 11246 of September 24, 1965, *Equal Employment Opportunity*, as amended by Executive Order 11375 of October 13, 1967 and as supplemented by Department of Labor regulations at 41 C.F.R. chapter 60 (applicable to all construction contracts awarded in excess of \$10,000 by recipients of federal assistance and their contractors or subrecipients).
- (d) Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. § 874) as supplemented by Department of Labor regulations at 29 C.F.R. part 3 (all contracts and subgrants for construction or repair).
- (e) Compliance with the Davis-Bacon Act (40 U.S.C. § 3145) as supplemented by Department of Labor regulations at 29 C.F.R. part 5 (construction contracts in excess of \$2,000 awarded by Recipients and subrecipients).
- (f) Compliance with sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-330) as supplemented by Department of Labor regulations at 29 C.F.R. part 5. (construction contracts awarded by Recipients and subrecipients in excess of \$2,000, and in excess of \$2,500 for other contracts which involve the employment of mechanics or laborers)
- (g) EDA requirements and regulations pertaining to reporting.

- (h) EDA requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.
- (i) EDA requirements and regulations pertaining to copyrights and rights in data.
- (j) Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clear Air Act (42 U.S.C. § 7606), section 508 of the Clean Water Act (33 U.S.C. § 1368), Executive Order 11738, *Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act With Respect to Federal Contracts, Grants, or Loans*, and Environmental Protection Agency regulations at 48 C.F.R. part 15 (applicable to contracts, subcontracts, and subgrants of amounts in excess of \$ 100,000).

4. REQUIRED PROVISIONS DEEMED INSERTED

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion of correction.

5. INSPECTION BY EDA REPRESENTATIVES

The authorized representatives and agents of EDA shall be permitted to inspect all work, materials, payrolls, personnel records, invoices of materials, and other relevant data and records.

6. EXAMINATION AND RETENTION OF CONTRACTOR'S RECORDS

(a) The Owner, EDA, or the Comptroller General of the United States, or any of their duly authorized representatives shall, generally until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders that do not exceed \$10,000.

(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the Owner, EDA, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

7. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the progress schedule. The Contractor also shall furnish the Owner (a) a detailed estimate giving a complete breakdown of the contract price and (b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only to determine the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

8. CONTRACTOR'S TITLE TO MATERIAL

No materials, supplies, or equipment for the work shall be purchased by the Contractor or by any subcontractor that is subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants and guarantees that he/she has good title to all work, materials, and equipment used by him/her in the Work, free and clear of all liens, claims, or encumbrances.

9. INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the completion of the Work shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. Materials of construction, particularly those upon which the strength and durability of any structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for intended uses.

10. "OR EQUAL" CLAUSE

Whenever a material, article, or piece of equipment is identified in the Contract Documents by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard. Any material, article, or equipment of other manufacturers and vendors that will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Architect/Engineer, of equal substance and function. However, such substitution material, article, or equipment shall not be purchased or installed by the Contractor without the Architect/Engineer's written approval.

11. PATENT FEES AND ROYALTIES

(a) Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device that is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in

the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the Owner in the Contract Documents.

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

12. CLAIMS FOR EXTRA COSTS

No claims for extra work or cost shall be allowed unless the same was done in pursuance of a written order from the Architect/Engineer approved by the Owner.

13. CONTRACTORS AND SUBCONTRACTORS INSURANCE

(a) The Contractor shall not commence work under this Contract until the Contractor has obtained all insurance reasonably required by the Owner, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until the insurance required of the subcontractor has been so obtained and approved.

(b) Types of insurance normally required are:

- (1) Workmen's Compensation
- (2) Contractor's Public Liability and Property Damage
- (3) Contractor's Vehicle Liability
- (4) Subcontractors Public Liability, Property Damage and Vehicle Liability
- (5) Builder's Risk (Fire and Extended Coverage)

(c) **Scope of Insurance and Special Hazards:** The insurance obtained, which is described above, shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims that may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him/her and also against any of the special hazards that may be encountered in the performance of this Contract.

(d) **Proof of Carriage of Insurance:** The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of applicable insurance policies.

14. CONTRACT SECURITY BONDS

(a) If the amount of this Contract exceeds \$100,000, the Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a payment bond in an amount equal to one hundred percent (100%) of the Contract price or in a penal sum not less than that prescribed by State, Territorial, or local law, as security for the payment of all persons performing labor on the Work under this Contract and furnishing materials in connection with this Contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law. Before final acceptance, each bond must be approved by EDA. If the amount of this Contract does not exceed \$100,000, the Owner shall specify the amount of the payment and performance bonds.

(b) All bonds shall be in the form prescribed by the Contract Documents except as otherwise provided in applicable laws or regulations, and shall be executed by such sureties as are named in the current list of *Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies* as published in Treasury Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act. Surety companies executing the bonds must also be authorized to transact business in the state where the Work is located.

**15. LABOR STANDARDS - DAVIS-BACON AND RELATED ACTS
(as required by section 601 of PWEDA)**

(a) Minimum Wages

(1) All laborers and mechanics employed or working upon the site of the Work in the construction or development of the Project will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act at 29 C.F.R. part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor, which is attached hereto and made a part hereof, regardless of any contractual relationship that may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 C.F.R. § 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 C.F.R. § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the

rate specified for each classification for the time actually worked therein, provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates determined under 29 C.F.R. § 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (i) Any class of laborers or mechanics to be employed under the Contract, but not listed in the wage determination, shall be classified in conformance with the wage determination. EDA shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(A) The work to be performed by the classification requested is not performed by a classification in the wage determination;

(B) The classification is utilized in the area by the construction industry; and

(C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and EDA or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by EDA or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and EDA or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), EDA or its designee shall refer the questions, including the views of all interested parties and the recommendation of EDA or its designee, to the Administrator for determination.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(2)(ii) or (iii) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(b) Withholding

EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper employed or working on the site of the Work in the construction or development of the Project, all or part of the wages required by the Contract, EDA or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. EDA or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

(c) Payrolls and basic records

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the Work in the construction or development of the Project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 C.F.R. § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, the plan or program is financially responsible, and the plan or program has been communicated in writing to the laborers or mechanics affected, and provide records that show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of

apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) For each week in which Contract work is performed, the Contractor shall submit a copy of all payrolls to the Owner for transmission to EDA or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 C.F.R. part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose. It may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402; or downloaded from the U.S. Department of Labor's website at www.dol.gov/esa/forms/whd/index.htm. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under 29 C.F.R. § 5.5(a)(3)(i) and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 C.F.R. part 3;

(C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 14(c)(ii) of this section.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of Title 18 and section 231 of Title 31 of the U.S. Code.

(3) The Contractor or subcontractor shall make the records required under paragraph 14(c)(1) of this section available for inspection, copying, or transcription by authorized representatives of EDA or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them

available, EDA or its designee may, after written notice to the Contractor or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 C.F.R. part 5.12.

(d) Apprentices and Trainees.

(1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a Project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) Trainees. Except as provided in 29 C.F.R. § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program that has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and

Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman's hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(3) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, *Equal Employment Opportunity*, as amended, and 29 C.F.R. part 30.

(e) Compliance with Copeland Anti-Kickback Act Requirements. The Contractor shall comply with the Copeland Anti-Kickback Act (18 U.S.C. § 874 and 40 U.S.C. § 276(c)) as supplemented by Department of Labor regulations (29 C.F.R. part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that the Contractor and any subcontractors shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. The Owner shall report all suspected or reported violations to EDA.

(f) Subcontracts. The Contractor and any subcontractors will insert in any subcontracts the clauses contained in 29 C.F.R. §§ 5.5(a)(1) through (10) and such other clauses as EDA or its designee may require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 C.F.R. part 5.5.

(g) Contract termination; debarment. The breach of the contract clauses in 29 C.F.R. part 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 C.F.R. § 5.12.

(h) Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 C.F.R. parts 1, 3, and 5 are herein incorporated by reference in this contract.

(i) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 C.F.R. parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and EDA or its designee, the U.S. Department of Labor, or the employees or their representatives.

(j) Certification of Eligibility.

(1) By entering into this Contract, the Contractor certifies that neither it nor any person or firm that has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

(2) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

16. LABOR STANDARDS - CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(a) Overtime requirements. No Contractor or subcontractor contracting for any part of the Contract work, which may require or involve the employment of laborers or mechanics, shall require or permit any such laborer or mechanic in any workweek in which that person is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(b) Violation; liability for unpaid wages, liquidated damages. In the event of any violation of the clause set forth in paragraph (a) of this section, the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a) of this section, in the sum of \$10 for each calendar day on which such individual was required or

permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a) of this section.

(c) **Withholding for unpaid wages and liquidated damages.** EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) of this section.

(d) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (a) through (c) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a) through (c) of this section.

17. **EQUAL EMPLOYMENT OPPORTUNITY**

(a) The Recipient hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 C.F.R. chapter 60, which is paid for in whole or in part with funds obtained from EDA, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers representatives of the Contractor's

commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and pursuant to rules, regulations, and orders of the Secretary of Labor and will permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulations or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Contractor will include the portion of the sentence immediately preceding paragraph 17(a) (1) and the provisions of paragraphs 17(a)(1) through (6) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as EDA or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in or is threatened with litigation with or by a subcontractor or vendor as a result of such direction by EDA or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(8) The Recipient further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally-assisted construction work. Provided, however, that if the Recipient so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government that does not participate in work on or under the Contract.

(9) The Recipient agrees that it will assist and cooperate actively with EDA and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish EDA and the Secretary of Labor such information as they may

require for the supervision of such compliance, and that it will otherwise assist EDA in the discharge of the EDA's primary responsibility for securing compliance.

(10) The Recipient further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by EDA or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the Recipient agrees that if it fails or refuses to comply with these undertakings, EDA may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this EDA financial assistance; refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

(b) Exemptions to Above Equal Opportunity Clause (41 C.F.R. chapter 60):

(1) Contracts and subcontracts not exceeding \$10,000 (other than Government bills of lading) are exempt. The amount of the Contract, rather than the amount of the federal financial assistance, shall govern in determining the applicability of this exemption.

(2) Except in the case of subcontractors for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.

(3) Contracts and subcontracts not exceeding \$10,000 for standard commercial supplies or raw materials are exempt.

18. CONTRACTING WITH SMALL, MINORITY AND WOMEN'S BUSINESSES

(a) If the Contractor intends to let any subcontracts for a portion of the work, the Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services.

(b) Affirmative steps shall consist of:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

- (3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- (4) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises;
- (5) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies;
- (6) Requiring each party to a subcontract to take the affirmative steps of this section; and
- (7) The Contractor is encouraged to procure goods and services from labor surplus area firms.

19. **HEALTH, SAFETY, AND ACCIDENT PREVENTION**

(a) In performing this contract, the Contractor shall:

- (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to their health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
- (2) Protect the lives, health, and safety of other persons;
- (3) Prevent damage to property, materials, supplies, and equipment; and,
- (4) Avoid work interruptions.

(b) For these purposes, the Contractor shall:

- (1) Comply with regulations and standards issued by the Secretary of Labor at 29 C.F.R. part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (40 U.S.C. § 3701 – 3708); and
- (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this Contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 C.F.R. part 1904.

(d) The Owner shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the Work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as EDA, or the Secretary of Labor shall direct as a means of enforcing such provisions.

20. CONFLICT OF INTEREST AND OTHER PROHIBITED INTERESTS

(a) No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof.

(b) No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

(c) The Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the Contract Documents has a corporate or financial affiliation with the supplier or manufacturer.

(d) The Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, may be involved. Such a conflict may arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in the Contractor. The Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from the Contractor or subcontractors.

(e) If the Owner finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the Owner or EDA in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate this Contract. The Owner may also pursue other rights and remedies that the law or this Contract

provides. However, the existence of the facts on which the Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

(f) In the event this Contract is terminated as provided in paragraph (e) of this section, the Owner may pursue the same remedies against the Contractor as it could pursue in the event of a breach of this Contract by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the Owner may pursue exemplary damages in an amount (as determined by the Owner) which shall not be less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such officer or employee.

21. **RESTRICTIONS ON LOBBYING**

(a) This Contract, or subcontract is subject to section 319 of Public Law 101-121, which added section 1352, regarding lobbying restrictions, to chapter 13 of title 31 of the United States Code. The new section is explained in the common rule, 15 C.F.R. part 28 (55 FR 6736-6748, February 26, 1990). Each bidder under this Contract or subcontract is generally prohibited from using federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with this EDA Award.

(b) **Contract Clause Threshold:** This Contract Clause regarding lobbying must be included in each bid for a contract or subcontract exceeding \$100,000 of federal funds at any tier under the EDA Award.

(c) **Certification and Disclosure:** Each bidder of a contract or subcontract exceeding \$100,000 of federal funds at any tier under the federal Award must file Form CD-512, *Certification Regarding Lobbying*, and, if applicable, Standard Form-LLL, *Disclosure of Lobbying Activities*, regarding the use of any nonfederal funds for lobbying. Certifications shall be retained by the Contractor or subcontractor at the next higher tier. All disclosure forms, however, shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(d) **Continuing Disclosure Requirement:** Each Contractor or subcontractor that is subject to the Certification and Disclosure provision of this Contract Clause is required to file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person. Disclosure forms shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(e) **Indian Tribes, Tribal Organizations, or Other Indian Organizations:** Indian tribes, tribal organizations, or any other Indian organizations, including Alaskan Native organizations, are excluded from the above lobbying restrictions and reporting requirements, but only with respect to expenditures that are by such tribes or organizations for lobbying activities permitted by other federal law. An Indian tribe or organization that is seeking an exclusion from Certification and Disclosure requirements must provide EDA with the citation of the provision or provisions of federal law upon which it relies to conduct lobbying activities that would otherwise

be subject to the prohibitions in and to the Certification and Disclosure requirements of section 319 of Public Law No. 101-121, preferably through an attorney's opinion. Note, also, that a non-Indian subrecipient, contractor, or subcontractor under an award to an Indian tribe, for example, is subject to the restrictions and reporting requirements.

22. HISTORICAL AND ARCHAEOLOGICAL DATA PRESERVATION

The Contractor agrees to facilitate the preservation and enhancement of structures and objects of historical, architectural or archaeological significance and when such items are found and/or unearthed during the course of project construction. Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the State Historic Preservation Officer (SHPO) for recovery of the items. See the National Historic Preservation Act of 1966 (80 Stat 915, 16 U.S.C. § 470) and Executive Order No. 11593 of May 31, 1971.

23. CLEAN AIR AND WATER

Applicable to Contracts in Excess of \$100,000

(a) **Definition.** "Facility" means any building, plant, installation, structure, mine, vessel, or other floating craft, location, or site of operations, owned, leased, or supervised by the Contractor or any subcontractor, used in the performance of the Contract or any subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the United States Environmental Protection Agency (EPA) determines that independent facilities are collocated in one geographical area.

(b) In compliance with regulations issued by the EPA, 2 C.F.R. part 1532, pursuant to the Clean Air Act, as amended (42 U.S.C. § 7401 *et seq.*); the Federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 *et seq.*); and Executive Order 11738, the Contractor agrees to:

(1) Not utilize any facility in the performance of this contract or any subcontract which is listed on the EPA List of Violating Facilities pursuant to 2 C.F.R. part 1532 for the duration of time that the facility remains on the list;

(2) Promptly notify the Owner if a facility the Contractor intends to use in the performance of this contract is on the EPA List of Violating Facilities or the Contractor knows that it has been recommended to be placed on the List;

(3) Comply with all requirements of the Clean Air Act and the Federal Water Pollution Control Act, including the requirements of section 114 of the Clean Air Act and section 308 of the Federal Water Pollution Control Act, and all applicable clean air and clean water standards; and

(4) Include or cause to be included the provisions of this clause in every subcontract and take such action as EDA may direct as a means of enforcing such provisions.

24. USE OF LEAD-BASED PAINTS ON RESIDENTIAL STRUCTURES

(a) If the work under this Contract involves construction or rehabilitation of residential structures, the Contractor shall comply with the Lead-based Paint Poisoning Prevention Act (42 U.S.C. § 4831). The Contractor shall assure that paint used on the Project on applicable surfaces does not contain lead in excess of the percentages set forth in Paragraphs (a) and (b) of this section. In determining compliance with these standards, the lead content of the paint shall be measured on the basis of the total nonvolatile content of the paint or on the basis of an equivalent measure of lead in the dried film of paint already applied.

(1) For paint manufactured after June 22, 1977, paint may not contain lead in excess of 6 one-hundredths of 1 percent (.0006) lead by weight.

(2) For paint manufactured on or before June 22, 1977, paint may not contain lead in excess of five-tenths of 1 percent lead by weight.

(b) As a condition to receiving assistance under PWEDA, recipients shall assure that the restriction against the use of lead-based paint is included in all contracts and subcontracts involving the use of federal funds.

(c) Definitions

(1) "Applicable surfaces" are those exterior surfaces which are readily accessible to children under seven years of age.

(2) "Residential structures" means houses, apartments, or other structures intended for human habitation, including institutional structures where persons reside, which are accessible to children under seven years of age, such as day care centers, intermediate and extended care facilities, and certain community facilities.

25. ENERGY EFFICIENCY

The Contractor shall comply with all standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public L. No. 94-163) for the State in which the Work under the Contract is performed.

26. ENVIRONMENTAL REQUIREMENTS

When constructing a Project involving trenching and/or other related earth excavations, the Contractor shall comply with the following environmental constraints:

(1) **Wetlands.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert wetlands.

(2) **Floodplains.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency (FEMA) Floodplain Maps, or other appropriate maps, i.e., alluvial soils on Natural Resource Conservation Service (NRCS) Soil Survey Maps.

(4) **Endangered Species.** The Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the Contractor, the Contractor will immediately report this evidence to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the U.S. Fish and Wildlife Service.

27. **DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSIONS**

As required by Executive Order 12549, *Debarment and Suspension*, and implemented at 2 C.F.R. part 1326, for prospective participants in lower tier covered transactions (except subcontracts for goods or services under the \$25,000 small purchase threshold unless the subrecipient will have a critical influence on or substantive control over the award), as defined at 2 C.F.R. part 1326.

(1) By entering into this Contract, and by further executing Form CD-512, the Contractor and subcontractors certify, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this Contract by any federal department or agency.

(2) Where the Contractor or subcontractors are unable to certify to any of the statements in this certification, the Contractor or subcontractors shall attach an explanation to this bid.

See also 15 C.F.R. §§ 14.13 or 24.35, as applicable.

28. **EDA PROJECT SIGN**

The Contractor shall supply, erect, and maintain in good condition a Project sign according to the specifications provided by EDA. To the extent practical, the sign should be a free standing sign. Project signs shall not be located on public highway rights-of-way. Location and height of signs will be coordinated with the local agency responsible for highway or street safety in the Project area, if any possibility exists for obstructing vehicular traffic line of sight. Whenever the EDA site sign specifications conflict with State law or local ordinances, the EDA Regional Director will permit such conflicting specifications to be modified so as to comply with State law or local ordinance.

EDA PROJECT SIGN

The Contractor shall supply, erect, and maintain in good condition a project sign according to the specifications set forth below:

EDA SITE SIGN SPECIFICATIONS

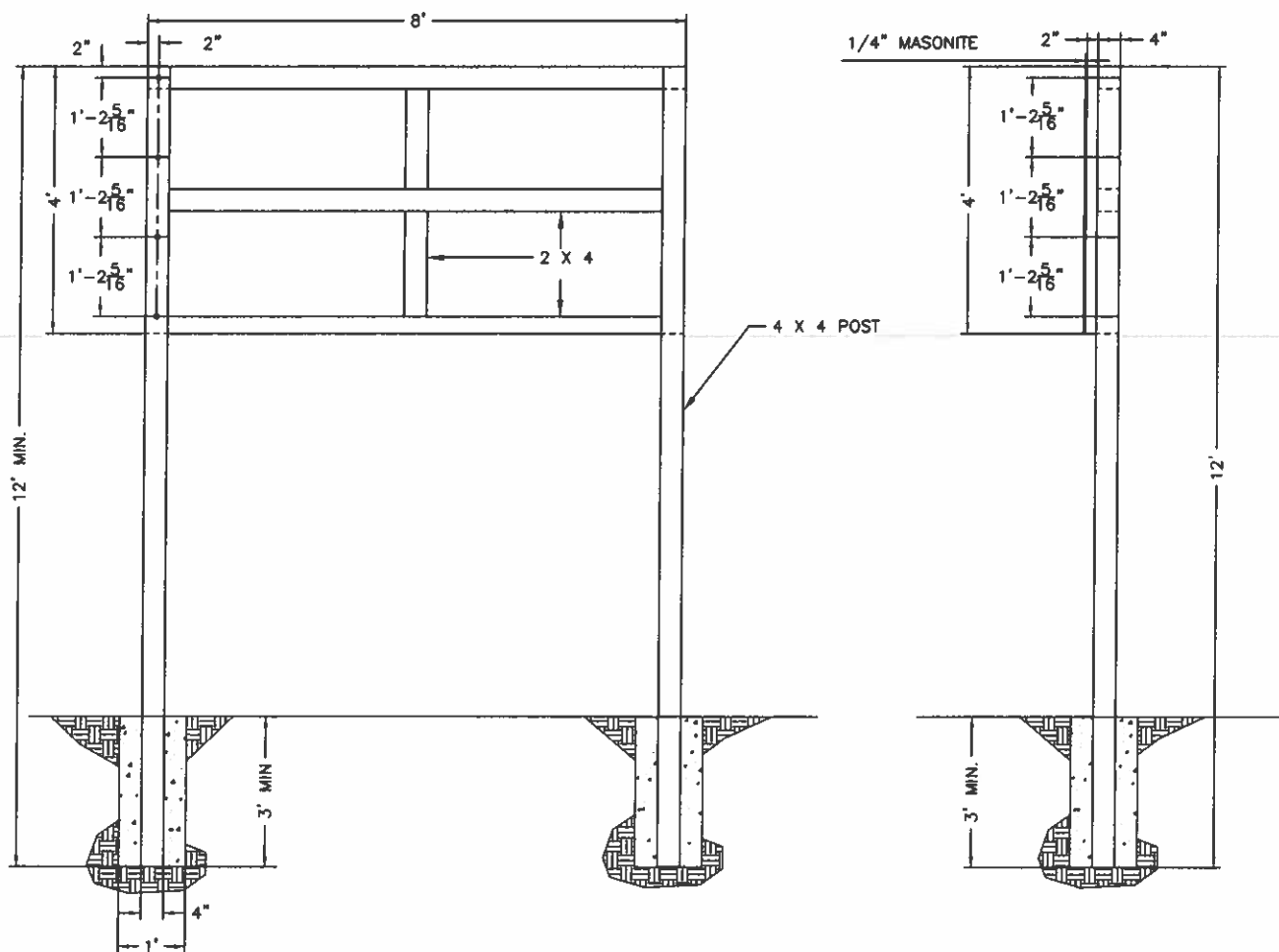
<u>Size:</u>	4' x 8' x 3/4"
<u>Materials:</u>	Exterior grade/MDO plywood (APA rating A-B)
<u>Supports:</u>	4" x 4" x 12' posts with 2" x 4" cross branching
<u>Erection:</u>	Posts shall be set a minimum of three feet deep in concrete footings that are at least 12" in diameter.
<u>Paint:</u>	Outdoor enamel
<u>Colors:</u>	Crimson Red, Stark White, Royal Blue and Jet Black. Specifically, on white background the following will be placed: "American Jobs," "American Values" and the three flag stripes in red; "U.S. Department of Commerce" in blue; "EDA logo" in blue; "Provided by Equal Opportunity Employers In partnership with the" in blue; "U.S. DEPARTMENT OF COMMERCE" in blue; "Economic Development Administration" in red; the words "and the" and the name of the "Investment Recipient" in blue; "Creating Higher-Skill, Higher-Wage Job Opportunities in Your Community" in blue; and "Barack Obama President of the United States of America" in black.
<u>Lettering:</u>	Lettering and positioning will be as shown on the attached illustration.

Project signs will not be erected on public highway rights-of-way.

If any possibility exists for obstruction to traffic line of sight, the location and height of the sign will be coordinated with the agency responsible for highway or street safety in the area.

The EDA Regional Director may permit modifications to these specifications if they conflict with state law or local ordinances.

No additional lettering or logos are permitted on the sign.



SIGN A
MASONITE SIGN
SCALE: 3/8" = 1'

PROJECT - SIGN A

ECONOMIC DEVELOPMENT ADMINISTRATION



Provided by Equal Opportunity Employers
In Partnership with the



U.S. DEPARTMENT of COMMERCE Economic Development Administration and the <Investment Recipient>

Creating Higher-Skill, Higher-Wage Job Opportunities in Your Community

Barack Obama

President of the United States of America

INSURANCE REQUIREMENTS - CONSTRUCTION

CONTRACTOR SHALL MAINTAIN INSURANCE

- 1.1 The Contractor at his own expense shall purchase, maintain and keep in force during the life of this contract, adequate insurance that will protect the Contractor and/or any Additional Insured from claims which may arise out of or result from operations under this contract. The insurance required shall provide adequate protections from all claims, whether such operations be by the Contractor or by any Additional Insured or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts of any of them may be liable and from any special hazards, such as blasting, which may be encountered in the performance of this contract in the amounts as shown below in Paragraph 13.2.1.
- 1.2 The Contractor shall not commence work on any Contract in the City of Lancaster until the Contractor has obtained all the insurance required under this paragraph and such insurance has been approved by the City.

TYPES AND AMOUNTS OF INSURANCE

The Contractor shall furnish and maintain during the life of the contract adequate Insurance in such amounts as follows:

<u>Type of Insurance</u>	<u>Amount</u>
--------------------------	---------------

- | | |
|----|--|
| a. | Worker's Compensation as set forth in the Worker's Compensation Act. |
| b. | Commercial General Liability
\$1,000,000 Each Accident/Occurrence. The policy shall have no coverage removed by exclusions.
Limit of Insurance per Project or Owner's and Contractor's Protective Liability Insurance for the Project. |
| c. | Automobile Liability
\$500,000 Combined single limit per occurrence. |
| d. | Installation Floater |

This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverage's designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under builder's risk insurance.

- e. Builders Risk

This insurance shall be written in completed value form and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be less than the insurable value of the work at completion less the value

materials and equipment insured under installation floater insurance.

Equipment installed under this contract shall be insured under installation floater insurance when the aggregate value of the equipment exceeds \$10,000.00.

If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

1.3 ADDITIONAL INSURED / PROJECT INFORMATION

The Owner shall be named as an additional insured on the Commercial General Liability (Public), Policies furnished by the Contractor.

The project name and bid/contract number shall be listed on the certificate.

1.4 WRITTEN NOTIFICATION

Each insurance policy shall contain a provision requiring that thirty (30) days prior to expiration, cancellation, non-renewal or any material change in coverage, a notice there of shall be given by certified mail to the Purchasing Agent, City of Lancaster, PO Box 940, Lancaster, Texas, 75146.

1.5 PREMIUMS AND ASSESSMENTS

Companies issuing the insurance policies shall have no recourse against the City for payment of any premiums or assessments for any deductibles which are at the sole responsibility and risk of the Contractor.

1.6 CERTIFICATE OF INSURANCE

Proof that the insurance is in force shall be furnished to the City of Lancaster on a Standard Certificate of Insurance Form. In the event any insurance policy shown on the Certificate of Insurance has an expiration date that is prior to the completion and final acceptance of the project by the City of Lancaster, the contractor shall furnish the City proof of identical continued coverage no later than thirty (30) days prior to the expiration date shown on the Certificate of Insurance.

1.7 PRIMARY COVERAGE

The coverage's provided herein shall be primary and noncontributory with any other insurance maintained by the City of Lancaster, Texas, for its benefit, including self insurance.

1.8 WORKER'S COMPENSATION INSURANCE COVERAGE

The Contractor shall:

- 1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
- 2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;
- 3) provide the governmental entity prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;
- 4) obtain from each person providing services on a project, and provide to the governmental entity:

- (A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- 5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- 6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;
- 7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the Texas Worker's Compensation Commission on the sample notice, without any additional words or changes:

Required Workers' Compensation Coverage

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

and

- (8) contractually require each person with whom it contracts to provide services on a project, to:
 - (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in subsection (e) (3) of this rule;
 - (D) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (E) obtain from each other person with whom it contracts, and provide to the Contractor:

- (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
- (H) contractually require each other person with whom it contracts, to perform as required by sub-paragraphs (A) - (H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

GENERAL TERMS & CONDITIONS

ACCESSIBILITY

The city of Lancaster Municipal Building is wheelchair accessible. For accommodations or sign interpretive services needed for pre-bid meetings or bid openings, please contact the City Secretary's Office 48 hours in advance at (972) 218-1112.

ADDENDA

Any interpretations, corrections or changes to this invitation to bid and specifications will be made by addenda. Sole issuing authority of addenda shall be vested in the city of Lancaster Purchasing Agent. Addenda will be mailed to all who are known to have received a copy of this bid.

ASSIGNMENT OF BID/CONTRACT

The successful bidder may not assign their rights and duties under and award without the written consent of the City's Purchasing Agent. Such consent shall not relieve the assignor of liability in event of default by their assignee.

AWARD

The City reserves the right to award any combination of the sections as is deemed in the best interest of the City. The City also reserves the right to not award one or all sections.

BID CONSIDERATION / TABULATION

After bids are unsealed, the bids will be tabulated for comparison on the basis of the bid prices and quantities (lowest responsible vendor) or by the best value. Until final award of the Contract, the city reserves the right to reject any or all bids, to waive technicalities, and to re-advertise for new bids, or proposed to do the work otherwise in the best interests of the City.

The following items will be considered when an award is based on best value:

- ▮ The purchase price;
- ▮ The reputation of the bidder and of the bidder's goods or services;
- ▮ The quality of the bidders' goods or services;
- ▮ The extent to which the goods or services meet the municipality's needs;
- ▮ The bidder's past relationship with the municipality;
- ▮ The impact on the ability of the municipality to comply with laws and rules relating to contracting with historically underutilized businesses and nonprofit organizations employing persons with disabilities;
- ▮ The total long-term cost to the municipality to acquire the bidder's goods or services; and
- ▮ Any relevant criteria specifically listed in the request for bids or proposals.

BID SUBMISSION

Although we are legally required to accept paper bids, we strongly request that bidders submit this bid electronically. Please feel free to call us if you require any assistance with the submittal. Electronic bidding will eliminate errors, eliminate unnecessary work, and is more friendly to the environment. Your cooperation is appreciated. Emailed or Fax submissions will not be accepted. Paper submission must be sealed and submitted prior to the closing date and time.

Any paper submission received after stated due date and time will be returned unopened. If proposals are sent by mail to the Purchasing Agent, the proposer shall be responsible for actual delivery of the proposal to the Purchasing Agent before the advertised date and hour for opening of proposals.

If mail is delayed by the postal service, courier service, or in the internal mail system of the city of Lancaster beyond the date and hour set for the proposal opening, proposals thus delayed will not be considered and will be returned unopened.

BRAND NAMES

If items for which bids have been called for have been identified by a "brand name or equal" description, such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. Bids offering "equal" products will be considered for award if such products are clearly identified in the bids and are determined by the Purchasing Agent and requesting Department to be equal in all material respects to the brand name products referenced. **Unless the bidder clearly indicates in their bid that they are offering an "equal product", their bid shall be considered as offering the brand name product referenced in the Proposal Schedule.**

CANCELLATION OF BIDS

Bids may be cancelled with 30 days written notice and with good cause.

CHANGES OR ALTERATIONS

No part of this bid may be changed/alterd in any way. Vendors must submit written requests to change any specifications/conditions with their proposal. ***Changes made with out submission of a written request to this result in disqualification.***

CONFLICT OF INTEREST

No public official shall have interest in this contract, in accordance with Vernon's Texas Codes Annotated, Local government Code Title 5. Subtitle C, chapter 171.

DEFAULT

In case of default of the successful bidder, the city of Lancaster may procure the articles from other sources and hold the bidder responsible for any excess cost occasioned thereby.

DELIVERY

The City reserves the right to demand bond or penalty to guarantee delivery by the date indicated. If order is given and the Bidder fails to furnish the materials by the guaranteed date, the City reserves the right to cancel the order without liability on its part. All prices are to be F.O.B. Lancaster, Texas all freight prepaid.

DELIVERY DATE

Delivery date is an important factor to the City and may be required to be a part of each bid. The city of Lancaster considers delivery time to be that period elapsing from the time the individual order is placed until that order or work is received by the City at the specified delivery location. Failure of the bidder to meet guaranteed delivery dates or service performance could affect future City orders.

Whenever the Contractor encounters any difficulty which is delaying or threatens to delay timely performance (including actual or potential labor disputes), the Contractor shall immediately give notice thereof in writing to the Purchasing Agent, stating all relevant information. Such notice shall not in any way constitute a basis for an extension of the delivery or performance schedule or be construed as a waiver by the City of any rights or remedies to which it is entitled by law or pursuant to provisions herein. If the delay is unforeseen, the city has the right to extend delivery time if reason appears valid. Failure to give such notice, however, may be grounds for denial of any request for an extension of the delivery or performance schedule because of such delivery.

DISCRIMINATION

The undersigned, in submitting this proposal, represents that they are an equal opportunity employer, and will not discriminate with regard to race, religion, color, national origin, age or sex in the performance of this contract.

ETHICS

The bidder shall not offer or accept gifts of any value nor enter into any business arrangement with any employee, official or agent of the city of Lancaster.

EXCEPTIONS / SUBSTITUTIONS

All bids meeting the intent of this invitation to bid will be considered for award. Bidders taking exception to the specifications, or offering substitutions, shall state these exceptions in the section provided or by attachment as part of the bid. In the absence of such, a list shall indicate that the Bidder has not taken exceptions and shall hold the Bidder responsible to perform in strict accordance with the specifications of the invitation. The city of Lancaster reserves the right to accept any and all or none of the exceptions(s) / substitutions(s) deemed to be in the best interest of the City.

FUNDING

The city operates on a fiscal year that ends on September 30th. Because state law mandates that a municipality may not commit funds beyond a fiscal year, this bid is subject to cancellation if funds for this commodity are not approved in the next fiscal year.

INDEMNIFICATION

In case any action in court is brought against the Owner, or any officer or agent of the Owner, for the failure, omission, or neglect of the vendor to perform any of the covenants, acts, matters, or things by this contract undertaken; or for injury or damage caused by the alleged negligence of the vendor or his subcontractors or his or their agents, or in connection with any claim based on lawful demands of subcontractors, workmen, material men, or suppliers the vendor shall indemnify and save harmless the Owner and his officers and agents, from all losses, damages, costs, expenses, judgments, or decrees arising out of such action.

INSURANCE

Deductibles, of any type, are the responsibility of the vendor/contractor

MISCELLANEOUS

Except as to any supplies or components which the specifications provide need not be new, all supplies and components to be provided under this contract shall be new (not used or reconditioned, and not of such age or so deteriorated as to impair their usefulness or safety), of current production and of the most suitable grade for the purpose intended. If at any time

the performance of this contract the Contractor believes that the furnishing of supplies or components which are not new is necessary or desirable, they shall notify the Purchasing Agent immediately, in writing, including the reasons therefore and proposing any consideration which will flow to the City if authorization to use supplies or components is granted.

The city of Lancaster supports a recycling program. Recycled materials are acceptable and will be considered for award. The City desires to use recycled products when a comparable material/product is available. If your company distributes products made of recycled materials please submit an alternate bid for the items requested. All recycled products should meet the minimum standards established in the bid specifications provided. State any exceptions: costs, warranties and percentage of recycle materials used in the manufacture of the material/product. The City will determine the acceptability of the materials/product bid as an alternate.

The City will consider special vendor pricing on discounts in exchange for City's willingness to participate in new product testing or promotion including ability of vendor to bring other potential customers to city job sites to demonstrate product. The amount of product discount in exchange for these services should be clearly stated in the bid document. Any promotional strategies should be discussed with the Purchasing Agent and approved by the appropriate City Official(s) before submission of the bid.

PATENTS / COPYRIGHTS

The successful bidder agrees to protect the City of Lancaster from claims involving infringement of patents and/or copyrights.

PAYMENT TERMS & CONDITIONS

All bids shall specify terms and conditions of payment, which will be considered as part of, but not control, the award of bid. City review, inspection, and processing procedures ordinarily require thirty (30) days after receipt of invoice, materials or service. Bids which call for payment before 30 days from receipt of invoice, or cash discounts given on such payment, will be considered only if in the opinion of the Purchasing Agent the review, inspection and processing procedures can be completed as to the specific purchases within the specified time.

It is the intention of the city of Lancaster to make payment on completed orders within thirty (30) days of receiving invoicing unless unusual circumstances arise. Invoices shall be fully documented as to labor, materials and equipment provided. Orders will be placed by the Purchasing Department and must be given a Purchase Order Number to be valid. No payments shall be made on invoices not listing a Purchase Order Number. No partial payment will be made.

PROVISIONAL CLAUSES

The city of Lancaster will not enter into any contract where the cost is provisional upon such clauses as are known as "escalator" or "cost-plus" clauses.

REJECTION OF BIDS

The City reserves the right to reject any or all bids or to waive technicalities at its option when in the best interests of said City.

Bids will be considered irregular if they show any omissions, alteration of form, additions, or conditions not called for, unauthorized alternate bids or irregularities of any kind. However, the City reserves the right to waive any irregularities and to make the award in the best interests of the City.

The City reserves the right to reject any or all bids, and all bids submitted are subject to this reservation. Bids may be rejected, among other reasons, for any of the following specific reasons:

- Bids received after the time limit for receiving bids as stated in the advertisement.
- Proposal containing any irregularities.
- Unbalanced value of any items.

Bidders may be disqualified and their bids not considered, among other reasons, for any of the following specific reasons:

- Reason for believing collusion exists among the Bidders.
- Reasonable grounds for believing that any Bidder is interested in more than one Proposal for the work contemplated.
- The Bidder being interested in any litigation against the City.
- The Bidder being in arrears on any existing contract or having defaulted on a previous contract.
- Lack of competency as revealed by a financial statement, experience and equipment, questionnaires, etc.
- Uncompleted work, which in the judgment of the City will prevent or hinder the prompt completion of additional work if awarded.

REQUEST FOR NON-CONSIDERATION

Bids deposited with the City cannot be withdrawn prior to the time set for opening bids. Request for non-consideration of bids must be made in writing to the Purchasing Agent and received by the City prior to the time set for opening bids. After other bids are opened and publicly read, the Proposal for which non-consideration is properly requested may be returned unopened. The Proposal may not be withdrawn after the bids have been opened, and the Bidder, in submitting the same, warrants and

guarantees that this bid has been carefully reviewed and checked and that it is in all things true and accurate and free of mistakes and that such bid will not and cannot be withdrawn because of any mistake committed by the Bidder.

SALES TAX

The total for each bid submitted must include any applicable taxes. Although the City is exempt from most City, State, or Federal taxes, this is not true in all cases. It is suggested that taxes, if any, be separately identified, itemized, and stated on each bid. The City cannot determine for the bidder whether or not the bid is taxable to the City. The bidder through the bidder's attorney or tax consultant must make such determination. Bills submitted for taxes after the bids are awarded will not be honored.

TERMINATION OF CONTRACT

This contract shall remain in effect until the contract expires, delivery and acceptance of products and/or performance of services ordered or terminated by either party with a thirty (30) day written notice prior to any cancellation. The successful bidder must state the reasons for such cancellation. The city of Lancaster reserves the right to award canceled contract to the next lowest and best bidder as it deems to be in the best interest of the City.

TERMINATION FOR DEFAULT

The city of Lancaster reserves the right to enforce the performance of this contract in any manner prescribed by law or deemed to be in the best interest of the City in the event of breach or default of this contract. The City of Lancaster reserves the right to terminate the contract immediately in the event the successful bidder fails to:

1. Meet schedules;
2. Defaults in the payment of any fees; or
3. Otherwise perform in accordance with these specifications.

Breach of contract or default authorizes the city of Lancaster to exercise any or all of the following rights:

1. The City may take possession of the assigned premises and any fees accrued or becoming due to date;
2. The city may take possession of all goods, fixtures and materials of successful bidder and may foreclose its lien against such personal property, applying the proceeds toward fees due or thereafter becoming due. The City shall give the successful bidder written notice of such default; and in the event said default is not remedied to the satisfaction and approval of the City within two (2) working days of receipt of such notice by the successful bidder, default will be declared and all the successful bidder's rights shall terminate.

Bidder, in submitting this bid, agrees that the City of Lancaster shall not be liable to prosecution for damages in the event that the City declares the bidder in default.

VENUE

This agreement will be governed and construed according to the laws of the State of Texas and performable in the city of Lancaster.

WAGES

Successful bidder shall pay or cause to be paid, without cost or expense to the city of Lancaster, all Social Security, Unemployment and Federal Income Withholding Taxes of all such employees and all such employees shall be paid wages and benefits as required by Federal and/or State Law.

WARRANTY

Successful bidder shall warrant that all items/ services shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title. A copy of the warranty for each item being bid must be enclosed.

GENERAL SPECIFICATIONS

Working Hours

Working hours are not to begin prior to 7:00 a.m. or extend past 6:00 PM.

SITE INVESTIGATION & EXISTING UTILITIES:

The Contractor shall carefully examine the site and satisfy himself about all conditions, which can in any way affect the work or the cost thereof.

SPECIFICATIONS:

All construction must comply with current City of Lancaster standards and specifications and the North Central Texas Council of Government Standard Specifications with the Lancaster amendments.

PROPOSAL:

The prices bid in the proposal shall be full compensation for all material, labor, superintendence, equipment and incidental items required to complete the project ready for use. The cost of all material, labor, superintendence, equipment and incidental work required to complete the project ready for use must be included in the unit or lump sum prices for the bid items provided in the proposal, and no direct compensation will be made for any other work. In case of error, ambiguity, or lack of clearness the Owner reserves the right to consider the bid in the manner that is most advantageous to the Owner.

ADDENDA:

Bidders desiring further information, or interpretation of the plans or specifications, must make request for such information in writing to the Purchasing Agent, prior to 48 hours before the bid opening. Answers to all such Addenda will be bound with and made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding. Should a bidder find discrepancies in or omissions from the plans, specifications, or other contract documents, or should he be in doubt as to their meaning, he should at once notify the Engineer in order that a Written Addendum may be sent to all bidders. Any Addenda issued prior to 24 hours of the opening of bids will be mailed or delivered to each Contractor contemplating the submission of a proposal on this work. The proposal as submitted by the Contractor is to include any Addenda if such are issued by the Engineer prior to 24 hours of the opening of bids. Verbal changes in the work, made prior to submission of bids will not be binding.

SPECIFICATIONS/CONTRACT DOCUMENTS:

Titles to divisions and paragraphs in these Contract Documents are introduced merely for convenience and are not to be taken as part of the Specifications and are, furthermore, not to be taken as a correct and complete segregation of the several units of material and labor. No responsibility, either direct or implied, is assumed by the Engineer/Owner for omissions or duplications by the Contractor or his Sub-Contractor, due to real or alleged error in arrangement of matter in these Contract Documents.

CONFLICTS BETWEEN SPECIFICATIONS AND PROPOSAL:

In the event of conflicts between methods of measurement and payments for the various items of work between the Proposal and the Specifications, the Proposal shall prevail.

CLEAN-UP:

The Contractor shall, at all times, keep the site free from accumulation of waste material, debris, or rubbish caused by his employees or work. At the completion of the work, he shall remove from the

site all his tools, surplus materials, debris, and shall leave the site and his work "broom clean", or its equivalent at his expense, unless otherwise noted on the drawings or specified herein.

TESTING:

Testing will be done as outlined by the plans and specifications and/or the North Central Texas Council of Government Standard Specifications for Public Works Construction as adopted by the City of Lancaster.

BARRICADES, WARNING AND DETOUR SIGNS:

The contractor shall not close a street to traffic or interfere with traffic movement on a street without first notifying the City Engineer and securing permission to do so. When any street or any section of a street is closed, or traffic flow is restricted, the Contractor shall furnish and maintain barricades, warning and directing signs, lights and red flags along the entire street within the limits of the project in accordance with the Texas Manual of Uniform Traffic Control Devices. All lights shall be kept burning between the hours of sunset and sunrise.

All expense incurred for furnishing and maintaining flagmen, barricades, warning and directing signs, flags and lights and any incidentals necessary for the proper direction, safety and convenience of traffic during the contract period shall be borne by the Contractor.

Flagmen shall be provided when deemed necessary by the Director of Public Works/Development Services or his representative.

PRE-CONSTRUCTION CONFERENCE:

A pre-construction conference will be scheduled with awarded vendor within ten (10) of receipt of the notice to proceed. Work should not be started prior to this meeting.

All public utility companies, contractors and sub-contractors, along with any and all Municipal Departments will be in attendance so that work coordination will occur. Contractor will submit sequence of work for the project at this time.

SANITARY FACILITIES:

The Contractor shall build and maintain sanitary facilities at a location satisfactory to the Owner, for use by the employees of the Contractor, and by the Engineer. They shall be well ventilated, but provide concealment, and shall be kept scrupulously clean at all times by the Contractor. The facilities shall be removed and the site restored to its original condition upon completion of the work. All such facilities shall conform to the requirements of State and local health authorities, ordinances and laws.

"Porta Can" or other similar facilities, which may be rented from commercial concerns, will be acceptable.

CONSTRUCTION WATER:

Vendors are required to submit an application/deposit for use of City water with the Utility Billing department, prior to starting work.

The Contractor shall not operate any fire hydrants without the knowledge and permission of the City or their representative. The Contractor will not operate any existing valves in the City of Lancaster.

AS BUILT PLANS:

The Contractor will be furnished one set of plans on which he shall indicate all changes made during construction. All notes and comments necessary to give a clear conception of exactly how all items were constructed including location shall be shown. This set of plans shall be reviewed with the Engineer/Owners representative at the completion of the project. The Engineer will make the changes to the plans (if any) and then submit one blue line copy (stamped As-Built) to the Owner.

review. If the Owner approves this copy, then the Engineer shall submit one (1) full size set of mylars stamped As-Built plans along with a copy of the drawings in a DWG or DGN format and one set of drawings in a PDF format to the City Engineer.

GRASS WORK:

All areas disturbed during construction will be seeded or sodded. Any of these areas located within an existing residential neighborhood will be sodded with the same type of grass that was existing before construction began. Sodding, seeding and fertilizing shall be done in accordance with the North Central Texas Council of Governments Standard Specifications for Public Works Construction.

Seeded and sodded areas shall be fertilized with a 16-8-8 (N-P-K) meeting the requirements of the NCTCOG specifications. Application rate of fertilizer shall be as recommended by manufacturer of fertilizer.

The Contractor shall maintain sodded and seeded areas for a two (2) month period following planting or until the grass has an established minimum height of two inches.

No direct payment will be made for sodding, seeding, fertilizer or for water required by the specifications, unless shown on the plans and/or specifications.

HOLD HARMLESS AGREEMENT:

Prior to any commencing work or storing materials on private property, the Contractor shall arrange for permission to do the work or storage from each property owner. The Contractor shall be responsible for obtaining a "Hold Harmless Agreement" for the City with each property owner. This should be in writing and one copy given to the City for their files.

EXCAVATION:

No classification will be made for any materials to be excavated under this contract, regardless of the type of material encountered or the methods and equipment required to complete the excavation. No extra compensation will be allowed for encountering different types of material on this project.

The estimated quantities of excavation and fill are shown on the drawing and/or the proposal. Payment for excavation, loading, hauling, sprinkling, manipulation and compacting this material will be bid in accordance with the proposal.

All fill embankment shall be compacted to not less than 95% of test method Tex 113E at optimum moisture content (plus four points).

Any trench under existing or proposed roadways and/or alley sections will be either sand backfilled up to within two (2) feet of the top of the subgrade and the remaining two (2) feet will be compacted to 95% of test method Tex 113E in one (1) foot lifts at optimum moisture content (plus four points) using the native material, if suitable, or the entire trench will be compacted to 95% of test method Tex 113E in one (1) foot lifts at optimum moisture content (plus four points) using the native material.

The excess excavation material resulting in this project shall be disposed of by the Contractor (at his expense) at sites approved by the City.

CUTTING AND TESTING OF CONCRETE PAVEMENT CORES:

The Contractor shall have a 4 inch diameter core cut and tested by a certified laboratory to determine the thickness of pavement as actually placed. Cores shall be cut after the concrete is a minimum of 28 days old. Cores, as specified or directed, will not be paid for directly but should be considered subsidiary to other bid items unless otherwise shown on the plans and specifications. If the concrete pavement's strength is deficient, then 6 inch core cuts shall be tested according to the City of Lancaster General Design Standards.

RELOCATION OF FIRE HYDRANTS:

All fire hydrants (whether shown on the plans as new, to be relocated, or reset) shall be new fire hydrants. Existing fire hydrants labeled to be relocated or reset shall be salvaged and delivered to the City Service Center.

Relocated fire hydrants are to be paid for per each hydrant to include all incidental items required by the specifications, the relocation on the companion valve, excavation, backfill, additional pipe and fitting, as required.

PAYMENT FOR OVERTIME CHARGES:

The Contractor will be responsible for payment of overtime charges for the Construction Inspector before 7:30 a.m. and after 4:30 p.m. (Monday through Friday) and on Saturdays. The charges will be at a rate of \$47.00 per hour (minimum two (2) hours). This will be paid in full before final acceptance of the project.

REMOVE EXISTING PIPE & DRAINAGE STRUCTURES:

Existing storm drainage pipe removed but no relayed shall become the property of the Contractor and removed from the site by the Contractor unless otherwise shown on the plans. There shall be no separate pay item for removal of any drainage structure or pipe, unless otherwise listed in the proposal.

REPAIR OF UTILITY CUTS:

Where parts of existing pavement must be removed to permit installation of storm sewer and/or other utility lines, the exact limits of such breakouts shall be per the City of Lancaster General Design Standards.

PREPARE RIGHT-OF-WAY:

This item shall consist of preparing right-of-way for construction operations by the removal and disposal of all obstructions from the right-of-way and from designated easements. Such obstructions shall be considered to include remains of houses not completely removed by others, foundations, floor slabs, concrete brick, lumber, plaster, septic tanks, basements, abandoned utility pipes or conduits, underground service station tanks, equipment or other foundations, fences, retaining walls, and other debris.

It is the intent of this specification to provide for the removal and disposal of all obstructions and objectionable materials not specifically provided for elsewhere in the plans and specifications.

SHOP DRAWINGS:

The Contractor shall submit six sets of all shop and/or construction drawings. These shall be approved by the City Engineer prior to any work being undertaken.

WATER JETTING BACKFILL:

All trench backfill that does not require density control shall be water jetted until settlement ceases. Water jetting IS NOT a separate pay item. The cost thereof shall be included in the price bid for pipe complete in place.

The water shall be applied under pressure when jetting backfill. The tank truck hauling the water shall be equipped with a pressure pump capable of delivering water through a two (2") inch pipe at a minimum of thirty (30 p.s.i.) pounds per square inch pressure. All water jetting of backfill will be to the satisfaction of the Director of Public Works or his representative.

CLEARANCE FROM OTHER PIPES:

The following Special Specification as adopted by the TCEQ for Public Wasteworks projects will be complied with on this project.

Location of Mains

When new water mains and new sanitary sewers are installed, they shall be installed no closer to each other than nine feet or in compliance with TCEQ separation requirements.

Where this cannot be achieved, the sanitary sewer shall be constructed of pressure type pipe with watertight joints as used in water main construction for the nine foot clearance. Unless sewer manholes are made watertight the edge of the manhole shall be located at least nine feet from the water lines.

When new water mains are installed where existing sanitary sewers are located, and when the requirements, as outlined above, cannot be met because of physical conditions, extra precautions shall be taken by centering the water mains so that the pipe joints are at a maximum distance from the sewer line, by encasing the sewer line with concrete, and by installing the water main above the sewer line whenever possible.

No physical connection shall be made between a drinking water supply, public or private, and the sewer or any appurtenance. Any facilities for permitting discharge of drinking water into the sewer or any appurtenance thereof shall be constructed so as to prevent any possibility of sewage entering the drinking water system.

No sewer lines carrying domestic or industrial wastes shall cross suction mains to pumping equipment. Water lines shall not be installed closer than 10 feet to septic tank drain fields.

PROTECTION OF TREES, PLANTS, AND SOIL:

Any trees or other landscape features scarred or damaged by the Contractor's operations shall be restored or replaced at the Contractor's expense. Trimming or pruning to facilitate the work will be permitted only by experienced workmen in an approved manner. Pruned limbs of 1" (one inch) diameter or larger, shall be thoroughly treated as soon as possible with a tree wound dressing. Contractor is to notify property Owner before pruning begins. The Contractor shall take all precautions required to prevent soil erosion during the construction. If excessive erosion occurs, the Contractor shall take immediate measure to prevent further erosion and restore the disturbed surface with topsoil at completion of the work.

SUBSURFACE EXPLORATION:

Subsurface exploration, to ascertain the nature of the soils at the project site, including the amount of rock, if any, is to be the responsibility of any and all prospective bidders.

Whether prospective bidders perform this subsurface exploration jointly or independently, it shall be left to the discretion of such prospective bidders. Subsurface exploration shall not be attempted without the approval of the Engineer.

Any test hole data supplied by the Owner or Engineer is for information only.

TRAFFIC CONTROL:

Contractor must provide to the office of the Director of Public Works, a traffic control plan complying with the Texas Manual of Uniform Traffic Control Devices, signed and sealed by a Texas Registered Professional Engineer. The traffic control plan must be submitted prior to contractor starting work.

The traffic control devices must be installed in conformance with the submitted traffic control plan before the contractor will be allowed to begin work within City Right-Of-Way.

GENERAL CONDITIONS

1. CONTRACT DOCUMENTS:

It is understood and agreed that the Advertisement/Bid Notice, Instructions to Bidders, Proposal, Proposal Data, Contract Agreement, Owner's Purchase Order, Owner's Resolution, Performance Bond, Payment Bond, Maintenance Bond, General Conditions, Special Conditions, Specifications, Council of Governments Standard Specifications for Public Works, 3rd Edition as amended, Drawings, Addenda, and Change Orders issued by the Owner, specifications, and engineering data furnished by the Contractor and accepted by the Owner, are contract documents. Additionally, any other written instruments, correspondence, etc., bound in the volume of the contract documents at the time of execution by the Owner and Contractor shall be "contract documents" whether specifically designated as such or otherwise.

It is the intent of the contract documents that they read as a whole and that all portions of the contract be interpreted so as to give meaning to their terms. In the event of any conflict in the contract documents, handwritten provisions shall prevail over typewritten and typewritten provisions shall prevail over preprinted matter. Additionally, the following order of precedence shall govern among the various contract documents, with the first listed having precedence over any documents listed thereafter.

- Scope of Work
- Contract Agreement
- Owners Resolution
- Addenda to Contract Conditions and Specifications "and Plans"
- Special Conditions
- General Conditions
- Technical Specifications
- Contract Conditions
- Contract Drawings
- All other Contract Documents
- General Design Standards
- North Central Texas Council of Governments Standard Specifications for Public Works

The City reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their work, and where required, shall properly connect and coordinate his work with theirs.

1.1 NO PREJUDICE AGAINST OWNER:

It is understood and agreed by Contractor that Owner has independently prepared most of the Contract Documents and Contractor agrees that, notwithstanding any doctrine of law to the contrary, no presumption and/or prejudice against Owner shall be presumed against Owner (nor construed in favor of Contractor) by any court of competent jurisdiction in its interpretation of the Contract Documents.

2. DEFINITIONS:

Words, phrases, or other expressions used in these contract documents shall have meanings as follows:

- a. "Contract", "contract", or "contract documents" shall include the items enumerated above under CONTRACT DOCUMENTS.

- b. "Owner", "Agency", or "Inspector" shall mean the City of Lancaster, named and designated in the Contract Agreement.
- c. "Contractor" shall mean the corporation, company, partnership, firm, or individual named and designated in the Contract Agreement, who has entered into this contract for the performance of the work covered thereby, and its, his, or their duly authorized representatives or its successors to the contract.
- d. "Subcontractor" shall mean and refer only to a corporation, partnership, or individual having a direct contract with the Contractor for performing work covered by these contract documents, or its successors to the contract.
- e. "Date of contract", or equivalent words, shall mean the date written on the Owner's Resolution, or the Owner's Purchase Order if a Resolution is not required, which shall also be the date written in the first paragraph of the Contract Agreement.
- f. "Day" or "days", unless herein otherwise expressly defined, shall mean a calendar day or days of 24 hours each.
- g. "The work" shall mean the equipment, supplies, materials, labor, and services to be furnished under the contract and the carrying out of all obligations imposed by the contract documents.
- h. "Drawings" or "plans" shall mean all (a) drawings furnished by the Owner or Engineer as a basis for proposals, (b) supplementary drawings furnished by the Owner to clarify and to define in greater detail the intent of the contract drawings and specifications, (c) drawings submitted by the successful bidder with his proposal, provided such drawings are acceptable to the Owner, (d) drawings furnished by the Owner to the Contractor during the progress of the work, and (e) engineering data and drawings submitted by the Contractor during the progress of work.
- i. Whenever in these contract documents the words "as ordered", "as directed", "as required", "as permitted", "as allowed", or words or phrases of like import are used, it shall be understood that the order, direction, requirements, permission, or allowance of the Owner is intended only to the extent of judging compliance with the terms of the contract; none of these terms shall imply that the Owner has any authority or responsibility for supervision of the Contractor's forces or construction operations, such supervision and the sole responsibility therefore being strictly reserved for the Contractor.
- j. Similarly the words "approved", "reasonable", "suitable", "acceptable", "proper", "satisfactory", or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgment of the Owner, to the extent provided in "i" above.
- k. Whenever in these contract documents the expression "it is understood and agreed" or an expression of like import is used, such expression shall mean the mutual understanding and agreement of the parties executing the Contract Agreement.
- l. "Official Acceptance" shall mean the Owner's written acceptance of all work performed under this Contract.

3. CONTRACTOR'S PRELIMINARY OBLIGATION:

The Contractor, as successful bidder, shall furnish the required payment, performance and maintenance bond each in the amount of 100% of the contract price, a valid power-of-attorney proving the agent has the authority to execute the bonds for the surety, and certificates of insurance and an executed contract, within (10) days of notice of award. A certified c

the Board Resolution authorizing said persons to sign and bind the firm must be included with each copy of the Contract. If such Contractor fails to enter into a contract or execute bonds as herein provided, the City may annul the award and award the contract to the bidder whose proposal was next most acceptable and the Contractor shall execute contract and bond as herein provided. The bidder to whom the first award was made shall then forfeit the bid security submitted with his proposal.

The official form of contract will be executed in multiple copies. Two executed copies of the contract will be returned to the Contractor after the contracts and bonds have been approved and executed by the Owner.

All documents, specifications and plans are available on the City's e-procurement site at www.lancaster-tx.com/bids.

4. LEGAL ADDRESSES:

All notices will be delivered to either the email address or physical address located in the signed contract. Either party may change his address at any time by submitting a signed notice on company letterhead to the other party.

5. SCOPE AND INTENT OF CONTRACT DOCUMENTS:

The specifications are intended to supplement but not necessarily duplicate each other. Any work exhibited in the one and not the other shall be executed as if it had been set forth in both, so that the work will be constructed according to the complete design as determined by the Owner.

Should anything necessary for a clear understanding of the work be omitted from the specifications and drawings, or should the requirements appear to be in conflict, the Contractor shall secure written instructions from the Owner before proceeding with the work affected thereby. It is understood and agreed that the work shall be performed accordingly to the true intent of the contract documents.

Owner disclaims to Contractor any express or implied warranties that the specifications and drawings included in the Contract Documents are accurate and sufficient for purpose of completing the work according to the terms of this Agreement.

6. INDEPENDENT CONTRACTOR:

The relationship of the Contractor to the Owner shall be that of an independent Contractor. Owner and Contractor agree that the negotiation, preparation and execution of the Contract Documents were negotiated, prepared, and executed as part of an arms-length transaction, and that no duty of good faith and fair dealing exists between Owner and Contractor, now, in the future, nor at any time in the past. The Owner shall not have the right to control the day to day activities of how the Contractor performs the work, being interested only in the results to be achieved.

7. ASSIGNMENT AND SUBCONTRACTING:

The Contractor shall not assign or subcontract the work or any part thereof, without the previous written consent of the Owner, nor shall he assign, by power of attorney or otherwise, any of the money payable under this contract unless written consent of the Owner has been obtained. No right under this contract, nor claim for any money due or to become due hereunder shall be asserted against the Owner, or person acting for the Owner, by reason of any so called assignment of this contract or any part thereof, unless such assignment has been authorized by the written consent of the Owner. In case the Contractor is permitted to assign moneys due or to become due under this contract, the instrument of assignment shall contain a clause subordinating the claim of the assignee to all prior liens for services rendered

or materials supplied for the performance of the work.

Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, his subcontract shall be immediately terminated by the Contractor upon notice from the Owner. The Contractor shall be as of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him. Nothing contained in this contract shall create any contractual relationship between any subcontractor and the Owner.

It is the intent of these specifications that the Contractor shall perform the majority of the work with his own forces and under the management of his own organization. Only subcontractors who have been listed in the proposal and who are accepted by the Owner as provided in the General Conditions may subcontract specific portions of the work. All subcontractors shall be directly responsible to the Contractor and shall be under his general supervision. All work performed under subcontracts shall be subject to the same contract provisions as the work performed by the contractor's own forces.

This Contract is considered personal between the Contractor and Owner therefore, any sale of more than 50% ownership of Contractor shall be considered as an assignment.

All subcontractors must register with the City of Lancaster before performing any work.

8. ORAL STATEMENTS:

It is understood and agreed that the written terms and provisions of this agreement shall supersede all oral statements of representatives of the Owner, and oral statements shall not be effective or be construed as being a part of the contract.

9. REFERENCE STANDARDS AND LAWS AND REGULATIONS:

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative standard adopted and published at the date of taking bids, unless specifically stated otherwise.

The Contractor shall keep itself fully informed of, and shall observe and comply with, all laws, ordinances, and regulations which, in any manner, affect those engaged or employed on any work, or the materials and equipment used in any work or in any way affect the performance of any work, and of all orders and decrees of bodies or tribunals having jurisdiction or authority over work performed under the contract. If any discrepancy or inconsistency should be discovered between the contract and any such law, ordinance, regulation, order or decree, the Contractor shall immediately report the same in writing to the Owner. The Contractor shall be responsible for the compliance with the above provisions by subcontractors of all tiers.

Except as otherwise specified, the Owner waives all fees except the Contractor registration fees and inspection overtime fees. the Contractor shall furnish any bonds, insurance, security or deposits required to permit performance of its work hereunder.

- (a) OSHA: all work and job site conditions shall, at all times, adhere to the requirements of the latest provisions of the Occupational Safety and Health Act.
- (b) REQUIREMENTS AND CODES: Wherever references are made in the contract to requirements or codes in accordance with which work is to be performed or tested, the addition or revision of the requirements or codes current on the date of this contract shall apply, unless otherwise expressly set forth. Unless otherwise specified, reference to such requirements or codes is solely for technical information.

This contract shall be governed by the laws of the State of Texas and by such federal laws as may be applicable.

The parties agree that all claims, disputes, and other matters in question between the Contractor and the Owner arising out of or pertaining to the contract documents or the breach thereof, shall, except as otherwise expressly provided, be decided solely in the Courts of the State of Texas, in the County of Dallas.

Interest, if any, allowable on the claims of either party shall be at the current rate for judgments in the Courts of the State of Texas.

10. CONTRACTOR TO CHECK DRAWINGS AND SCHEDULES:

The Contractor shall check all dimensions, elevations, and quantities indicated on the drawings and schedules furnished to him by the Owner. The Contractor shall notify the Owner of any discrepancy between the drawings and the conditions at the site, or any error or omission in drawings, or in the layout as given by stakes points, or instructions, which he may discover in the course of work. The Contractor will not be allowed to take advantage of any error or omission in the drawings or contract documents. Full instructions will be furnished by the Owner should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

11. FIGURED DIMENSIONS TO GOVERN:

Dimensions and elevations indicated on the drawings shall be accurately followed even though different from scaled measurements. No work indicated on the drawings, the dimensions of which are not indicated, shall be executed until necessary dimensions have been obtained from the Owner.

12. NO WAIVER OF RIGHTS:

Neither the inspection by the Owner or any of their officials, employees, or agents, nor any order by the Owner for payment of money, or any payment for, or acceptance of, the whole or any part of the work by the Owner, nor any extension of time, nor any possession taken by the Owner or its employees, nor any action of the Owner shall operate as a waiver of any provision of this contract, or of any power herein reserved to the Owner, or of any right to damages herein, provided nor shall any waiver of any breach in this contract be held to be a waiver of any other or subsequent breach.

13. CONTRACTOR'S SUPERINTENDENT AND EMPLOYEES:

The Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized, and financed to perform such work.

The Contractor shall act as an independent contractor maintaining complete control over its employees and all of its subcontractors. The Contractor shall perform all work in an orderly and workmanlike manner, enforce strict discipline and order among its employees and assure strict discipline and order by its subcontractors.

Before starting work, the Contractor shall designate a competent, authorized representative to represent and act with full authority for the contract and shall inform the Owner in writing of the name, address, telephone number (day and night) of such representative, and of any change in such designation. This representative shall have authority to make binding and enforceable decisions in the name of the Contractor and to accept service of all notices which the Owner desires to serve or which are required by this contract to be served on the Contractor. As an alternate, such written notices may be mailed directly to the address of that party shown on the face of the Contract Agreement form. Such representative shall be present or be duly represented at the site of work at all times when work is actually in progress and, during period when work is suspended, arrangements acceptable to the Owner shall be made for any emergency work which may be required. The Contractor's authorized representative shall

supported by competent assistants, as necessary, and the authorized representative and its assistants shall be satisfactory to the Owner. All requirements, instructions, and other communications given to the Contractor's authorized representative by the Owner shall be as binding as if given to the Contractor.

The Contractor shall employ only fully experienced and properly qualified persons to perform any work. The Contractor shall be responsible for maintaining satisfactory conduct of its employees. The Contractor's site representative shall stay on the project until final completion of the work in accordance with the contract documents.

14. ENGINEERING INSPECTION:

The Owner may appoint such inspectors, as the Owner deems proper to inspect the materials furnished and the work performed for compliance with the drawings and specifications. The Contractor shall furnish all reasonable assistance required by the Owner, or inspectors, for the proper inspection of the work. Should the Contractor object to any interpretation of the contract by any inspector, the Contractor may make written appeal to the Owner for a decision, but the Owner's decision shall be final.

Inspectors shall have the authority to reject work, which is unsatisfactory, faulty, or defective or does not conform to the requirements of the drawings and specifications. Inspection shall not relieve the Contractor from any obligation to construct the work strictly in accordance with the drawings and specifications. Work not so constructed shall be removed and replaced by the Contractor at his own expense.

15. RIGHT OF OWNER TO TERMINATE CONTRACT:

If the work to be done under this contract is abandoned by the Contractor; or if this contract is assigned by him without the written consent of the Owner; or if the Contractor is adjudged bankrupt, or files for voluntary bankruptcy; or if a general assignment of his assets is made for the benefit of his creditors; or if a receiver is appointed for the Contractor of any of his property or if at any time in writing to the Owner determines that the performance of the work under this contract is being unnecessarily delayed, that the Contractor is violating any of the conditions of this contract, or that he is executing the same in bad faith or otherwise not in accordance with the terms of said contract; or if the work is not substantially completed within the time named for its completion or within the time to which such completion date may be extended; then the Owner may serve written notice upon the Contractor and his surety of the Owner's intention to terminate this contract. Unless within five (5) days after the serving of such notice, a satisfactory arrangement is made for continuance, this contract shall terminate. In the event of such termination, the surety shall have the right to take over and complete the work, provided that if the surety does not commence performance within 30 days, the Owner may take over and prosecute the work to completion, by contract or otherwise. The Contractor and his surety shall be liable to the Owner for all excess cost sustained by the Owner by reason of such prosecution and completion. The Owner may take possession of, and utilize in completing the work, all materials, equipment, tools, and plant on the site of the work, including such materials, etc., as may have been placed on the site by or at the direction of the Contractor.

The Owner may, at its option, terminate the performance of the work in accordance with this section, in whole, or from time to time in part, at any time by written notice thereof the Contractor, whether or not the Contractor is in default. Upon any such termination, Contractor shall waive any claims for damages, including loss of anticipated profits, on account thereof, but as the sole right and remedy of the Contractor, the Owner shall pay Contractor in accordance with subparagraph (b) below, provided, however, that those provisions of the contract documents which by their very nature survive final acceptance under the contract documents shall remain in full force and effect after such termination.

- (a) Upon receipt of any such notice, the Contractor shall, unless the notice requires otherwise:
 - (1) Immediately discontinue work on the date and to the extent specified in the notice;
 - (2) Place no further order or subcontracts for materials, services, or facilities, other than as may be necessary or required for completion of work under the contract that is not terminated;
 - (3) Promptly make every reasonable effort to obtain cancellation upon terms satisfactory to the Owner of all order and subcontracts to the extent they relate to the performance of work terminated, or assign to the Owner those orders and subcontracts, and revoke agreements specified in such notice; and
 - (4) Assist the Owner, as specifically requested in writing, in the maintenance, protection and disposition of property acquired by the Owner under the contract.
- (b) Upon any such termination, the Owner will pay the Contractor an amount determined in accordance with the following (without duplication of any item):
 - (1) All amounts due and not previously paid to the Contractor for work completed in accordance with the contract prior to such notice, and for work thereafter completed as specified in such notice;
 - (2) The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in subparagraph (a) (3) above;
 - (3) The reasonable cost incurred pursuant to subparagraph (a) (4) above;
 - (4) Any other reasonable costs incidental to such termination of work.

The foregoing amounts will include a reasonable sum, under all of the circumstances, as profit for all work satisfactorily performed by the Contractor.

15.1 TERMINATION FOR CONVENIENCE:

Owner hereby reserves the right to terminate this Agreement without regard to fault or breach upon written notice to Contractor, effective immediately unless otherwise provided in said notice to Contractor, effective immediately unless otherwise provided in said notice. In the event of such termination, Owner shall pay as the sole amount due to Contractor in connection with the work (i) all sums due for Work performed to date including allowing profit and overhead (except retainage sums shall not be paid prior to thirty (30) days following the date of termination); and (ii) reasonable cost of termination. Such sums will be due and payable on the same conditions as set forth in this Agreement for final payment to the extent applicable. Upon receipt of such payment, the parties hereto shall have no further obligations to each other except for Contractor's obligations to perform corrective and/or warranty work and to indemnify Owner as provided for in this Agreement. It is understood and agreed that no profit, fee or other compensation shall be due or payable for unperformed work. Contractor agrees that each subcontract and purchase order issued by it will reserve for Contractor the same right of termination provided by this Section 15.1 and Contractor further agrees to require that comparable provisions be included in all lower tier subcontracts and purchase orders.

Upon a determination by any court or body that termination of Contractor, or its successor in interest, was wrongful, such termination will be deemed converted to a termination for convenience and Contractor's remedy for wrongful termination is limited to the recovery of the payments permitted for termination for convenience as set forth above.

The rights and remedies of Owner and Contractor under this Agreement shall be exclusive, and shall be in addition to all the other remedies available to such parties at

in equity, subject, however, in the case of Contractor, to the limitation contained above and other pertinent provisions of this Agreement.

16. EQUAL OPPORTUNITY:

The Contractor is aware of, and is fully informed of, the Contractor's obligations under Executive Order 11246, and, where applicable, shall comply with the requirements of such order and all orders, rules and regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR Section 60-1.4, and the clause therein entitled "Equal Opportunity Clause" which, by this reference, is incorporated herein.

The Contractor is aware of, and is fully informed of, the Contractor's responsibilities under Executive Order No. 11701, "List of Job Openings for Veterans" and, where applicable, shall comply with the requirements of such order, and all orders, rules and regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR 60-250 et seq. and the clause therein entitled "Affirmative Action Obligations of the Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era" which, by this reference is incorporated herein.

The Contractor certifies those segregated facilities, including, but not limited to, washrooms, work areas, locker rooms, are not, and will not, be maintained or provided for the Contractor's employees. Where applicable, the Contractor shall obtain similar certification from any of its subcontractors, vendors, or suppliers performing work under this contract.

The Contractor is aware of, and is fully informed of, the Contractor's responsibilities under the Rehabilitation Act of 1973, and, where applicable, shall comply with the provisions of the Act, and the regulations promulgated thereunder unless exempted there from.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR Section 60-741 and the clause entitled "Affirmative Action Obligations of the Contractors and Subcontractors for Handicapped Workers" which, by this reference, is incorporated herein. Contractor must also comply with the rules and regulations as established by the Americans with Disabilities Act of 1990.

17. BEGINNING, PROGRESS, AND COMPLETION OF THE WORK; LIQUIDATED DAMAGES:

Start Date: The time of completion is of the essence of this contract. Unless otherwise specified in these contract documents or advised by written order of the Owner, the Contractor shall begin work within 10 days after the date of contract.

Liquidated Damages: The Owner and Contractor, recognizing that calculation of damages caused by Contractor's failure to complete within the contract time are difficult to assess, hereby agree that liquidated damages shall be assessed Contractor at the rate of \$120.00 per calendar day for each day Contractor is late in completing.

It is understood that the foregoing constitutes an agreement as to minimum amount of damages only for failure to complete the work within the specified time. Should the Owner suffer damages over and above the amount specified above for any failure or negligence on the Contractor's part, other than failure to complete the work within the specified time, the Owner may recover such additional amount.

Work Schedule: A detailed construction schedule and monthly payment schedule shall be prepared by the Contractor and submitted to the Owner for review within ten (10) days of the effective beginning date of the Contract, or prior to the commencement of construction.

whichever occurs first. The schedule shall contain the various activities required to perform the work and the dates the activities will be started and completed in order to complete the work in accordance with the specified schedule requirements. The Contractor is responsible for determining the sequence and time estimates of the detailed construction activities. However, the Owner reserves the right to require the Contractor to modify any portion of the schedule the Owner determines to be impractical or unreasonable; as required to coordinate the Contractor's activities with those of other Contractors, if any, engaged in work for the Owner on the site; to avoid undue interference with the Owner's operations; and to assure completion of the work by the date or dates stipulated. Upon acceptance by the Owner of the Contractor's detailed construction schedule, the Contractor will be responsible for maintaining such schedule.

If at any time the Contractor's work is behind schedule, he shall immediately put into effect definite procedures for getting the work back on schedule. The procedures shall be subject to review and modification by the Owner. The Contractor will not be allowed extra compensation for costs (whether for costs for materials used and/or labor to be paid) incurred by him because of Contractor's accelerated operations required to maintain the schedule.

17.1 EXTENSION OF TIME FOR DELAY:

In the event the progress of the work is delayed or interrupted by occurrences or events which entitle Contractor to an extension of time pursuant to the terms of this Agreement, then the work completion date shall be extended for a period equal to the length of such delay if within seven (7) days after the commencement of any such delay, contractor delivers to Owner a written notice of such delay stating the nature thereof and within seven (7) days following the expiration of any such delay provides a written request for extension of the work completion date by reason of such delay and such request is approved by Owner, which approval shall not be unreasonably withheld. Failure to deliver any such notice or request within the required period shall constitute an irrevocable waiver of any extension of the previously scheduled work completion date by reason of the cause in respect of which such notice and request were required to make only one such request with respect thereto. No extension of the previously scheduled work completion date (or right on the part of Contractor to secure any such extension) pursuant to this Section shall prejudice any right Owner may have under this Agreement, or otherwise, to terminate this Agreement.

Extension of time shall be Contractor's sole remedy for any such delay (except for Contractor's right to terminate this Agreement pursuant to the terms and provisions hereinafter set forth), unless the same shall have been caused by acts constituting intentional interference by Owner with Contractor's performance of the work and where to the extent that such acts continue after Contractor's notice to Owner of such interference. Owner's exercise of any of its rights to order changes in the work pursuant to this contract, regardless of the extent of number of such changes, or Owner's exercise of any of its remedies of suspension of the work, or requirement or correction or re-execution of any defective work, shall not under any circumstances be construed as intentional interference with Contractor's performance of the work.

18. HINDRANCES AND DELAYS:

The Contractor expressly agrees that the period of time stated in the proposal to complete all work includes allowance for all hindrances and delays incident to the work. The Contractor further agrees that no claims shall be made for hindrances and delays from any cause during the performance of the work, except as specifically provided for in the articles SUSPENSION OF WORK and EXTENSIONS OF TIME in these General Conditions.

18.1 RESEQUENCING OR ACCELERATION:

In the event Contractor shall fall behind schedule at any time, for any reason, Owner sh

entitled to direct acceleration or resequencing of the work to bring the work back on schedule. In the event Contractor determines that the previously scheduled work completion date cannot be met by resequencing the work, then Contractor shall immediately provide to Owner, and in any event within seven (7) days after the date of receipt of any request by Owner for resequencing or acceleration, a plan to complete the work in the shortest possible time. No approval by the Owner of any plan for resequencing or acceleration of the work submitted by Contractor pursuant to this paragraph shall constitute a waiver by Owner of any damages or losses which Owner may suffer by reason of such resequencing or the failure of Contractor to meet the declared new scheduled completion date.

Owner shall additionally be entitled to direct the acceleration or resequencing of the work in order to achieve completion prior to the declared new scheduled completion date and Contractor shall be reimbursed by Owner for the amount of labor overtime actually incurred in respect thereto and shall be entitled to an increase adjustment the contract price to the extent of the labor portion of overtime so incurred.

19. SUSPENSION OF WORK:

The Owner reserves the right to suspend and reinstate execution of the whole or any part of the work without invalidating the provisions of the contract. Orders for suspension or reinstatement of work will be issued by the Owner to the Contractor in writing. The time for completion of the work will be extended for a period equal to the time lost by reason of the suspension.

The Owner will pay extra costs and expenses, which are caused by work suspensions ordered by the Owner, to the Contractor.

20. EXTENSIONS OF TIME:

Should the Contractor be delayed in the final completion of the work by any act or neglect of the Owner, or of any employee of either, or by any other Contractor employed by the Owner, or by strike, fire, regulatory agencies or other cause outside of the control of the Contractor and which, in the opinion of the Owner, could have been neither anticipated nor avoided, then an extension of time sufficient to compensate for the delay, as determined by the Owner, will be granted by the Owner; provided that the Contractor gives the Owner notice in writing within 10 days of the cause of delay in each case and demonstrates that he has used all reasonable means to minimize the delay.

Extensions of time will not be granted for delays caused by unfavorable weather, unsuitable ground conditions, inadequate construction force, or the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure delivery when needed.

Failure of Owner furnished equipment and materials to arrive as scheduled, or failure of other construction Contractors to meet their schedule, shall not be justification for an extension of time, except where such failure causes, in the opinion of the Owner, an actual delay in the Contractor's work.

21. EXTRA OR CHANGE ORDER WORK:

If a modification increases the amount of the work, and the added work or any part thereof is a type and character which can properly and fairly be classified under one or more unit price items of the Proposal listed in the Scope of Work section of this contract, then the added work or part thereof shall be paid for according to the amount actually done and at the applicable unit price. Otherwise, such work shall be paid for as hereinafter provided.

Claims for extra work will not be paid unless the work covered by such claims was authorized in writing by the Owner. The Contractor shall not have the right to prosecute or maintain an action in court to recover for extra work unless the claim is based upon a written order from

Owner. Payments for extra work will be based on agreed lump sums or on agreed unit prices as listed in the Scope of Work section of the contract whenever the Owner and the Contractor agree upon such prices before the extra work is started; otherwise, payments for extra work will be based on actual field cost plus the specified percentage allowance.

For the purpose of determining whether proposed extra work will be authorized, or for determining the payment method for extra work, the Contractor shall submit to the Owner, upon request, detailed cost estimate for proposed extra work. The Change Order Request shall indicate itemized quantities and charges for all elements of direct cost. Charges for the Contractor's subcontractor's extra profit, extra general superintendence, extra field office expense, and extra overheads shall be indicated as a percentage addition to the total estimated net cost. Unless otherwise agreed upon by the Contractor and the Owner, such percentage additions shall be 15 percent for the extra work performed by the Contractor's own forces or 20 percent for extra work performed by a subcontractor.

Further, the Change Order Request shall also include a suitable breakdown by trades and work classifications, Contractor's estimate of the changes in the cost of the work attributable to the changes set forth in such Change Order Request, a proposed adjustment to the scheduled completion date resulting from such Change Order Request, and any proposed adjustments of time and costs related to unchanged work resulting from such Change Order Request. If Owner approves in writing such estimate by Contractor, such Change Order Request and such estimate shall constitute a Change Order, and the cost of the contract price and previously scheduled work completion date shall be adjusted as set forth in such estimate. Change Orders shall not cause any modification to Contractor's fee except as specifically set forth herein, it being understood and agreed that Contractor will receive no fee based on the increased cost of the work resulting from Change Orders unless the new work requested is beyond the scope of the work, and then only to the extent thereof pursuant to the terms of this contract. Contractor shall include in each subcontract a limitation on the amount of profit and overhead, which subcontractors can include in Change Orders, which limitation will be subject to the approval of Owner. Agreement on any Change Order shall constitute a final settlement on all items covered therein, subject to performance thereof and payment therefore pursuant to the terms of this Agreement.

When payment for extra work is based on actual field cost, the Contractor will be paid the actual field cost plus an allowance of 15 percent if the extra work is performed by the Contractor's own forces or 20 percent if the extra work is performed by a subcontractor. The allowance will be paid as full compensation for the Contractor's and subcontractors extra profit, extra general superintendence, extra field office expense, extra overheads, and all other elements of extra cost not defined herein as actual field cost.

The actual field cost shall include only those extra costs for labor and materials expended in direct performance of the extra work. The form in which actual field cost records are kept, the construction methods, and the type and quantity of equipment used shall be acceptable to the Owner.

Construction equipment which the Contractor has on the job site and which is of a type and size suitable for use in performing the extra work shall be used. The hourly rental charges for equipment shall not exceed one-half of one percent of the latest applicable Associated Equipment Distributors published monthly rental rates and shall apply to only the actual time the equipment is used in performing the extra work.

When extra work requires the use of equipment, which the Contractor does not have on the job site, the Contractor shall obtain the occurrence of the Owner before renting or otherwise acquiring additional equipment. The rental charges for the additional equipment shall not exceed the latest applicable Associated Equipment Distributors published rental rates.

21.1 DECREASED WORK

If a modification decreases the amount of work to be done, such decrease shall not constitute the basis for a claim for damages or anticipated profits on work affected by such decrease. Where the value of omitted work is not covered by applicable unit prices, the Owner shall determine on an equitable basis the amount of (a) credit due the Owner for contract work not done as a result of an authorized change, (b) allowance to the Contractor for any actual loss incurred in connection with the purchase, delivery, and subsequent disposal of materials or equipment required for use on the work as planned and which could not be used in any part of the work as actually built, and (c) any other adjustment of the contract amount where the method to be used in making such adjustment is not clearly defined in the contract documents.

Unless otherwise agreed upon by the Owner and the Contractor, the credit due the Owner for reductions in the amount of work to be done shall be the estimated field cost of the deleted work plus an overhead allowance of:

Ten percent of the estimated field cost if the work was to have been done by the Contractor's own forces, or;

Fifteen percent of the estimated field cost if the work was to be done by a subcontractor.

Field cost referred to above shall include the category of costs listed as actual field costs, items (a) to (f) inclusive of the article entitled EXTRA WORK.

22. PROTECTION OF WORK AND PROPERTY:

The Contractor shall be responsible for and shall bear any and all risk of loss of, or damage to work in progress, all materials delivered to the site, and all materials, tools, and equipment until completion and final acceptance of the work to be performed under this contract.

The Contractor shall promptly take all precautions which are necessary and adequate against any conditions created during the progress of the Contractor's activities hereunder which involve a risk of bodily harm to persons or a risk of damage to any property. Contractor shall continuously inspect all work, materials and equipment to discover and determine, and shall be solely responsible for discovery, determination and correction of any conditions which involve a risk of bodily harm to persons or damage to property.

The Contractor shall comply with all applicable safety laws, standards, codes and regulations in the jurisdiction where the work is being performed specifically but without limiting the generality of the foregoing and regardless of any exemptions provided by law, with all rules, regulations and standards adopted pursuant to the Occupational Safety and Health Act of 1970.

The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of work which is not to be removed and which does not unreasonably interface with the construction work. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. The Contractor will protect from damage all existing improvements, utilities, roads, and bridges at or near the site of work and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this contract or the failure to exercise reasonable care in the performance of the work. Under no circumstances will county or township roads and bridges be subject to greater than normal highway truck loadings.

The Contractor shall provide and maintain such temporary work as is required for the protection of the public and those employed in or about the work site, including all signs, guards, barricades, night lights and any other temporary protection as may be necessary.

Contractor shall provide and maintain such temporary work as is required for protection of finished work, including building paper, boxing, planking, protective coating, and such other protection as may be deemed necessary by the Owner. All such work shall be returned to original condition by the Contractor on completion of the contract.

Whenever necessary to maintain proper temperatures for performance of work, or to protect or to close in work in place, Contractor shall provide and maintain temporary enclosures as directed by the Owner for all openings or exterior surfaces that are not enclosed with finishing materials.

The Contractor shall protect all the work including buildings, structures, equipment, excavations, trenches, etc. from water damage including damage by rainwater, ground water, backing-up of drains, downspouts of sewers and shall construct and maintain all necessary drainage and do all pumping required to protect or to perform the work. Contractor shall provide protection to any equipment in place, as required to prevent damage by moisture. Contractor, in general, shall at all times carefully protect the work, materials, and equipment against damage from the weather, and comply with the directions of the Owner in order to avoid any adverse effect on the project from weather conditions.

The Contractor assumes all liability for its failure to comply with the provisions of this Article. The Contractor shall include this Article in its entirety in all subcontracts for any work at the project site.

Upon the failure of the Contractor or its subcontractors to comply with any of the requirements of the Article, the Owner shall have the authority to stop any operations of the Contractor or its subcontractors affected by such failure until such failure is remedied. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for increased costs or damages by the Contractor or its subcontractors.

23. SAFETY:

The Contractor shall at all times conduct all operations under the Contractor in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall promptly take all precautions, which are necessary and adequate against any conditions, which involve a risk of bodily harm to persons or a risk of damage to any property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for discovery, determination and correction of any such conditions. The Contractor shall designate an employee as safety supervisor who is acceptable to the Owner.

The Contractor shall comply with all applicable laws, regulations and standards. The Contractor shall coordinate with other Contractors and subcontractors on safety matters and shall promptly comply with any specific safety directions given to the Contractor by the Owner.

The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazard, promulgating safety regulations and notifying the Owner and users of adjacent properties and utilities.

The Contractor shall maintain a Safety Program with detail commensurate with the work to be performed. Such review shall not relieve the Contractor of its responsibility for safety, nor shall it be construed as limiting in any manner the Contractor's obligation to undertake any action which may be necessary or required to establish and maintain safe working conditions at the site.

The Contractor shall maintain accurate accident and injury reports.

The Contractor shall hold regular scheduled meetings to instruct its personnel on

practices. The Contractor shall furnish safety equipment and enforce the use of such equipment by its employees.

All equipment furnished and installed on this project shall be manufactured and installed in accordance with the applicable parts of the Williams-Steiger Occupational Safety and Health Act of 1970, and its subsequent amendments and revisions. All work shall be performed in accordance with the regulations and requirements of the above noted Act, revisions and amendments.

24. TAXES, PERMITS AND LICENSES:

The Contractor shall obtain and pay for all licenses, permits, and inspections required for the work.

The Contractor shall pay all appropriate sales taxes, excluding materials permanently retained by the City of Lancaster franchise taxes, income taxes, gross receipts taxes, and other business or occupation taxes imposed upon the Contractor.

25. PATENTS:

Royalties and fees for patents covering materials, articles, apparatus, devices, equipment, or processes used in the work, shall be included in the contract amount. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he shall be liable for any damages or claims for patent infringements. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted against the Owner for alleged infringement of any patents involved in the work and, in case of an award of damages, the Contractor shall pay such award. Final payment to the Contractor by the Owner will not be made while any such suit or claim remains unsettled.

In the event the Contractor is found to have infringed a patent, the Contractor shall either replace the part or process with a non-infringing part or process approved by the Owner, or secure the right to use the infringing part or process. Either choice shall be at the Contractor's expense.

26. MATERIALS AND EQUIPMENT:

Unless specifically provided otherwise in each case, all materials and equipment furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused, and undamaged when installed or otherwise incorporated in the work. No such material or equipment shall be used by the Contractor for any purpose other than that intended or specified, unless such use is specifically authorized by the Owner in each case.

27. GUARANTEE:

Contractor shall guarantee that all products are in accordance with the manufacture's guarantees, warranties, or Policies. Any replacement of defective material or materials will be made in accordance with such guarantee or warranty policies but, in any case, responsibility ends with the replacement of the defective part or parts, and no responsibility will be assumed for unauthorized repair or replacement of said equipment. Nor any expense will be incurred due to failure of said equipment excepting replacement of its defective part or parts by the manufacturer and in accordance with said manufacturer's policies.

Contractors warranty against defects in material and workmanship shall extend two years from the date of final payment.

28. DEFENSE OF SUITS:

In case any action in court is brought against the Owner, or any officer or agent of the Owner, for the failure, omission, or neglect of the Contractor to perform any of the covenants

matters, or things by this contract undertaken; or for injury or damage caused by the alleged negligence of the Contractor or his subcontractors or his or their agents, or in connection with any claim based on lawful demands of subcontractors, workmen, materials, or suppliers the Contractor shall indemnify and save harmless the Owner and his officers and agents, from all losses, damages, costs, expenses, judgments, or decrees arising out of such action.

29. PATENT INDEMNITY:

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified. But, if the Contractor has reason to believe that the design, process, or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner.

30. INDEMNITY AND RELEASE:

The Contractor is solely responsible for and shall defend, indemnify, and hold Owner (or any of Owner's representatives or employees), free and harmless from and against any and all claims, liabilities, demands, losses, damages, costs or expense to all persons (including but not limited to reasonable attorneys' fees) arising out of resulting from or occurring in connection with the performance of the work that is (i) attributable to any bodily or personal injury, sickness, diseases or death of any person or any damage or injury to or destruction of real or personal property (other than the work itself) including the loss of use thereof, and (ii) caused in whole or in part by any negligent, strict liability or other act or omission of contractor, any subcontractor or supplier, their respective agents or employees or any other party for whom any of them may be liable regardless of whether such is caused in part by the negligent, strict liability or other act or omission of a party or parties indemnified hereunder.

Said indemnity and hold harmless agreement shall also apply to claims arising from accidents to contractor, its agents or employees, whether occasioned by contractor or its employees, the owner or his employees, or by any other person or persons.

The foregoing indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

31. FINAL PAYMENT AND RELEASE:

Acceptance by the Contractor of last payment shall be a release to the Owner and every officer and agent thereof, from all claims and liability hereunder for anything done or furnished for, or relating to the work, or for any act or neglect of the Owner or of any person relating to or affecting the work.

32. INSPECTION:

The Owner shall have the right, without extra charge therefore; to inspect all materials and equipment supplied under this contract at any time, including the place of manufacture, either during performance of the work, on final inspection, or during any applicable warranty period. The Owner or its designated representative shall have the right to reject equipment, materials and work not complying with the requirements of this contract. The Owner shall notify the Contractor in writing that such equipment, material or work is rejected. Thereupon, rejected work shall be satisfactorily corrected, rejected equipment shall be satisfactorily repaired or replaced with satisfactory equipment, and rejected material shall be satisfactorily replaced with satisfactory material, all in accordance with the contract, and the Contractor shall promptly segregate and remove rejected materials and equipment from the premises. All

correcting, repairing, replacing, and removing shall be by and at the expense of the Contractor.

The Owner will perform inspections in such a manner so as not to delay the work unreasonably, and the Contractor shall perform its work in such a manner as not to delay inspection unreasonably.

33. FINAL INSPECTION:

When the work has been completed and at a time mutually agreeable to the Owner and Contractor, the Owner will make a final inspection of the work as to the acceptability and completeness of the work.

34. CLAIMS FOR LABOR AND MATERIALS:

The Contractor shall pay all subcontractors and other persons furnishing labor or materials for the work from the contract amount. The Contractor is aware of, and is fully informed of the Contractor's responsibility under article 601f V.T.C.S. pertaining to payments for goods and services contracted for by State agencies or political subdivisions, applies to construction contracts. The Contractor shall be responsible for payment to vendors and subcontractors in accordance with Chapter 2251, Texas Government Code. No third party shall have any contractual privity with the Owner. The Contractor shall indemnify and save harmless the Owner from all claims for labor and materials furnished under this contract. When requested by the Owner, the Contractor shall submit satisfactory evidence that all persons, firms, or corporations who have done work or furnished materials under this contract, for which the Owner may become legally liable, have been fully paid or satisfactorily secured. In case such evidence is not furnished or is not satisfactory, an amount will be retained money due the Contractor which in addition to any other sums that may be retained will be sufficient, in the opinion of the Owner, to liquidate all such claims. Such sum will be retained until the claims as aforesaid are fully settled or satisfactorily secured.

Before final acceptance of the work by the Owner, the Contractor shall submit to the Owner in duplicate a notarized affidavit stating that all subcontractors, vendors, persons, or firms who have furnished labor or materials for the work have been fully paid and that all taxes have been paid. A statement from the surety shall also be submitted consenting to the making of the final payment.

35. PAYMENTS:

On or about the first day of each month the Contractor shall make an estimate of the value of the work completed and of unused materials stored on the site. The Contractor and the Owner shall review the estimate prior to submitting the formal invoice to the Owner. The estimated cost of repairing, replacing, or rebuilding any part of the work or replacing materials which do not conform to the drawings and specifications will be deducted from the estimated value by the Owner.

The Contractor shall furnish to the Owner such detailed information as he may request to aid in the preparation of monthly ~~estimate~~/Invoice. After each ~~estimate~~-Invoice has been found acceptable, the Owner will process and pay such invoices within 30 days to the Contractor ~~less five (5%) percent retainage for all projects over \$400,000 and less ten (10%) percent for projects under \$400,000 in accordance with Chapter 2252.33, Texas Government Code. 90% (100% less 10% retainage) of the estimated value less any previous payments.~~ The Contractor shall be responsible for payment to ~~vendors~~ suppliers and subcontractors ~~within fifteen (15) days~~ accordance with Chapter 2251, Texas Government Code and the City's Purchasing Policy, Section 4.

Payments for materials stored on the site shall be based only upon the actual costs of

materials to the Contractor and shall not include any overhead or profit to the Contractor.

After official acceptance of the work, the Owner will prepare a final estimate of the work done under this contract. Preparation of the final estimate will not be made until the affidavit and statement required in the article entitled CLAIMS FOR LABOR AND MATERIALS have been received. The Owner will, within 30 days thereafter, pay the entire balance due after deducting all amounts to be retained under any provision of this contract.

Payments to the contractor involving federal funding will require the contractor to submit a copy of the current wage rate for that project with each request for payment.

36.1 PAYMENT WITHOLDING:

Payments may be withheld by Owner for (1) defective work not remedied, (2) claims filed by third parties, (3) failure of the Contractor to make payments properly to subcontractors or for labor, materials or equipment, (4) reasonable evidence that the work cannot be completed for the unpaid balance of the contract price, (5) damage to the Owner or another contractor, (6) reasonable evidence that the work will not be completed by the scheduled work completion date and that the unpaid balance of the contract price would not be adequate to cover actual or liquidated damages for the anticipated delay, (7) persistent failure to carry out the work in accordance with the Contract Documents, (8) retainage as described in Chapter 2252 of the Texas Government Code, or (9) statutory retainage as described in Chapter 53 of the Texas Property Code.

37. LIENS:

Neither the Contractor, nor any of his subcontractors, workers or suppliers shall have the right of lien against the work performed under this contract, or any property of the Owner to secure payment for labor and materials.

38. STATE LAW:

This contract is performable in the State of Texas and shall be governed by the laws of the State of Texas. Venue on any suit hereunder shall be in Dallas County, Texas.

YES	NO	CONSTRUCTION BULLETIN BOARD CHECKLIST –Must post current
<input type="checkbox"/>	<input type="checkbox"/>	EEO Policy Poster (English and Spanish) OFCCP 1420 http://www.dol.gov/ofccp/regs/compliance/posters/ofccpost.htm
<input type="checkbox"/>	<input type="checkbox"/>	Minimum Wage Poster English, WH 1088 http://www.dol.gov/whd/regs/compliance/posters/flsa.htm
<input type="checkbox"/>	<input type="checkbox"/>	Minimum Wage Poster Spanish, WH 1088 Sp http://www.dol.gov/whd/regs/compliance/posters/flsaspan.htm
<input type="checkbox"/>	<input type="checkbox"/>	Wage Rate Information Poster (English, FHWA 1495) (Spanish, FHWA 1495A – Not available at this time) http://www.fhwa.dot.gov/programadmin/contracts/fhwa1495.cfm
<input type="checkbox"/>	<input type="checkbox"/>	Davis Bacon Poster – Government Construction (WH 1321) http://www.dol.gov/whd/regs/compliance/posters/davis.htm
<input type="checkbox"/>	<input type="checkbox"/>	Employee Polygraph Poster (English, WH 1462) http://www.dol.gov/whd/regs/compliance/posters/eppa.htm
<input type="checkbox"/>	<input type="checkbox"/>	Employee Polygraph Poster (Spanish, WH 1482 Espanol) http://www.dol.gov/whd/regs/compliance/posters/eppaspan.htm
<input type="checkbox"/>	<input type="checkbox"/>	Falsified Statement Poster (English, FHWA 1022) http://www.fhwa.dot.gov/programadmin/contracts/fhwa1022.cfm
<input type="checkbox"/>	<input type="checkbox"/>	*Family & Medical Leave Act (English, WH 1420) http://www.dol.gov/whd/regs/compliance/posters/fmla.htm
<input type="checkbox"/>	<input type="checkbox"/>	*Family & Medical Leave Act (Spanish, WH 1420SP) http://www.dol.gov/esa/whd/regs/compliance/posters/fmlaspan.htm
<input type="checkbox"/>	<input type="checkbox"/>	*Notice of Workers with Disabilities Paid at Special Minimum Wages English – WH 1284 http://www.dol.gov/whd/regs/compliance/posters/disabc.pdf
<input type="checkbox"/>	<input type="checkbox"/>	*Notice of Workers with Disabilities Paid at Special Minimum Wages Spanish – WH 1284SP http://www.dol.gov/whd/regs/compliance/posters/disabspanc3p.pdf
<input type="checkbox"/>	<input type="checkbox"/>	Job Safety and Health Poster (English, OSHA 3165) http://www.osha.gov/Publications/poster.html
<input type="checkbox"/>	<input type="checkbox"/>	Job Safety and Health Poster (Spanish, OSHA 3167) http://www.osha.gov/Publications/osha3167.pdf
<input type="checkbox"/>	<input type="checkbox"/>	***Texas Payday Law Poster (TWC, English) http://www.twc.state.tx.us/ui/lablaw/posters.html
<input type="checkbox"/>	<input type="checkbox"/>	***Texas Payday Law Poster (TWC, Spanish) http://www.twc.state.tx.us/ui/lablaw/posters.html
<input type="checkbox"/>	<input type="checkbox"/>	Workers' Compensation Poster (TX Workers' Compensation Commission – Rule 110.101) http://www.tdi.state.tx.us/forms/dwc/notice6.pdf http://www.tdi.state.tx.us/forms/dwc/notice5s.pdf
		Hazard Communication Program Notice http://www.dshs.state.tx.us/tiertwo/pdf/NoticeEng.PDF http://www.dshs.state.tx.us/tiertwo/pdf/NoticeSpan.pdf
<input type="checkbox"/>	<input type="checkbox"/>	Prime Contractor EEO policy statement (includes designation of the company EEO officer, minority referral statement, and company training program policy)
<input type="checkbox"/>	<input type="checkbox"/>	**Name and phone number of EEO Officer – provided by the Prime Contractor
<input type="checkbox"/>	<input type="checkbox"/>	Project Wage Rates (obtained from the Project Contract – specific to each job)
<input type="checkbox"/>	<input type="checkbox"/>	Emergency Telephone Number Notification – developed by the Contractor (per OSHA reg.1926.50)
<p>*May be included on the EEO Poster. **May be included in the Company EEO policy statement.</p> <p>***Firm name, address and account number should be listed on this poster.</p> <p>****ARRA Projects ONLY</p>		
The SW3P items listed below may be posted on the bulletin board. The SW3P items must be visible to the public at all times on the project site. Therefore, these items may require posting in a different location.		
<input type="checkbox"/>	<input type="checkbox"/>	STORM WATER POLLUTION PREVENTION Paperwork N.O.I. and Large Construction Site Notice (disturbing 5+ acres) Small Construction Site Notice (disturbing 1 to 4.99 acres)
<input type="checkbox"/>	<input type="checkbox"/>	****Whistleblower Protection under the Recovery Act http://www.oig.dot.gov/recovery/whistleblower_protections.jsp

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01 29 00 PAYMENT PROCEDURES

1.00 NOTE TO SPECIFIER: VERIFY ALL REFERENCES TO PARAGRAPHS WITHIN THIS SECTION, TO OTHER SECTIONS OF THE SPECIFICATIONS, AND TO ANY OTHER APPLICABLE STANDARDS OR SOURCES OF INFORMATION.

1.00 GENERAL

1.01 WORK INCLUDED

- A. Payments for Work shall conform to the provisions of the General Conditions, the Supplementary Conditions, the Agreement, and this Section. Apply provisions for payments in the Section to all Subcontractors and Suppliers.
- B. Submit Applications for Payment at the amounts indicated in the AgreementAgreement:
 - 1. Amounts for each item in the Agreement shall include but not be limited to cost for:
 - a. Mobilization, demobilization, cleanup, bonds, and insurance.
 - b. Professional services including but not limited to engineering and legal fees.
 - c. The products to be permanently incorporated into the Project.
 - d. The products consumed during the construction of the Project.
 - e. The labor and supervision to complete the Project.
 - f. The equipment, including tools, machinery, and appliances required to complete the Project.
 - g. The field and home office administration and overhead costs related directly or indirectly to the Project.
 - h. Any and all kinds, amount or class of excavation, backfilling, pumping or drainage, sheeting, shoring and bracing, disposal of any and all surplus materials, permanent protection of all overhead, surface or underground structures; removal and replacement of any poles, conduits, pipelines, fences, appurtenances and connections, cleaning up, overhead expense, bond, public liability and compensation and property damage insurance, patent fees, and royalties, risk due to the elements, and profits, unless otherwise specified.
 - 2. Provide Work not specifically set forth as an individual payment item but required to provide a complete and functional system. These items are a subsidiary obligation of the Contractor and are to be included in the Cost of Work.
 - 3. Payment will be made for materials on hand.
 - a. Store materials properly on-site per Section 01 31 00 "Project Management and Coordination."
 - 1). Payment will be made for the invoice amount less the specified retainage.
 - 2). Provide invoices at the time materials are included on the materials-on-hand tabulation.

- b. Provide documentation of payment for materials-on-hand with the next payment request. Adjust payment to the amount actually paid if this differs from the invoice amount. Remove items from the materials on hand tabulation if this documentation is not provided so payment will not be made.
 - c. Payment for materials-on-hand is provided for the convenience of the Contractor and does not constitute acceptance of the product.
4. The Work covered by progress payments becomes the property of the Owner at the time of payment.

1.02 SCHEDULE OF VALUES AND PAYMENTS

- A. Submit a detailed Schedule of Values for the Work to be performed on the Project.
- 1. Submit schedule within 10 days prior to submitting the first Application for Payment.
 - 2. Line items in the Agreement are to be used as line items in the schedule.
 - 3. Payment will be made on the quantity of Work completed per Contract Documents during the payment period and as measured per this Section.
 - a. Payment amount is the Work quantity measured multiplied by the unit prices for that line item in the Agreement.
 - b. Payment on a unit price basis will not be made for Work outside finished dimensions shown in the Contract Documents.
 - c. Partial payments will be made for lump sum line items in the Agreement.
 - 1). Lump sum line items in the Agreement are to be divided into smaller unit prices to allow more accurate determination of the percentage of the item that has been completed.
 - a). Provide adequate detail to allow more accurate determination of the percentage of Work completed for each item.
 - b). Provide amounts for items that do not exceed \$50,000.00. An exception may be made for equipment packages that cannot be subdivided into units or subassemblies.
 - c). Separate product costs and installation costs.
 - (1). Product costs include cost for product, delivery and unloading costs, royalties and patent fees, taxes, and other cost paid directly to the Subcontractor or Supplier.
 - (2). Installation costs include cost for the supervision, labor and equipment for field fabrication, erection, installation, start up, initial operation and overhead and profit.
 - d). Lump sum items may be divided into an estimated number of units.
 - (1). The estimated number of units times the cost per unit must equal the lump sum amount for that line item.
 - (2). Payment will be made for all of the lump sum line item amount.

- e). Include a directly proportional amount of overhead and profit for each line item.
 - f). Divide principal subcontract amounts into an adequate number of line items to allow determination of the percentage of Work completed for each item.
- 2). These line items may be used to establish the value of Work to be added or deleted from the Project.
- 3). Correlate line items with other administrative schedules and forms:
 - a). Progress schedule.
 - b). List of Subcontractors.
 - c). Schedule of allowances.
 - d). Schedule of alternatives.
 - e). List of products and principal Suppliers.
 - f). Schedule of Submittals.
- 4). Costs for mobilization shall be listed as a separate line item and shall be actual cost for:
 - a). Bonds and insurance.
 - b). Transportation and setup for equipment.
 - c). Transportation and/or erection of all field offices, sheds and storage facilities.
 - d). Salaries for preparation of submittals required before the first Application for Payment.
 - e). Salaries for field personnel assigned to the Project related to the mobilization of the Project.
 - (1). Mobilization may not exceed 53 percent of the total Contract Price Amount[**Contract amount**]. Cost for mobilization may be submitted only for Work completed.
- 5). The sum of all values listed in the schedule must equal the total Contract Price.
- 4. Submit a schedule indicating the anticipated schedule of payments to be made by the Owner. Schedule shall indicate:
 - a. The Application for Payment number.
 - b. Date the request is to be submitted.
 - c. Anticipated amount of payment to be requested.
- 5. Update the Schedule of Values quarterly or more often if necessary to provide a reasonably accurate indication of the funds that the Owner will need to have available to make payment to the Contractor for the Work performed.
- B. Provide written approval of the Schedule of Values, Application for Payment form, and method of payment by the Surety Company providing performance, and bonds prior to

submitting the first Application for Payment. Payment will not be made without this approval.

1.03 PAYMENT PROCEDURES

- A. Submit Applications for Payment per the procedures indicated in Section 01 33 00 "Submittal Procedures." Submit a Schedule of Values in the Application for Payment format to be used.
- B. Applications for Payment may be submitted on an approved form provided by the Owner. pre-printed form as indicated in Section 01 31 13.13 "Forms" or may be generated by computer. Computer generated payment requests must have the same format and information indicated in the pre-printed form and be approved by the Engineer.
- C. Indicate the total Contract Price and the Work completed to date on the Tabulation of Values for Original Contract Performed (Attachment "A.").
- D. Include only approved Change Order items in the Tabulation of Extra Work on Approved Change Orders (Attachment "B.").
- E. List all materials on hand that are presented for payment on the Tabulation of Materials on Hand (Attachment "C.") Once an item has been entered on the tabulation it is not to be removed.
- F. Include the Project Summary Report (Attachment "D") with each Application for Payment. Data included in the Project Summary Report are to be taken from the other tabulations. Include a completed summary as indicated in with each Applications for Payment submitted.
- G. Number each application sequentially and indicate the payment period. Revised Applications for Payment will be resubmitted as A, B, C and so forth to note changes in content.
- H. Show the total amounts for value of original Contract performed, extra Work on approved Change Orders, and materials on hand on the Project Summary Report. Show total amounts that correspond to totals indicated on the attached tabulation for each.
- I. Note the number of pages in tabulations in the blank space on the Project Summary Report to allow a determination that all sheets have been submitted.
- J. Execute Contractor's certification by the Contractor's agent of authority and notarize for each Application for Payment.
- K. Do not alter the Schedule of Values and the form for the submission of requests without the written approval of the Engineer once these have been approved by the Engineer.
- L. Final payment requires additional procedures and documentation per Section 01 70 00 "Execution and Closeout Requirements."
- C. Progress payments shall be made as the Work progresses on a monthly basis and will be completed in accordance with the Owner's procedures.
- N. End the payment period on the day indicated in the Agreement and submit an Application for Payment for Work completed and materials received since the end of the last payment period.

- O. At the end of the payment period, submit a draft copy of the Application for Payment for that month to the Engineer. Agreement is to be reached on:
- P. The percentage of Work completed for each lump sum item.
- Q. The quantity of Work completed for each unit price item.
- R. The percentage of Work completed for each approved Change Order item.
- S. The amount of materials-on-hand.
- T. On the basis of these agreements the Contractor is to prepare a final copy of the Application for Payment and submit it to the Engineer for approval.
- U. The Engineer will review the Application for Payment and if appropriate will recommend payment of the application to the Owner.
- D. Provide a revised and up-to-date Progress Schedule per Section 01 32 16 "Construction Progress Schedules" with each Application for Payment.
- E. Provide Project photographs per Section 01 32 33 "Photographic Documentation" with final Application for Payment.

1.04 ALTERNATES AND ALLOWANCES

- A. Include amounts for specified Alternate Work in the Agreement in accordance with Section 01 23 10 "Alternates and Allowances."
- B. Include amounts for specified Allowances for Work in the Agreement in accordance with Section 01 23 10 "Alternates and Allowances."

1.05 MEASUREMENT PROCEDURES

- A. Measure the Work described in the Agreement for payment. Payment will be made only for the actual measured and/or computed length, area, solid contents, number and weight, unless otherwise specifically provided. No extra or customary measurements of any kind will be allowed.

1.06 BASIS OF PAYMENT

- A. The Basis of Payment will be established in the Contract Documents.

2.00 BID ITEMS

2.01 BID ITEM A

- A. Item No.: A1 – 2.0 MILLION GALLON ELEVATED STORAGE TANK

Payment will be made per lump sum complete and in place unit. Payment shall be at the bid price and shall be full compensation for supplying all labor, equipment, and materials and installing the elevated storage tank, including clearing and grubbing, removal of trees, soil foundation, tank foundation, design of elevated storage tank, design of tank and soil foundations, supply and erection of foundation, tank pedestal, tank bowl, tank roof, all piping interior and exterior to tank, overflow facilities and rip rap, concrete mow strip, 6-foot chain link fence with 16-foot vehicle access gate, gate operator with illuminated key

pad as specified in the plans, Knox Box, 12-inch concrete pads for generator and fuel tank, drain, control valve, isolation valves, bowl inlet and outlet valves, manways, ladders, platforms, railing, bowl painting including both logos, 24-inch ductile iron yard piping, testing, disinfection, and all other appurtenances and items related to the work and not included in other bid items. The bid price shall also include any supplemental geotechnical engineering the Contractor chooses to perform to supplement the Geotechnical report included in the specifications.

2.02 BID ITEM B

A. Item No.: B1 & B2 –24" C905 DR-25 PVC & 12" C900 DR-18 PVC WATER PIPE

Measurement for PVC pipe shall be per linear foot of pipe installed for the nominal diameter listed in the Bid Proposal and Contract Documents, measured horizontally from center of fitting to center of fitting or end of pipe without any deduction for the length of intermediate fittings, specials, or valves.

Payment made at the unit price for this item shall be for pipe and fittings per the Contract Documents. Payment shall include furnishing, hauling and laying of pipe and fittings; pipe restraint; trench excavation, shoring and pumping where necessary; backfilling of trench, including embedment material, flowable fill and metallic detection tape; waterline markers; replacement of topsoil; replacement of landscaping to a condition as good or better than existing conditions prior to construction; protection or replacement of existing structures and utilities, including but not limited to water service connections, power poles and guy wires, buried electric services, buried telephone cable, buried fiber optic cable, etc.; protection or replacement of existing irrigation and sprinkler systems; disposal of surplus materials; construction, maintenance, and removal of temporary fencing; project site clean-up and maintenance; removal and replacement of existing barbed wire, chain link, pipe rail, wood, or other type of fence; removal and replacement of brick, masonry, wood, or any other type of driveway entrance; installation of new pavement markings as required; sign removal and replacement; mailbox removal and replacement; surveying and replacement of monuments; dust control; removal of mud from roadways; testing and disinfection; connections to existing waterlines, all fittings and adaptors, unless otherwise noted; and any incidental work and materials not otherwise provided for in this Section, all in strict accordance with the Contract Documents.

Construction and maintenance of required access roadways and driveways and test plugs used for testing shall also be included in the unit price.

Payment for pipe shall include any and all extra precautions or construction requirements necessary to adequately protect and support existing utilities and relocate existing utilities as necessary for construction of the waterline. The Contractor is responsible for all fees assessed by utility companies to provide utility support for existing utility lines or relocation, at no additional cost to the Owner. Payment shall include all costs required to have utility

companies repair any damage to their lines caused by the Contractor's activities and any cleanup, property damages, fines, etc., resulting from damage caused by the Contractor.

No separate payment will be made for rock excavation, and the cost thereof shall be included in the unit price. The Contractor is not responsible for crop damage inside the permanent easement(s). The Contractor is responsible for any crop or other property damage outside the permanent easement(s) caused by his operations, and shall negotiate a settlement with the landowner that will ensure that no claim will be filed against the Owner. All special easement requirements as listed in the Contract Documents shall be made incidental to this bid item. If an existing utility, sidewalk, or structure is damaged or must be relocated for construction, the cost of the repair or relocation shall be borne by the Contractor.

B. Item No.: B3 – 24" BUTTERFLY VALVE

Payment for butterfly valves shall be at the unit price per each and shall be full compensation for furnishing and installing butterfly valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, concrete pads, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

C. Item No.: B4 –12" GATE VALVE

Payment for gate valves shall be at the unit price per each and shall be full compensation for furnishing and installing gate valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, concrete pads, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

D. Item No.: B5 –24" GATE VALVE WITH 90° BEVEL GEAR

Payment for gate valves with 90° bevel gear shall be at the unit price per each and shall be full compensation for furnishing and installing gate valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, concrete pads, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

E. Item No.: B6 – 2" COMBINATION AIR VALVE

Payment for combination air valves shall be at the unit price per each and shall be full compensation for furnishing and installing 2" combination air valves per the Contract Documents; including all appurtenances, access outlets on main line, shut-off valves, concrete, boxes, riser piping, operators, stems, backfill and all other items required for complete installation.

F. Item No.: B7 – 1" WATER SERVICE

Payment for water services and connections shall be made at the unit price bid per each and shall be full compensation for providing a 1-inch type "K" copper ASTM-B-88 service connection with a bullhead to be used as a sample point and a future irrigation connection by the City of Lancaster as indicated on the plans. Payment shall include double brass strap saddle, service line placement, embedment, backfill, all fittings, couplings and adaptors, reducers, meter box and all other items required for installation.

G. Item No.: B8 – FIRE HYDRANT ASSEMBLY

Payment for fire hydrant assemblies shall be made at the unit price bid per each and shall be full compensation for furnishing and installing fire hydrant assemblies as indicated in the Contract Drawings and in accordance with the Project Specifications, including all trenching, MJ x FLG 6" tee or MJ x FLG 12" x 6" reducer off main water line, 6" pipe after 6" gate valve (regardless of length), pipe placement, 6" gate valves, embedment, backfill, connections to water main and all other items required for installation.

H. Item No.: B9 – CONNECT TO EXISTING 30" WATERLINE (N. HOUSTON SCHOOL RD)

Payment for connection to the existing waterline shall be at the unit price bid for each item. Payment shall be full compensation for providing one (1) 30" x 24" tapping sleeve, and installing all pipe, valves, fittings, connections to existing lines, waterline shutdowns, disinfection, testing, and all other items necessary to complete the work. Bid price for this item shall include all coordination, temporary blocking and restraint, adaptors, specials, and fittings to make the connection at any time during the elevated tank construction contract.

I. Item No.: B10 – CONNECT TO EXISTING 12" WATERLINE (W. WINTERGREEN RD)

Payment for connection to the existing waterline shall be at the unit price bid for each item. Payment shall be full compensation for providing one (1) 12" tapping sleeve, and installing all pipe, valves, fittings, connections to existing lines, waterline shutdowns, disinfection, testing, and all other items necessary to complete the work. Bid price for this item shall include all coordination, temporary blocking and restraint, adaptors, specials, and fittings to make the connection at any time during the elevated tank construction contract.

J. Item No.: B11 – TRENCH SAFETY

The price bid per linear foot for this item shall be full compensation for trench safety as outlined in the Specifications. The Contractor shall estimate the quantity for trench safety and include that estimate in the Proposal. In no case shall the estimated quantity be less than 1,294 linear feet. Partial payment for trench safety shall be based on the total amount of trench safety installed.

K. Item No.: B12 – SITE PREPARATION AND GRADING

Payment shall be at the price bid, and shall be full compensation for site grading, including all earthwork, excavation, drainage work, fill, and compaction necessary to obtain the contours indicated on the plans for the tank site, entrance road, and ditch work.

L. Item No.: B13 – 6" CONCRETE ACCESS DRIVE AND PARKING

Payment for the 6" concrete access drive and parking shall be at the unit cost bid per square yard and shall be full compensation for concrete drive and striping installed per the project plans and specifications. This bid item shall include all costs for labor, material, and coordination required.

M. Item No.: B14 – CONCRETE SIDEWALK REPLACEMENT

Payment for concrete sidewalk replacement shall be at the unit price per square yard and shall be full compensation for replacing sidewalk concrete along N. Houston School Road in accordance with the plans and specifications. This bid item shall include all costs for labor, material, and coordination required.

N. Item No.: B15 – ASPHALT PAVING REPLACEMENT

Payment for asphalt pavement replacement shall be at the unit price per square yard and shall be full compensation for replacing asphalt in W. Wintergreen Road in accordance with the plans and specifications. This bid item shall include all costs for labor, material, and coordination required.

O. Item No.: B16 – HYDROMULCH

Payment for hydromulch shall be at the unit cost bid per square yard and shall be full compensation for hydromulch installed at the tank site per the project plans and specifications.

P. Item No.: B17 – TANK/SITE ELECTRICAL AND SCADA

Payment made at the unit price bid shall be full compensation for furnishing all labor, equipment, and materials and installation of all SCADA, electrical and lighting on the tank site, including coordination with the electrical utility company, connections to the utility and the site appurtenances, antenna appurtenances, conduits, cables, panels, switches, lights and poles, supports and attachments, coordination with controls and instrumentation, manholes, testing, start-up, and all other items related to the work.

Q. Item No.: B18 – MOBILIZATION

Payment for mobilization shall be at the unit cost bid per lump sum and shall be full compensation for those items noted above in paragraph 1.02A.3.c.4, and shall not exceed 5% of the contract price.

R. Item No.: B19– STORM WATER POLLUTION PREVENTION PLAN

Payment for mobilization shall be at the unit cost bid per lump sum and shall be full compensation for preparation of the SWPPP by a registered engineer, submission of all forms for both the City and the Contractor, posting of documentation, required inspections and reports, and adjustments to the SWPPP where required. It shall also include furnishing, installing, and maintaining erosion and sediment control structures and procedures for the duration of the construction period, and the proper removal when no longer required.

S. Item No.: B20 – TRAFFIC CONTROL PLAN

Payment for traffic control shall be made at the lump sum price bid, and shall include design and all materials necessary for providing and maintaining traffic control around construction and providing a traffic control plan to meet all City of Lancaster standards. The lump sum bid price shall include temporary paving, cones, signs, barricades, flag med, temporary signal modifications, temporary striping and buttons, temporary drainage, and any other items required to provide for the safe movement of traffic. Traffic control will be paid in equal monthly installments based on the time remaining to achieve substantial completion.

T. Item No.: B21 – GENERAL CONSTRUCTION CONTINGENCY

The construction contingency item shall be the amount shown on the bid proposal and shall be used by the City for changes or unforeseen items during the construction process. This item may be used in full, partial, or not at all during construction

2.03 ADDITIVE ALTERNATE BID ITEM C

A. Item No.: C1 – Elevated Tank 2nd Floor

The additive alternate item of "Elevated Tank 2nd Floor" includes the design and construction of a corrugated metal deck covered with a smooth, unpainted concrete finish, with a 4 to 6 foot wide opening for a 1-ton jib crane mounted to the wall. The opening shall have a removable hand rail or safety chain with an opening for the ladder, but shall not have stairwells. Floor shall be designed for a 250 psf heavy loading. This additive alternate shall include lighting and general receptacles for the second floor.

PRODUCTS (NOT APPLICABLE)

EXECUTION (NOT APPLICABLE)

END OF SECTION

CHANGE ORDER #

PO #

Contract #

2.0 MG Elevated Storage Tank

THIS AGREEMENT MADE, entered into and executed by and between the CITY OF LANCASTER, a body corporate and politic under the laws of the State of Texas, hereinafter called "CITY", and:

name of vendor

has been changed as follows:

Item	Description	Amount	Days (+/-)
1	See attached	\$ 4,539.25	
2		\$ -	
3		\$ -	
4		\$ -	
5		\$ -	
6		\$ -	
7		\$ -	
8		\$ -	
9		\$ -	
10		\$ -	

Total Change \$ 4,539.25 0

Change in Contract Price:

Original Contract Price:	\$0.00
Change Order #1	\$0.00
Change Order #2	\$0.00
Change Order #3	\$0.00
Change Order #4	\$0.00
Change Order #5	\$0.00
Net Change from this CO:	\$0.00
Net Change from Prior COs:	\$0.00
Contract Amount Prior to this CO:	
Contract Amount with all COs:	\$0.00 ###
Percentage of Original Contract:	#DIV/0!

Change in Contract Times:

Original Number of Days:	
Original End Date:	
Net change from prior change orders:	
Number of Days prior to this Change Order:	
Net change of this Change Order:	
Number of Days with all COs:	
New End Date:	

Please amend the PO by adding or deducting the following amounts to/from the funding sources listed here:

Project Number	Account Number	Amount

CONTRACTOR APPROVAL

see attached

Contractor APPROVALS: CITY OF LANCASTER Printed Name & Title _____ Date _____

see attached

Project Manager _____ Date _____ Director _____ Date _____

Inspector _____ Date _____ Opal Mauldin Robertson, City Manager _____ Date _____

FINANCE / PURCHASING

Is the change order amount over 25% of the original contract? _____ Yes _____ No

If yes, date of Council authorization (approval of new amount) _____ Date _____

Was a budget amendment form needed / submitted? _____ Yes _____ No

JE Date for budget transfer. _____ Date _____

Dawn Berry, Purchasing Agent _____ Date _____ Finance _____ Date _____

CONTRACTOR COMPLIANCE WITH WORKER'S COMPENSATION LAW

Pursuant to Article 8308-3.23 of Vernon's Annotated Civil Statutes, Contractor certifies that it provides Worker's Compensation Insurance coverage for all of its employees employed on City of Lancaster Project Number(s)



Signature

Mike Lamon

Printed Name

Landmark Structures I, L.P.

Company Name

November 6, 2012

Date

Vice President of Landmark Structures
Management Inc., General Partner

Title



Landmark Structures

1665 Harmon Road
Fort Worth, Texas 76177
817 439 8888 Phone
817 439 9001 Fax
www.teamlandmark.com

BID TO: City of Lancaster, Texas

PROJECT: 2.0 MG Elevated Storage Tank
Bid 2012-45
Addendum No. 2

LIST OF SUBCONTRACTORS

<u>Name of Subcontractor/Contact Person</u>	<u>Address/Phone Number</u>	<u>Type of Work</u>
Sun*Tech Electrical Nathan Reed	San Marcos, Texas Ph: (512) 805-6100 Email: sntecelectrical@aol.com	Electrical
Quality Excavation Osa Gaisoa	Aubrey, Texas Ph: (940) 365-0800 Email: osa@qualityexcavation ltd.com	Sitework

CITY OF LANCASTER, TEXAS



Lancaster

CONSTRUCTION PLANS FOR 2.0 MG ELEVATED STORAGE TANK

MAYOR
MARCUS E. KNIGHT

COUNCIL MEMBERS
MARCO MEJIA, MAYOR PRO TEAM
JAMES DANIELS, DEPUTY MAYOR PRO TEAM
WALTER WEAVER
STANLEY JAGLOWSKI
LaSHONJIA HARRIS
NINA MORRIS

CITY MANAGER
OPAL MAULDIN ROBERTSON

CITY SECRETARY
DOLLE K. DOWNE

DEVELOPMENT SERVICES DIRECTOR
RONA STRINGFELLOW-GOVAN

CITY ENGINEER
SHWETHA PANDURANGI, P.E., C.F.M.

WATER/WASTEWATER SUPERINTENDENT
DONALD MCKINNEY, SR.



VICINITY MAP
N.T.S.

OCTOBER 2012

BID NO. 2012-45



LCS11454

SHEET INDEX

SEQUENCE NO.	SHEET NO.	DESCRIPTION
		COVER SHEET
1	G-1	GENERAL NOTES AND LEGEND
2	C-1	CIVIL SITE AND CONTROL PLAN
3	C-2	PAVING AND GRADING PLAN
4	C-3	24" WATER LINE PLAN AND PROFILE STA 1+00 TO STA 6+00
5	C-4	24" WATER LINE PLAN AND PROFILE STA 6+00 TO STA 11+00
6	C-5	TANK PLAN AND ELEVATION SECTION
7	C-6	YARD PIPING, ELEVATED TANK PIPING
8	C-7	MISCELLANEOUS CIVIL DETAILS
9	C-8	FENCE AND BOLLARD DETAILS
10	C-9	WATER LINE DETAILS
11	C-10	CITY OF LANCASTER DETAILS
12	C-11	CITY OF LANCASTER DETAILS
13	C-12	CITY OF LANCASTER DETAILS
14	C-13	THRUST BLOCKING DETAILS
15	C-14	TANK PAINT PLAN
16	C-15	ELECTRICAL LEGEND I
17	E-1	LEGEND II
18	E-2	SITE PLAN
19	E-3	ELEVATION & TANK PLAN
20	E-4	INSTRUMENTATION FLOOR PLAN
21	E-5	1ST AND 2ND FLOOR POWER PLAN
22	E-6	INTERCONNECTION DIAGRAM & DETAILS
23	E-7	DETAILS
24	E-8	DETAILS
25	PI-1	PROCESS & INSTRUMENTATION LEGEND
26	PI-2	LOOP DIAGRAMS



Freese and Nichols, Inc. State Board of Professional Engineers Reg. No. 2144

A.R. Stringfellow
10-12-12

BID SET

GENERAL NOTES

- ALL EXISTING UTILITIES ARE AS PER AVAILABLE RECORDS. PRIOR TO CONSTRUCTION, EXISTING LOCATION OF UTILITIES SHALL BE VERIFIED ON THE GROUND BY THE CONTRACTOR.
- THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF EXIST. UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR COMPLETE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF ALL UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THEREBY. THE CONTRACTOR SHALL CONTACT THE FOLLOWING AT LEAST 72 HOURS PRIOR TO EXCAVATION:

LANCASTER UTILITIES DEPARTMENT (972)218-2327
ONCOR ELECTRIC & GAS (972)888-1301
SLOOT (972)79-3187
SBC (AT&T) (972)553-8415

- EXISTING IMPROVEMENTS INCLUDING, BUT NOT LIMITED TO, FENCES, DRIVEWAYS, SIDEWALKS, PAVEMENT, CURBS, UTILITY PIPELINES, AND DRAINAGE STRUCTURES WHICH ARE DAMAGED, REMOVED OR ALTERED TO PERMIT INSTALLATION OF THE WORK SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AT THE CONTRACTOR'S DISCRETION, IN THE SAME LOCATION AND IN CONDITION AS GOOD AS OR BETTER THAN THEY WERE FOUND.
- ALL VALVE BOXES SHALL BE SET TO MATCH FINISHED GRADE.
- ALL TRENCH BACKFILL IN UNPAVED AREAS SHALL BE PLACED TO EXISTING GRADE PLUS SIX INCHES TO ALLOW FOR SETTLEMENT. HOWEVER, DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
- THE CONTRACTOR SHALL REMOVE FROM THE PROJECT AREA ALL SURPLUS MATERIAL. THIS SHALL BE INCIDENTAL AND NOT A SEPARATE PAY ITEM. SURPLUS MATERIALS FROM EXCAVATION INCLUDING DIRT, TRASH, DEBRIS, ETC. SHALL BE PROPERLY DISPOSED OF AT A SITE ACCEPTABLE TO THE CITY OF WITHIN THE CITY LIMITS. IF THE LOCATION IS NOT WITHIN THE CITY LIMITS, THE CONTRACTOR SHALL PROVIDE A LETTER STATING SO. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG MATERIAL DRAINAGE WAY WITHOUT WRITTEN PERMISSION FROM THE AFFECTED PROPERTY OWNER AND FLOODPLAIN ADMINISTRATOR. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN THE AREAS WITHOUT PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND HE SHALL REMOVE MATERIAL AT HIS OWN COST.
- THE INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION MEASURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY THROUGHOUT ALL PHASES OF CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE EPA'S NPDES REGULATIONS 40-CFR-122.123, 124 CONCERNING EROSION AND SEDIMENT CONTROL, AND 30CD GENERAL PERMIT D0150000. THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARING A STORM WATER POLLUTION PREVENTION PLAN AND SUBMITTING A NOTICE OF INTENT "NOT" TO TOSS 72 HOURS PRIOR TO BEGINNING CONSTRUCTION AND NOTICE OF TERMINATION "NOT" TO TOSS UPON COMPLETION OF THE PROJECT.
- ALL TRENCH EXCAVATION SHALL BE IN ACCORDANCE WITH THE U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATOR'S STANDARDS. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WORK UTILIZING A TRENCH SAFETY PLAN PREPARED BY A PROFESSIONAL ENGINEER FOR THIS PROJECT. THE TRENCH SAFETY PLAN SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING.
- CONTRACTOR SHALL MAINTAIN SUITABLE CONSTRUCTION ACCESS TO THE ENGINEER AND THE CITY OF LANCASTER AT ALL TIMES DURING CONSTRUCTION.
- ALL BURIED VALVES, FIRE HYDRANTS, METALLIC PIPING, AND METALLIC EQUIPMENT SHALL BE WRAPPED IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL INSTALL STANDARD BODIES AT LOCATIONS SHOWN. ALL NON-STANDARD VERTICAL AND HORIZONTAL BODIES SHALL BE INSTALLED USING STANDARD BODIES AND 75% OF THE MAXIMUM ALLOWABLE JOINT DETECTIONS AND MINIMUM RIGIDS AS RECOMMENDED BY THE PIPE MANUFACTURER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ALL EXISTING UTILITIES IN SERVICE DURING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE CLOSURE PIECES FOR WATER LINE AS REQUIRED TO CONSTRUCT THE PROJECT, INCLUDING THOSE REQUIRED FOR SPECIAL CONSTRUCTION PROCEDURES TO COORDINATE CHANGES TO THE SEQUENCE OF CONSTRUCTION. ALL CLOSURE PIECES SHALL BE CONSIDERED A SUBSIDIARY COST TO THE PROJECT AND WILL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR MAY ELECT TO VIDEO ALL POTENTIALLY IMPACTED PRIVATE PROPERTY AREAS AND ROAD CONDITIONS PRIOR TO WORK. VIDEOS SHALL INCLUDE DATE, LOCATION AND AUDIO IDENTIFICATION OF PROPERTY ADDRESS AND NAME/LATERAL NAME. THIS PRE-CONSTRUCTION VIDEO TAPING OF IMPACTED PROPERTIES SHALL BE CONSIDERED SUBSIDIARY WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC UTILITY COMPANY TO PROVIDE SUPPORT OF POWER POLES DURING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

LEGEND

	RIGHT-OF-WAY		TX WATER VALVE
	PROPERTY LINE		PROP. WATER VALVE
	EX. WATER LINE & SIZE		EX. WATER METER
	PROP. WATER LINE		TX. FIRE HYDRANT
	SANITARY SEWER LINE		PROP. FIRE HYDRANT
	UNDERGROUND TELEPHONE CABLE		EX. SEWER MANHOLE
	OVERHEAD ELECTRIC LINE		EX. TELEPHONE BOX
	EX. CULVERT		EX. SIGN
	PROP. DECORATIVE FENCE		EX. POWER POLE & GUY ANCHOR
	PROP. CHAINLINK FENCE		BENCHMARK
	EXISTING FENCE		RETRIEVAL LOCATION
	EX. MAJOR CONTOUR		EXISTING TREE
	TX. MINOR CONTOUR		
	PROP. CONTOUR		
	EX. EDGE OF PAVEMENT		
	PROP. EDGE OF CONC.		

ABBREVIATIONS

CL	CENTERLINE	CONC.	CONCRETE
C.Y.	CUBIC YARD	CU.Y.	CUBIC YARD
D	DUCTILE IRON	ELEV.	ELEVATION
ELEV. OR D.	PIH OR FIRE HYD.	FLO. X H.V.	FLANGED BY MECHANICAL JOINTS
FLO. X H.V.	FLANGED	FLEX. BASE	FLEXIBLE BASE
FLO.	FLOW LINE	FL.	FLOW LINE
FL.	GATE VALVE	IRV	IRON ROD FOUND
IRV	IRON ROD SET	IRV	IRON ROD SET
IRV	MECHANICAL JOINT	IRV	MECHANICAL JOINT
IRV	NORTH	IRV	NORTH
IRV	OVERHEAD	IRV	OVERHEAD
IRV	PLAN END	IRV	POLYVINYL CHLORIDE PIPE
IRV	POLYVINYL CHLORIDE PIPE	IRV	POWER POLE
IRV	POINT OF INTERSECTION	IRV	PROPOSED
IRV	REINFORCED CONC. PIPE	IRV	RIGHT-OF-WAY
IRV	TOP OF PIPE	IRV	WATER METER
IRV	WATER METER	IRV	WATER VALVE

CITY OF LANCASTER WATER NOTES

- ALL WATERLINE CROSSINGS OF SANITARY SEWER LINES SHALL BE AS SHOWN IN THE PLANS AND MEET TCCO REQUIREMENTS.
- PIPES 12 INCHES IN DIAMETER AND SMALLER SHALL BE POLYVINYL CHLORIDE (P.V.C.) MEETING THE REQUIREMENTS OF AWWA C900 OR 18 OR DUCTILE IRON PIPE (D.I.P.) MEETING THE REQUIREMENTS OF AWWA C151 CLASS 50 PIPE, ALL D.I.P. SHALL BE WRAPPED WITH A POLYETHYLENE LINER.
- FOR PIPES LARGER THAN 12 INCHES IN DIAMETER, THE PIPE SHALL BE REINFORCED CONCRETE CYLINDER PIPE (AWWA C304 OR AWWA C303), DUCTILE IRON PIPE (AWWA C151 CLASS 50) OR POLYVINYL CHLORIDE PIPE UP TO 24 INCHES MEETING THE REQUIREMENTS OF AWWA C900 - 235 P.S.I. RATED PIPE.
- ALL VALVES ON PIPES 12 INCHES AND SMALLER SHALL BE RESILIENT SEALED WEDGE VALVES (AWWA C508).
- ALL VALVES ON PIPES LARGER THAN 12 INCHES BUT SMALLER THAN 30 INCHES SHALL BE BUTTERFLY VALVES (AWWA C504) OR WEDGE VALVES (AWWA C508).
- ALL VALVES ON PIPES 30 INCHES AND LARGER SHALL BE BUTTERFLY VALVES (AWWA C504).
- EMBEDMENT SHALL BE AS SHOWN IN THE PLANS. BACKFILL WITHIN THE LIMITS OF EXISTING AND PROPOSED PAVEMENT SHALL BE COMPACTED TO 95% STANDARD PROCTOR. OUTSIDE PAVEMENT (EXISTING OR PROPOSED) SHALL BE COMPACTED TO MINIMUM OF 90% STANDARD PROCTOR. ALL COMPACTION SHALL BE BY MECHANICAL METHODS.
- WATER LINES SHALL BE PRESSURE TESTED IN ACCORDANCE WITH MCTCOG ITEM 6.7.3.
- ALL HORIZONTAL AND VERTICAL BODIES SHALL BE BLOODED.

FRANCHISE UTILITIES

AT & T	ROBERT ADALPE (972) 680-0944 rob@att.net
AT&TS	JOE MORRIS (903) 340-7072 jmorris@att.net
ONCOR	LARRY TROJAN (214) 408-2255 larry.trojan@oncor.com
TRUE WARMER CABLE	CJ BRANSON (214) 330-5417 (214) 330-7508 christopher.branson@truecable.com



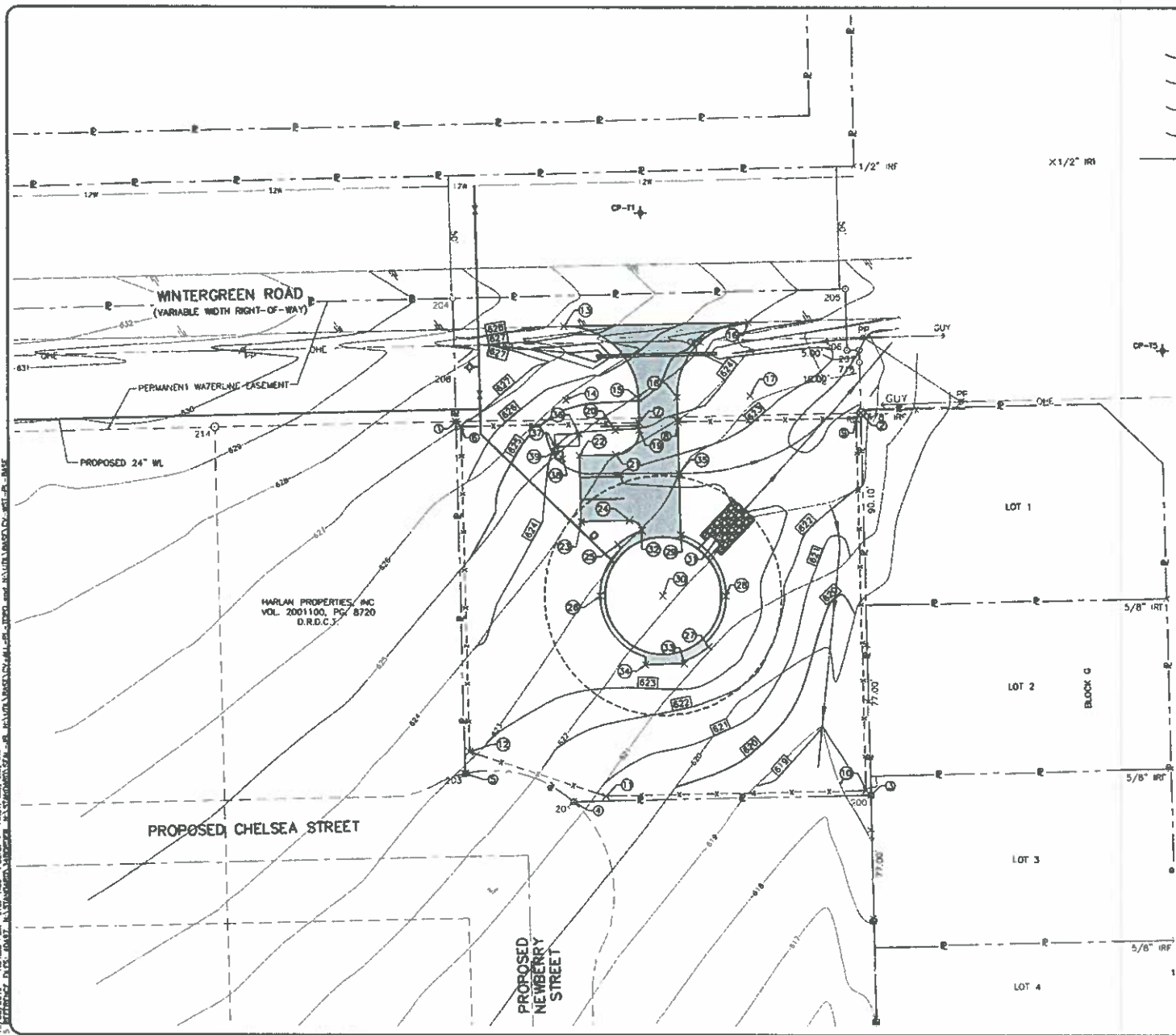
CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
GENERAL
GENERAL NOTES AND LEGEND

DATE	10/11/2012
TIME	10:00 AM
BY	JOE MORRIS
FOR	JOE MORRIS
REVISION	1.0
DESCRIPTION	2.0 MG ELEVATED STORAGE TANK
DATE	10/11/2012
TIME	10:00 AM
BY	JOE MORRIS
FOR	JOE MORRIS
REVISION	1.0
DESCRIPTION	2.0 MG ELEVATED STORAGE TANK

G-1

BID SET

NOVA INC. 10/24/12 (1/2" = 100')
 10/24/12 (1/2" = 100')
 10/24/12 (1/2" = 100')
 10/24/12 (1/2" = 100')



- LEGEND**
- MAJOR PROP CONTOURS
 - MINOR PROP CONTOURS
 - EXISTING MAJOR CONTOURS
 - EXISTING MINOR CONTOURS
 - FLOWLINE

POINT TABLE				
PNT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	6910937.58	2491315.57	627.11	PROP. CORNER
2	6910941.48	2491482.52	622.11	PROP. CORNER
3	6910785.11	2491486.17	619.51	PROP. CORNER
4	6910782.25	2491363.44	621.24	PROP. CORNER
5	6910793.76	2491316.83	622.91	PROP. CORNER
6	6910935.63	2491317.62	626.98	FENCE CORNER
7	6910937.34	2491391.10	624.18	FENCE CORNER
8	6910937.71	2491407.09	623.78	FENCE CORNER
9	6910938.83	2491480.73	622.09	FENCE CORNER
10	6910787.07	2491484.13	619.48	FENCE CORNER
11	6910784.56	2491376.92	620.85	FENCE CORNER
12	6910802.85	2491320.72	623.10	FENCE CORNER
13	6910878.51	2491360.17	627.75	PC
14	6910948.51	2491360.87	625.37	RAD
15	6910947.21	2491390.87	625.09	PT
16	6910978.39	2491436.15	625.00	PT
17	6910948.40	2491436.85	623.48	RAD
18	6910947.70	2491406.88	624.46	PC
19	6910934.44	2491391.18	623.91	PC
20	6910934.20	2491381.17	623.97	RAD
21	6910924.21	2491381.40	623.30	PT
22	6910923.86	2491368.40	623.44	PARKING CORNER
23	6910886.86	2491367.03	623.46	PARKING CORNER
24	6910897.33	2491387.03	623.77	PC
25	6910887.49	2491382.05	623.91	CONCRETE CORNER
26	6910886.64	2491374.75	623.94	MOW STRIP
27	6910845.80	2491419.44	623.92	CONCRETE CORNER
28	6910886.64	2491426.75	623.94	MOW STRIP
29	6910891.56	2491408.17	623.94	CONCRETE CORNER
30	6910866.64	2491400.75	624.00	TANK CENTER
31	6910889.48	2491422.54	623.63	OVERFLOW
32	6910893.28	2491392.08	623.90	PT
33	6910838.84	2491409.40	623.89	CONCRETE CORNER
34	6910838.46	2491393.40	623.89	CONCRETE CORNER
35	6910916.61	2491407.58	622.85	FLOWLINE
36	6910932.77	2491366.24	624.46	CONCRETE CORNER
37	6910827.53	2491356.36	624.46	CONCRETE CORNER
38	6910922.61	2491359.48	624.22	CONCRETE CORNER
39	6910925.54	2491356.41	624.22	CONCRETE CORNER

0 10' 20' 40'
 SCALE IN FEET
 BID SET

J.C. Ballou 10/24/12

CITY OF LANCASTER, TEXAS

2.0 MG ELEVATED STORAGE TANK

CIVIL

PAVING AND GRADING PLAN

PROJECT NO. 10/24/12

DATE: OCT. 2012

BY: JCB

CHECKED: JCB

APPROVED: JCB

SCALE: 1" = 100'

DATE: 10/24/12

BY: JCB

CHECKED: JCB

APPROVED: JCB

FRANK RICHOLS

REGISTERED PROFESSIONAL ENGINEER

NO. 40487

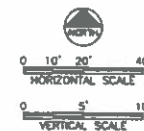
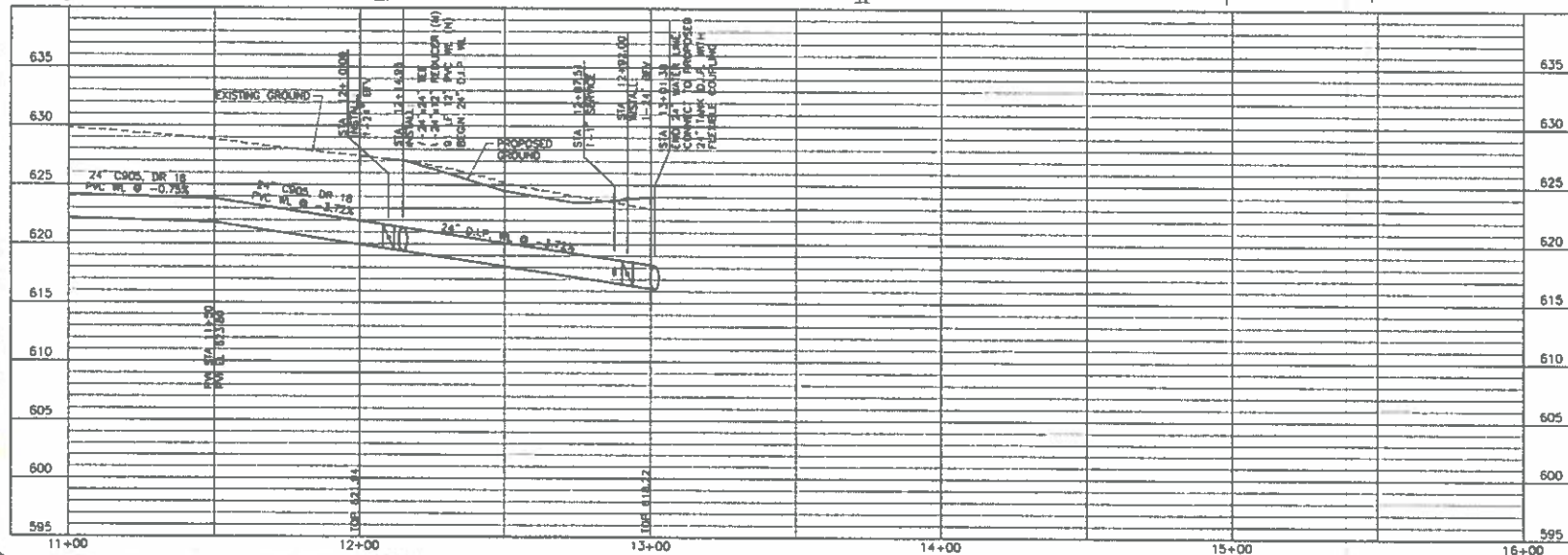
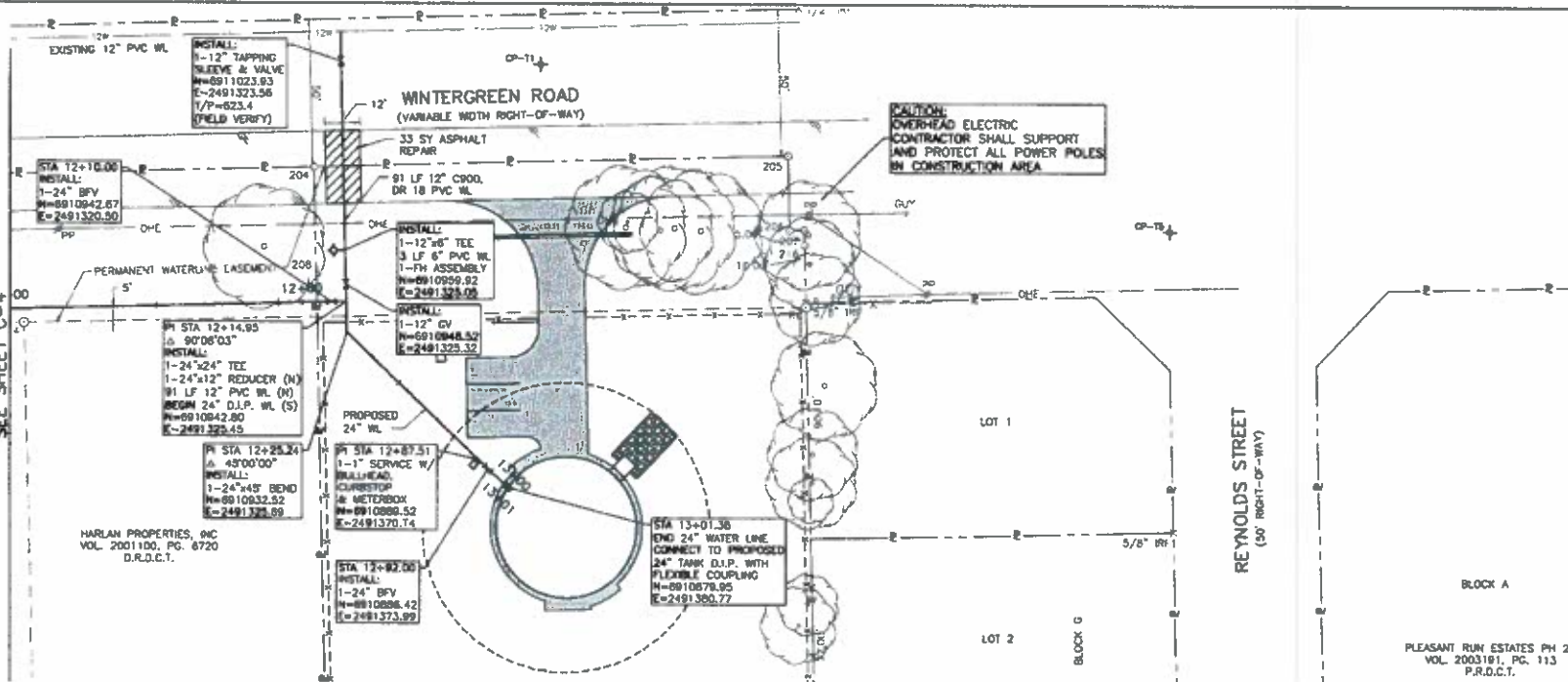
STATE OF TEXAS

C-2

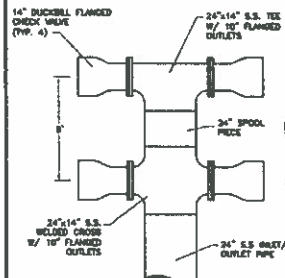
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Date: Oct 18, 2012 - 3:37pm User: 02237 File: C:\Users\jgallagher\OneDrive\Documents\Projects\20031100\20031100.dwg

MATCHLINE STA 11+00
 SEE SHEET C-4

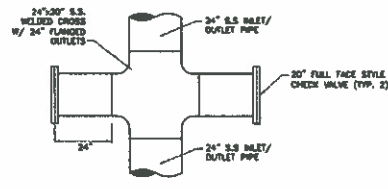


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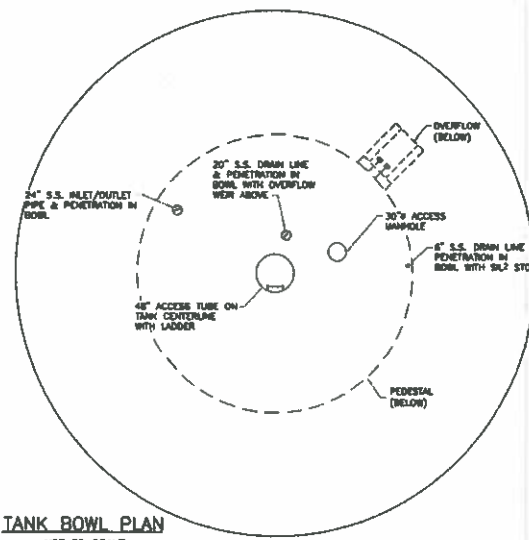


14" INLET DETAIL
NOT TO SCALE

- NOTE:
1. CROSSERS AND DUCKBILL VALVES SHALL BE ROTATED 30° THAT FLOW SPURNS IN 4 DIFFERENT DIRECTIONS TO PROMOTE TANK MIXING.
2. DUCKBILL CHECK VALVES SHALL BE DESIGNED TO OPERATE AT THE LOWEST PRESSURE DIFFERENTIAL OFFERED BY THE MANUFACTURER.



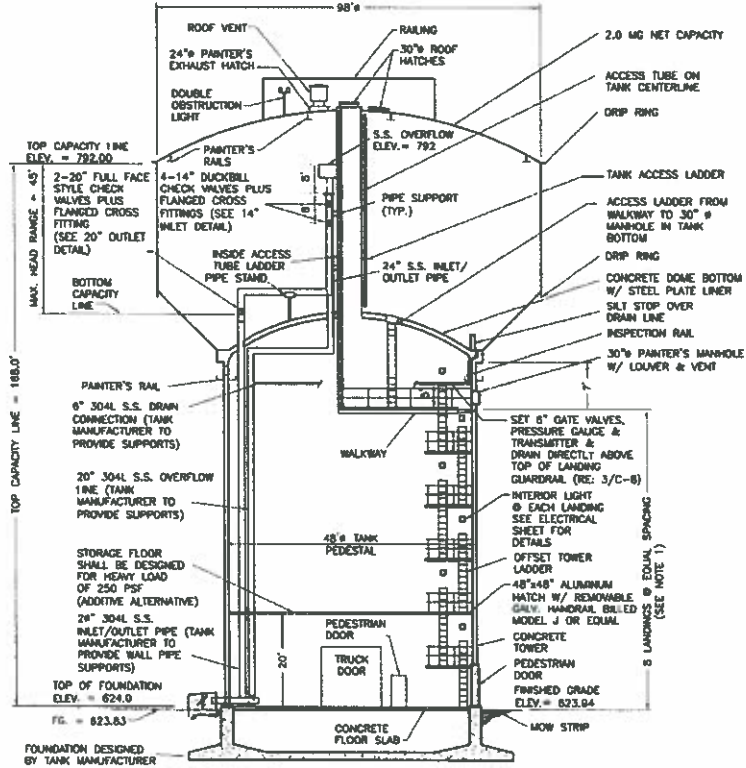
20" OUTLET DETAIL
NOT TO SCALE



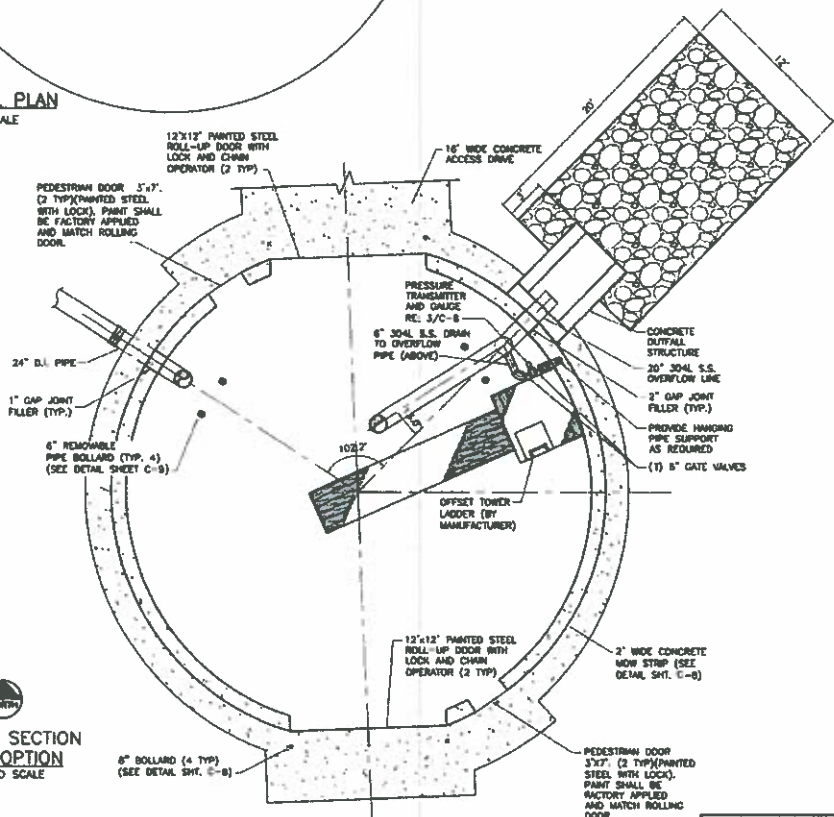
TANK BOWL PLAN
NOT TO SCALE

NOTES:

1. LADDERS, LANDINGS, AND PIPING ARE CONFIGURED FOR CLARITY. SEE SECTION PLAN FOR LOCATION INSIDE TANK PEDESTAL. ALL SHALL BE DESIGNED IN ACCORDANCE WITH OSHA.
2. THE PEDESTAL DIAMETER AND HEAD RANGE MAY BE ADJUSTED BY UP TO 5' TO MATCH THE MANUFACTURER'S DIMENSION. HEAD RANGE MAY NOT EXCEED 45'. THE PEDESTAL WALL THICKNESS MAY BE ADJUSTED TO MATCH THE MANUFACTURER'S STANDARD DIMENSION. HOWEVER THE MANUFACTURER IS RESPONSIBLE FOR THE DESIGN IN ACCORDANCE WITH THE SPECIFICATIONS.
3. REQUIRED TANK NET CAPACITY SHALL BE PROVIDED BETWEEN THE OUTLET ELEVATION AND THE TOP OF THE OVERFLOW STRUCTURE ELEVATION.
4. REQUESTS FOR DEVIATIONS FROM TANK ITEMS AND APPURTENANCES SHALL BE SUBMITTED PER THE CONTRACT DOCUMENTS. SHOP DRAWINGS OMITTING OR CHANGING ITEMS SHOWN ON THE PLANS SHALL BE DISAPPROVED.



ELEVATION - SECTION
NOT TO SCALE



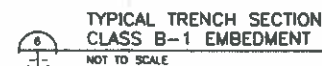
**PLAN - SECTION
BASE OPTION**
NOT TO SCALE



CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
CIVIL
TANK PLAN AND ELEVATION SECTION

NO.	DATE	DESCRIPTION	BY	CHKD
1	08/01/2017	ISSUED FOR BIDDING	LMH	LMH
2	08/01/2017	REVISED	LMH	LMH
3	08/01/2017	REVISED	LMH	LMH
4	08/01/2017	REVISED	LMH	LMH
5	08/01/2017	REVISED	LMH	LMH
6	08/01/2017	REVISED	LMH	LMH
7	08/01/2017	REVISED	LMH	LMH
8	08/01/2017	REVISED	LMH	LMH
9	08/01/2017	REVISED	LMH	LMH
10	08/01/2017	REVISED	LMH	LMH

BID SET
C-6
7



FRANK PRESS TRICHOLS
190 N. Spauld Street, Suite 504, St. Paul, MN 55104
Phone: 763-228-2603
Fax: 763-228-2604
E-mail: frank@frankpress.com
Web: www.frankpress.com

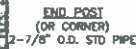
CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK

MISCELLANEOUS CIVIL DETAILS

[illegible]

BID SET

1



- ## NOTES
1. ALL METAL PARTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
 2. FENCES AND GATES SHALL BE FURNISHED COMPLETE WITH ALL NECESSARY FITTINGS AND HARDWARE.
 3. FOR GATES, SIZES OF PIPE, SAG RODS AND TURNBUCKLES SHALL BE MANUFACTURER'S STANDARD WHICH ALSO MEET THE REQUIREMENTS OF THIS DRAWING.
 4. POSTS SHALL BE ROLLED OR EXTRUDED SECTIONS OR TUBING OF STEEL OR ALUMINUM CAPABLE OF WITHSTANDING A LATERAL FORCE OF 100 POUNDS APPLIED AT THE TOP. ALL HOLLOW POSTS SHALL BE CAPPED.
 5. STANDARD PIPE SIZES INDICATED ARE NOMINAL DIAMETER, SCHEDULE 40, PER AMERICAN STANDARDS ASSOCIATION (ASA) B 36.10.
 6. PROVIDE PLUNGE ROD AND LATCHES FOR ALL GATES IN OPEN AND CLOSED POSITION.
 7. INSTALL (1) KEYSECURE® MODEL 2600 KNOX-BOX AT GATE

LINE	SIC	O.S.	SOL. #8	
			WALL THICK	WT./FT.
TOP SOL./DATES	1'-5/8"	1.000"	0.143"	3.279
LINE POST	2-1/8"	2.375"	0.163"	3.886
CORNER	1"	4.000"	0.231"	5.168
DATE PUMPS	8-5/8"	8.625"	0.133"	29.368

ARMED & DANGEROUS
(TAPES, POSTER & GUYE FRANKS)

10-12-12
J.R. B. [Signature]
Frees and [Signature], Inc.
1000 Regency [Signature] Pkwy #2144



McFRESH NICHOLS
1700 N. Market Street, Suite 200, L.P. #1
Dallas, Texas 75202 • 2021
FAX • (214) 217-2200
Fax • (214) 217-2201

CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK

FENCE AND BOLLARD DETAILS

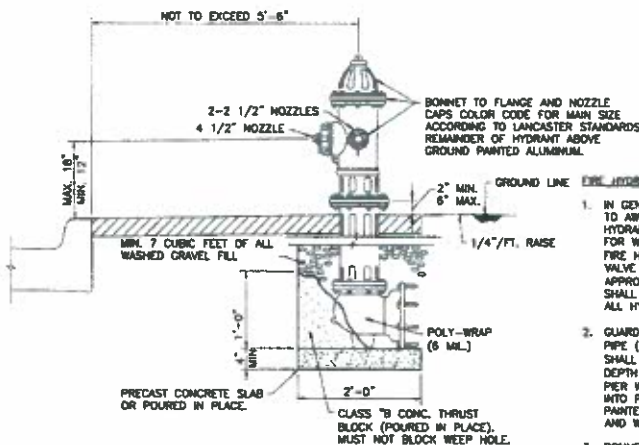
[illegible]

C-9

BID SET

523

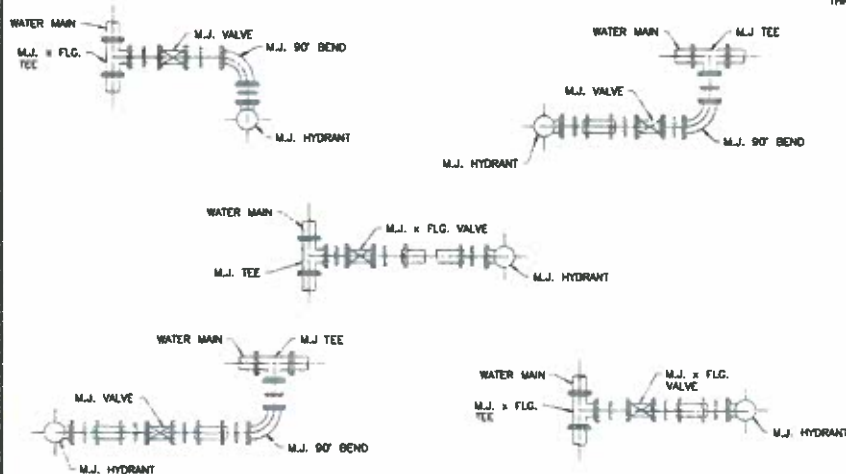
MCAL N01 18-25 (LPS 18-25) (MSG: 0222AF)
 (LCS11454) IN: UTA VANDERBILT-CY-93-01-FDC-ONG LAYOUT: FEDEX AND DOLLARD DETAILS
 10/12/70 07:22:56 A.M. ETS: 1.00 PSLTS: 1 TWST: 0.0



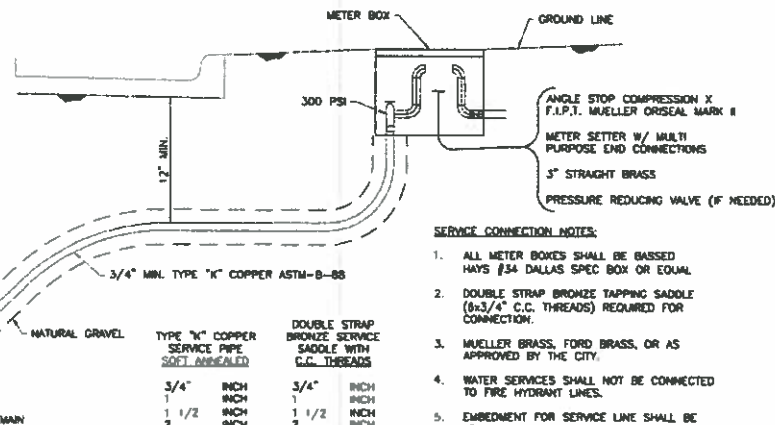
FIRE HYDRANT NOTES:

1. IN GENERAL ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARDS SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE FOR WATER AND SANITARY SEWER IMPROVEMENTS. FIRE HYDRANTS SHALL HAVE A 5-1/4" MINIMUM VALVE OPENING AND WITH A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL HYDRANTS SHALL BE APPROVED BY THE CITY.
2. GUARD POSTS SHALL BE 6 L.F. OF 8" DIA. STEEL PIPE (3' ABOVE & BELOW GROUND LEVEL). POST SHALL BE ENCASED IN 16" DIA. CONC. PIER TO A DEPTH OF 12" BELOW POST BOTTOM. REINF. CONC. PIER WITH 2 NO. 8 BARS (12" LONG) THRU POST INTO PIER. POST ABOVE GROUND LEVEL SHALL BE PAINTED ALUMINUM WITH 2-2 INCH BANDS OF RED AND WHITE REFLECTIVE TAPE.
3. BONNET COLOR WATER MAIN CAP LESS THAN 500 G.P.M. 500-999 G.P.M. 1,000-1,499 G.P.M. 1,500 & GREATER G.P.M. COLOR RED ORANGE GREEN BLUE

TYPICAL FIRE HYDRANT INSTALLATION



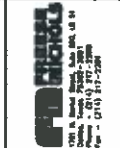
TYPICAL FIRE HYDRANT INSTALLATION PLANS



SERVICE CONNECTION NOTES:

1. ALL METER BOXES SHALL BE BASED HAYS #34 DALLAS SPEC BOX OR EQUAL.
2. DOUBLE STRAP BRONZE TAPPING SADDLE (0.3/4" C.C. THREADS) REQUIRED FOR CONNECTION.
3. MUELLER BRASS, FORD BRASS, OR AS APPROVED BY THE CITY.
4. WATER SERVICES SHALL NOT BE CONNECTED TO FIRE HYDRANT LINES.
5. EMBEDMENT FOR SERVICE LINE SHALL BE 6" ALL AROUND OF NATURAL SAND NCTC00 ITEM 2.1.8 (1).

TYPICAL SERVICE CONNECTION WITH METER BOX



CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
CIVIL
WATER LINE DETAILS

NO.	DATE	BY	CHKD.	APP'D.	REVISION
1	08/14/2012	DM	DM	DM	ISSUED FOR BIDDING
2	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
3	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
4	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
5	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
6	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
7	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
8	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
9	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED
10	08/14/2012	DM	DM	DM	REVISED TO ADD 1/2" MIN. GRAVEL BED

C-10

BID SET

SECTION B-B

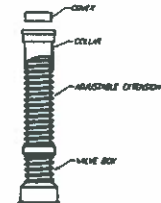
SECTION A-A

BUTTERFLY VALVE INSTALLATION

NOTE:
ACTIVATOR SHALL BE FOR
DIRECT BURY SERVICE

VALVE SETTING & BOX

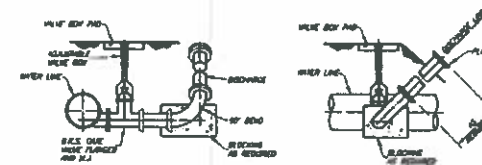
VALVE BOX PAD PLAN



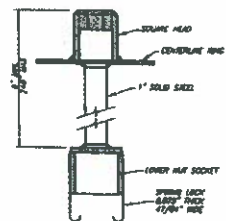
VALVE BOX WITH EXTENSION

INTERVIEW NOTES:

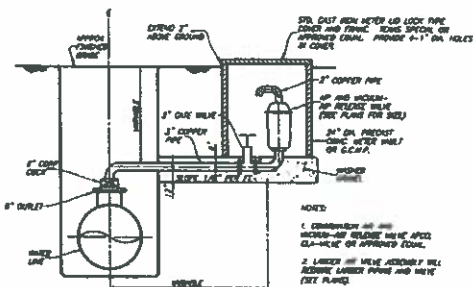
1. 1" TO 12" GUT VALUE SHALL BE REFINED SEARD WEDGET ONE INCHES ACCORDANCE WITH ASTM STANDARD C-308
2. A PERMANENTLY AFFIXED'S HAVE EXISTENCE SHALL BE REFINED FOR ANY VALUE GROUPS EXISTENCE ARE 6' AND 12" IN EXCESS OF 4' MUST BELOW THE 10' OF VALUE FOR THE EXISTENCE SHALL BE OF SUFFICIENT LENGTH TO MEASURE THAT THE 10' IS MORE 6' OF THE VALUE FOR COVER.



BLOW OFF VALVE



SPRING LOCK VALVE EXTENSION



AIR AND VACUUM - AIR RELEASE VALVE INSTALLATION

ADITYA

1. ~~CONDUCT~~ ~~IN~~ ~~THE~~
MIDDLE-AND EIGHTH FIVE AFTER
CL-ONE OF APPROX 1000.
2. ~~LOAN~~ ~~IN~~ ~~THE~~ ~~SECOND~~ ~~WILL~~
BEFORE LOAN FROM AND THE
NOT BORN.

CITY OF LANCASTER, TEXAS	
STANDARD CONSTRUCTION DETAILS	
WATER	
DATE: DECEMBER, 1988	Sheet WATER-02

A. L. Dillman
Fryma and McInnis, Inc.
Heavy Registered Engineering Firm F-2164



**FRANK
FRIESE
NICHOLS**
101 N. Highland Street, Suite 100, L.P. 51
Tulsa, Texas 74103-3003
Phone - (918) 817-2300
Fax - (918) 217-2301

CITY OF LANCASTER, TEXAS
20 MC ELEVATED STORAGE TANK

2.0 MG ELEVATED STORAGE TANK
CIVIL

CITY OF LANCASTER DETAILS

NO	TIME	IN	RACE	FYR AGE PR
				LCS11484
				JAN OCT. 2013
				HONEY
				JOHN
				LAKE
				WHEELS
				2013
WEIGHT SCALE	Bar 2 one inch from ground	FOOTING	FILE NAME	

C-11

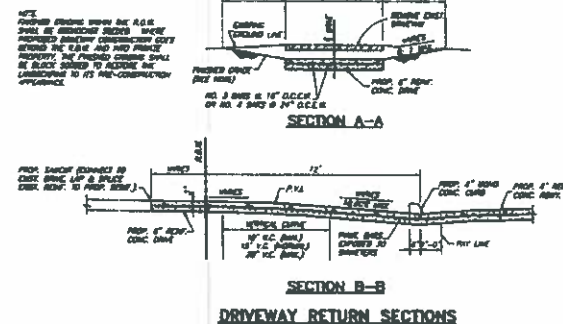
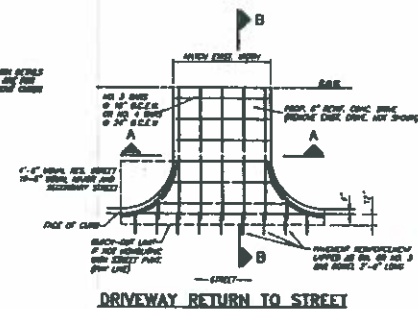
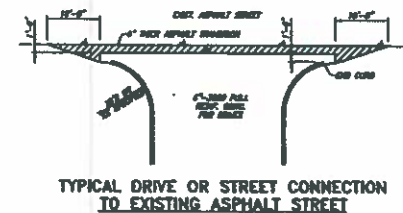
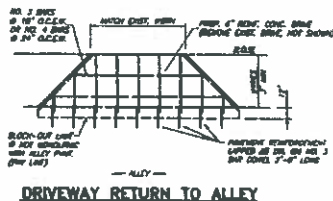
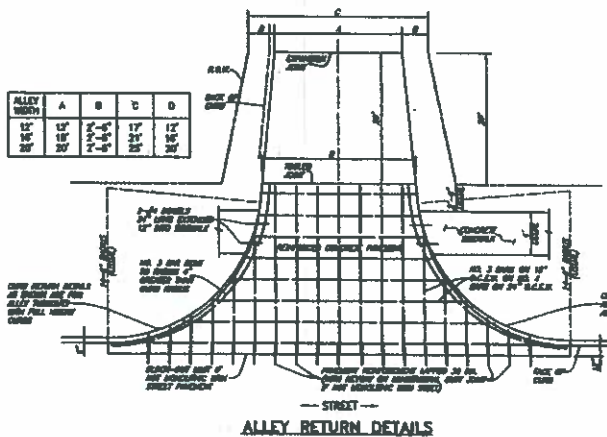
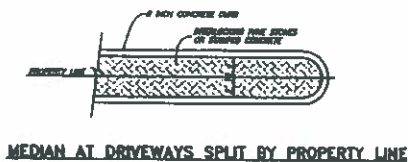
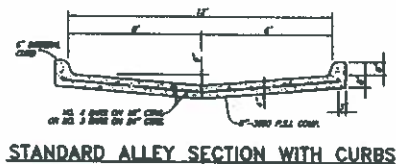
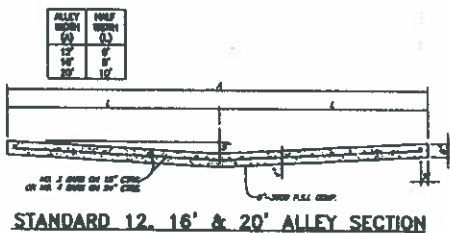
BID SET

12

ALAN HAY 12/26 (LMS, 1997) LANCASTER, TEXAS
 STANDARD CONSTRUCTION DETAILS
 PAVING / ALLEY / DRIVEWAYS
 CITY OF LANCASTER, TEXAS
 12/26/99

8/22/99

8/22/99



NO.	SECTION	DATE
1	CITY OF LANCASTER, TEXAS	
2	STANDARD CONSTRUCTION DETAILS	
3	PAVING / ALLEY / DRIVEWAYS	
4	DATE: DECEMBER, 1999	WHY: STREET-05



FRISCH NICHOLS
 CIVIL
 1000 N. 10th Street, Suite 100
 Lancaster, TX 77603
 Phone: (817) 777-2200
 Fax: (817) 777-2200

CITY OF LANCASTER, TEXAS
 2.0 MG ELEVATED STORAGE TANK
 CIVIL
 CITY OF LANCASTER DETAILS

NO.	SECTION	DATE
1	LOCI 1434	
2	REV. OCT. 2017	
3	REV. 1/17	
4	REV. 1/17	
5	REV. 1/17	
6	REV. 1/17	
7	REV. 1/17	
8	REV. 1/17	
9	REV. 1/17	
10	REV. 1/17	
11	REV. 1/17	
12	REV. 1/17	
13	REV. 1/17	
14	REV. 1/17	
15	REV. 1/17	
16	REV. 1/17	
17	REV. 1/17	
18	REV. 1/17	
19	REV. 1/17	
20	REV. 1/17	

C-12

BID SET

526

1/4" DIAMETER
1" LONG

[illegible][illegible][illegible]

NO.	DESCRIPTION	QTY	UNIT
CITY OF LANCASTER, TEXAS			
STANDARD CONSTRUCTION DETAILS			
PAVING / SIDEWALKS			
DATE:	DECEMBER , 1990	DRAWN BY	STREET-08

**FRESE
NICHOLS**
201 N. Main St., Suite 200, St. J.
Peters, Mo 64503-2001
Phone - (314) 219-2300
Fax - (314) 877-2201

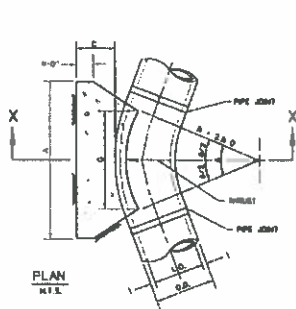
CITY OF LANCASTER DETAILS

[illegible]

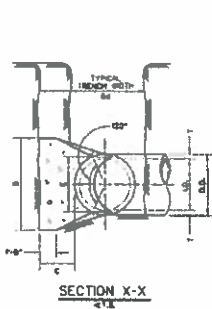
C-13

BID SET

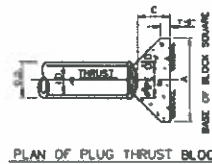
527



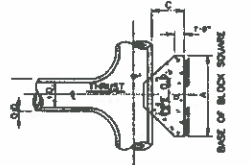
HORIZONTAL THRUST BLOCK AT PIPE BEND
N.T.S.



SECTION X-X
N.T.S.

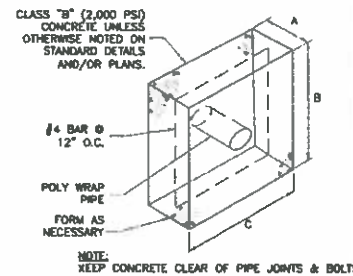


PLAN OF PLUG THRUST BLOCK
N.T.S.



PLAN OF TEE THRUST BLOCK
N.T.S.

PLUG AND TEE DIMENSIONS AND QUANTITIES						
			EARTH		ROCK	
L.O. IN.1	THRUST (TONS)	G F.T.1	A F.T.1	B F.T.1	A VOL IC.Y.1	A VOL IC.Y.1
4.6,8	1.0	1.5	2.5	0.3	2.0	0.2
10,12	1.5	2.5	3.5	0.6	2.5	0.3
14,16,18	2.0	3.5	4.5	1.0	3.0	0.4
20	2.5	4.5	5.5	1.6	4.0	0.9
24	3.0	5.5	6.5	2.0	5.0	1.2
28	3.5	6.5	7.5	2.4	5.5	1.4
32	4.0	7.5	8.5	2.8	6.0	1.6
36	4.5	8.5	9.5	3.2	6.5	1.8
40	5.0	9.5	10.5	3.6	7.0	2.0
44	5.5	10.5	11.5	4.0	7.5	2.2
48	6.0	11.5	12.5	4.4	8.0	2.4
52	6.5	12.5	13.5	4.8	8.5	2.6
56	7.0	13.5	14.5	5.2	9.0	2.8
60	7.5	14.5	15.5	5.6	9.5	3.0
64	8.0	15.5	16.5	6.0	10.0	3.2
68	8.5	16.5	17.5	6.4	10.5	3.4
72	9.0	17.5	18.5	6.8	11.0	3.6
76	9.5	18.5	19.5	7.2	11.5	3.8
80	10.0	19.5	20.5	7.6	12.0	4.0
84	10.5	20.5	21.5	8.0	12.5	4.2
88	11.0	21.5	22.5	8.4	13.0	4.4
92	11.5	22.5	23.5	8.8	13.5	4.6
96	12.0	23.5	24.5	9.2	14.0	4.8



VERTICAL TIE-DOWN BLOCK DETAIL
N.T.S.

GENERAL NOTES FOR ALL THRUST BLOCKS:

- CONCRETE FOR BLOCKING SHALL BE CLASS "B".
- ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI TO DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
- VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
- WALL THICKNESS 171 ASSUMED FOR ESTIMATING PURPOSES ONLY.
- PLACE CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
- DIMENSIONS MAY VARY AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN.
- SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.T. IN SOIL AND 2000 LBS./S.F. IN ROCK.
- USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM BONDING TO IT.
- CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

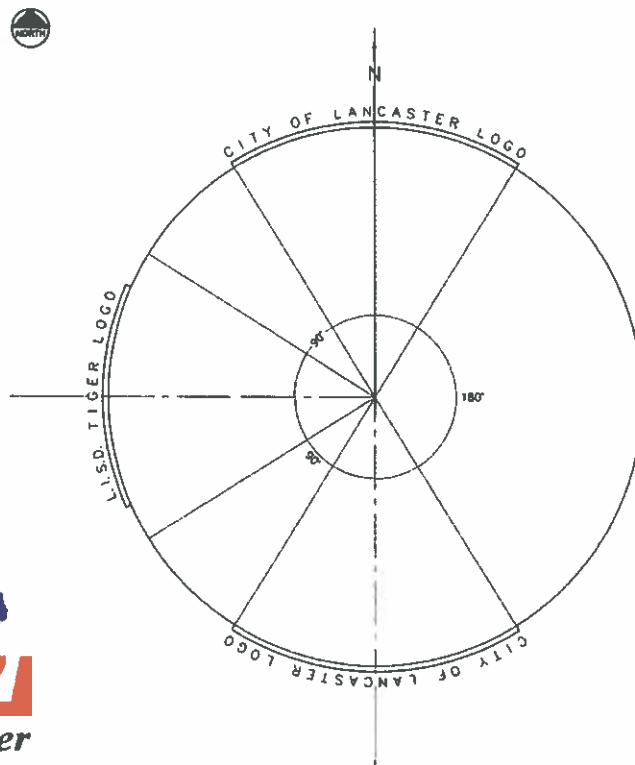
Δ - 11.25°										Δ - 22.50°									
L.O. IN.1	G 1FT.1	THRUST (TONS)	EARTH			ROCK			L.O. (IN.1)	G 1FT.1	THRUST (TONS)	EARTH			ROCK				
			A 1FT.1	B 1FT.1	VOL. 1 C.V.7	A 1FT.1	B 1FT.1	VOL. 1 C.V.7				A 1FT.1	B 1FT.1	VOL. 1 C.V.7	A 1FT.1	B 1FT.1	VOL. 1 C.V.7		
4,6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4,6,8	0.6	2.0	1.5	1.5	1.0	1.0	1.0	0.1		
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1		
14,16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3		
20	0.9	8.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4		
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5		
28	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.6		
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	38	3.3	29.8	5.5	5.5	2.5	4.0	4.0	1.3		
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.6	40.5	7.0	8.0	3.9	4.5	3.0	2.1		
48	2.2	26.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.6		
54	2.5	33.7	6.0	8.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	6.0	8.0	6.0	8.0	4.1		
60	2.7	41.6	6.0	7.0	3.6	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.6	8.0	7.0	5.3		
66	3.0	55.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	108.1	10.5	10.0	11.1	6.5	8.0	7.2		
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	8.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1		
78	3.8	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7		
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.8	162.1	13.0	12.5	27.2	8.5	10.0	14.6		
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	186.1	14.0	13.5	33.7	9.5	10.0	17.7		
96	4.4	106.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8		

L.O. (IN.)	T (IN.)	Δ - 11.25° FT.1		Δ - 22.50° (FT.1)		E (FT.1)
4,6,8	0.4	1.5	1.5	1.5	0.9	0.9
10,12	0.5	1.5	1.5	1.5	1.2	1.2
14,16,18	0.6	1.5	1.5	1.5	1.6	1.6
20	0.7	1.5	1.5	1.5	1.8	1.8
24	0.9	1.5	1.5	1.5	2.1	2.1
30	1.0	1.5	1.5	1.9	2.6	2.6
36	1.1	1.5	1.5	2.3	3.3	3.3
42	1.2	1.5	1.8	2.6	3.8	3.8
48	1.3	1.5	2.0	3.0	4.3	4.3
54	1.4	1.5	2.3	3.4	4.8	4.8
60	1.5	1.5	2.5	3.8	5.3	5.3
66	1.6	1.5	2.8	4.1	5.7	5.7
72	1.7	1.5	3.0	4.5	6.3	6.3
78	1.8	1.5	3.3	4.9	6.7	6.7
84	1.9	1.5	3.5	5.3	7.2	7.2
90	2.0	1.5	3.8	5.6	7.7	7.7
96	2.1	1.5	4.0	6.0	8.2	8.2

Δ - 67.50°										Δ - 90°									
			EARTH			ROCK						EARTH			ROCK				
L.O. IN.1	G (FT.1)	THRUST (TONS)	A (FT.1)	B (FT.1)	C (T.C.Y.)	A (FT.1)	B (FT.1)	C (T.C.Y.)	L.D. IN.1	G (FT.1)	THRUST (TONS)	A (FT.1)	B (FT.1)	C (T.C.Y.)	A (FT.1)	B (FT.1)	C (T.C.Y.)		
4.6,8	2.1	1.5	3.0	2.0	0.5	2.0	1.5	0.2	4.6,8	2.7	1.0	5.0	1.5	0.4	2.0	2.0	0.3		
10,12	3.1	12.6	5.5	2.5	0.8	3.5	2.0	0.4	10,12	4.0	18.0	6.5	2.5	1.0	3.5	2.5	0.5		
14,16,18	4.7	28.3	7.5	4.0	1.9	5.5	3.0	0.9	14,16,18	6.0	38.0	9.0	4.0	2.4	4.5	4.0	1.0		
20	5.2	34.9	9.0	4.0	2.3	5.3	3.5	1.2	20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5		
24	6.2	50.3	11.5	4.5	3.5	8.5	4.0	1.6	24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.0		
28	7.8	58.9	12.0	5.0	4.8	7.5	4.0	2.2	28	9.9	75.0	15.0	5.0	6.7	10.0	4.0	3.0		
32	9.4	84.9	14.5	6.0	8.2	9.5	4.5	3.8	32	11.9	108.0	18.0	6.0	11.4	12.0	4.5	3.8		
42	10.9	115.5	17.0	7.0	12.8	11.0	5.5	6.3	42	13.9	147.0	21.0	7.0	17.8	14.0	5.5	8.7		
48	12.5	150.9	19.0	8.0	14.8	13.0	6.0	9.2	48	15.9	192.0	24.0	8.0	26.2	18.0	6.0	12.4		
54	14.0	181.0	21.0	9.0	28.0	15.0	8.5	12.9	54	17.9	243.0	27.0	9.0	36.9	18.0	7.0	18.9		
60	15.6	235.8	24.0	10.0	35.8	18.0	7.5	17.6	60	19.9	299.8	30.0	10.0	50.3	20.0	7.5	24.8		
66	17.1	285.3	28.0	11.0	46.0	18.0	8.0	23.0	66	21.8	362.8	33.0	11.0	88.2	22.0	8.5	32.3		
72	18.7	339.9	28.5	12.0	57.8	19.0	9.0	28.4	72	23.8	431.8	36.0	12.0	95.6	24.0	9.0	41.1		
78	20.2	398.5	31.0	13.0	75.7	21.0	9.5	37.4	78	25.7	508.7	39.0	13.0	108.2	28.0	10.0	53.3		
84	21.6	482.1	33.5	14.0	94.7	22.0	10.5	46.5	84	27.7	587.7	42.0	14.0	134.4	28.0	10.5	64.1		
90	23.3	530.5	35.5	15.0	114.4	24.5	11.0	58.2	90	29.0	674.8	45.0	15.0	166.9	30.0	11.5	81.1		
96	24.9	603.6	38.0	16.0	158.9	25.5	12.0	70.0	96	31.6	767.5	48.0	16.0	199.0	32.0	12.0	98.1		



CITY OF LANCASTER LOGO
& LOGO PLACEMENT
 NOT TO SCALE



Lady Tiger Track
State Championships 01,02,03,04,05,06,07,08,12

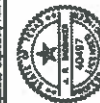
Tiger Track State Championships
03,04,08,09,10,11,12

L.I.S.D. TIGER LOGO
& LOGO PLACEMENT
NOT TO SCALE

NOTE:
CONTRACTOR SHALL PROVIDE ARCHITECTURAL
RENDERING OF THE LANCASTER CITY & L.I.S.D.
LOGOS, SHOWING PROPOSED SIZE AND COLOR
FOR OWNER'S APPROVAL, PRIOR TO
CONSTRUCTION.

PC/LA) de la 2e LUS rect Laser: LAM
[C:\S1\454] \P\L\UTL\DRUMOS\CV-MSJ-DT-TANCOZ.DWG LAYOUT: TANK PLANT PLAN
06/03/2012 12:04:38 P.M. LTA : 0.00 PS/LTS : TIMES: 0.0
WORKING FILE: 49497 - A:\TANCOZ\TANCOZ.DWG AND M:\STATION\S2-A-JB

2/10/12



CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK

TANK PAINT PLAN
CIVIL[illegible]**BID SET**

[illegible]

NOTE:
THIS IS A STANDARD LEGEND. THEREFORE,
NOT ALL OF THIS INFORMATION MAY BE
USED ON THIS PROJECT.

NUMBER

SHEET NUMBER WHERE TAKEN

SHEET NUMBER WHERE DRAWN

IDENTIFIER

REFERENCE

RE: X-100 SHEET NUMBER

PLAN SYMBOL		DESCRIPTION
	J	JUNCTION BOX
	PB	PULL BOX
	TC	TERMINAL CABINET
	OS	OCCUPANCY SENSOR
	PC	PHOTOCELL
	PW	PREWIRED
	MH	MANHOLE
	UM	UTILITY METER
	ML	MOTORIZED LOUVER
	DAMP	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION UNLESS OTHERWISE NOTED
	WET	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4 CONSTRUCTION UNLESS OTHERWISE NOTED
	CORROSIVE	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION UNLESS OTHERWISE NOTED
	CLASS I, DIV. 1, GROUP D	INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO N.E.C. REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN

ONE-LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
	□ OR ▢	PANEL
		MOTOR, NUMBER DESIGNATES HORSEPOWER
	-	VOLTMETER (WITH SWITCH IF 3-PHASE)
	-	AMMETER (WITH SWITCH IF 3-PHASE)
	-	METER WM - WATTMETER WHM - WATTHOUR METER WHDM - WATTHOUR DEMAND WHDM - WATTHOUR DEMAND PT - POWER FACTOR METER ETM - ELAPSED TIME METER TRANSDUCER AX - CURRENT TRANSDUCER WX - WATT TRANSDUCER
	-	RELAY, NO. AS INDICATED 26 - SYNCHRONISM CHECK RELAY 27 - UNDER VOLTAGE RELAY 30 - BEARING PROTECTIVE DEVICE 40 - LOSS OF EXCITATION RELAY 42 - RUNNING CONTACTOR/PILOT 46 - REVERSE PHASE/PHASE BALANCE 47 - PHASE SEQUENCE VOLTAGE 48 - MACHINE OR TRANSFORMER 50 - INSTANTANEOUS OVERCURRENT 50G - INSTANTANEOUS GROUND 51 - TIME OVER CURRENT RELAY TYPE 51N - TIME OVERCURRENT RELAY 51Y - TIME OVERCURRENT RELAY RESTRAINT 59 - OVER VOLTAGE RELAY 60 - NEGATIVE SEQUENCE VOLTAGE 62 - TIME DELAY RELAY 63 - OVER PRESSURE RELAY 67 - AC DIRECTIONAL OVERCURRENT 83 - AUTOMATIC SELECTIVE CONTROL 87 - LOCKING-OUT RELAY 88 - DIFFERENTIAL PROTECTIVE B - SUFFIX INDICATES "BUS" G - SUFFIX INDICATES "GENERATOR" GF - GROUND FAULT IF - INTERPOSING RELAY PFR - PHASE FAILURE, PHASE REVERSE OVERVOLTAGE RELAY ST - SHUNT TRIP T - SUFFIX INDICATES "TRANSFORMER" TRIP CAP - CAPACITOR TRIP X - SUFFIX INDICATES "AUXILIARY"

ONE-LINE OR CONTROL DIAGRAM	PLAN	DESCRIPTION
		PANEL
		MOTOR, NUMBER DESIGNATES HORSEPOWER
	-	VOLTMETER (WITH SWITCH IF 3-PHASE)
	-	AMMETER (WITH SWITCH IF 3-PHASE)
	-	METER WM - WATTMETER WHM - WATTHOUR METER WHDM - WATTHOUR DEMAND METER WHDR - WATTHOUR DEMAND RECORDER PF - POWER FACTOR METER STM - CLASPED TIME METER TRANS-DUCER AX - CURRENT TRANS-DUCER WX - WATT TRANS-DUCER
	-	RELAY, NO. AS INDICATED 25 - SYNCHRONISM CHECK RELAY 27 - UNDER VOLTAGE RELAY 38 - BEARING PROTECTIVE DEVICE 40 - LOSS OF EXCITATION RELAY 42 - RUNNING CONTACTOR/PILOT RELAY 46 - REVERSE PHASE/PHASE BALANCE/CURRENT RELAY 47 - PHASE SEQUENCE VOLTAGE RELAY 48 - MACHINE OR TRANSFORMER THERMAL RELAY 50 - INSTANTANEOUS OVERCURRENT RELAY 50G - INSTANTANEOUS GROUND 51 - TIME OVER CURRENT RELAY, GROUNDING RESISTOR TYPE 51N - TIME OVERCURRENT RELAY, RESIDUAL TYPE 51Y - TIME OVERCURRENT RELAY WITH VOLTAGE RESTRAINT 52 - OVER VOLTAGE RELAY 60 - NEGATIVE SEQUENCE VOLTAGE RELAY 62 - TIME DELAY RELAY 63 - OVER PRESSURE RELAY 67 - AC DIFFERENTIAL OVERCURRENT RELAY 83 - AUTOMATIC SELECTIVE CONTROL OR TRANSFER RELAY 88 - LOCKING-OUT RELAY 87 - DIFFERENTIAL PROTECTIVE RELAY B - SUFFIX INDICATES "BUS" G - SUFFIX INDICATES "GENERATOR" GF - GROUND FAULT H - INTERPOSING RELAY PTR - PHASE FAILURE, PHASE REVERSAL, UNDERVOLTAGE OVERVOLTAGE RELAY ST - SHUNT TRIP T - SUFFIX INDICATES "TRANSFORMER" TRP CAP - CAPACITOR TRIP X - SUFFIX INDICATES "AUXILIARY"



FREE INFORMATION

CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK

ELECTRICAL

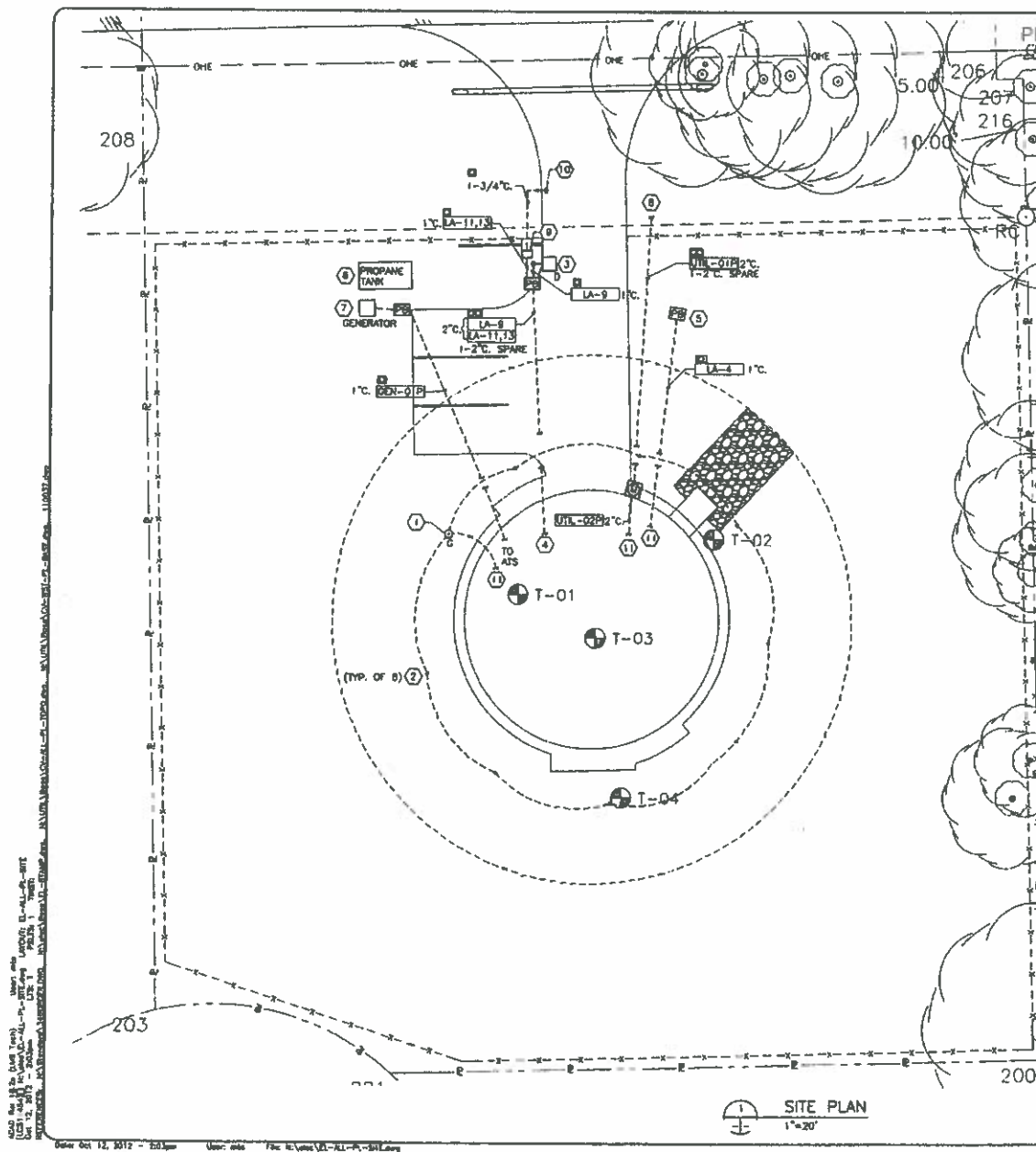
LEGEND

[illegible]

E-1

BID SET

17



GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE LOCAL ELECTRICAL UTILITY FOR UTILITY REQUIREMENTS, PROVIDE CONDUIT, SWEEPS, AND METER CAN AS REQUIRED.
2. ALL LIGHTING CIRCUIT CONDUCTORS SHALL BE A MINIMUM OF 2 #12, #12G, UNLESS OTHERWISE NOTED.
3. COORDINATE LIGHTING PROTECTION WITH GROUNDING SYSTEM.
4. ALL SPARE OR OTHERWISE EMPTY CONDUIT SHALL BE PROVIDED WITH NYLON PULL CORDS.

NOTES BY SYMBOL "O"

1. GROUND ROD 20' APART, #2G, (TYP.), RE: 4/E-7.
2. GROUND ROD WITHOUT TEST WELL.
3. LIGHT POLE SHALL BE INSTALLED SUCH THAT THE POLE BREAKS PARALLEL TO THE FENCE LINE FOR MAINTENANCE PURPOSES.
4. LIGHTING CIRCUIT TO PANEL "LA" VIA LIGHTING CONTACTOR.
5. ALL CONDUCTORS FOR IRRIGATION CONTROLLER SHALL TERMINATE IN PULL BOX. CAP ALL TERMINATED CONDUCTORS. COORDINATE WITH IRRIGATION CONTRACTOR.
6. PROPANE TANK FOR STAND BY GENERATOR TO BE PROVIDED BY OWNER. PROVIDE EQUIPMENT PAD, COORDINATE REQUIREMENTS AND LOCATION WITH OWNER.
7. STANDBY GENERATOR TO BE PROVIDED BY OWNER. PROVIDE CONCRETE PAD FOR GENERATOR. COORDINATE ALL GENERATOR REQUIREMENTS AND LOCATION WITH OWNER. THE GENERATOR IS MAINTAINED AND SERVICED BY ENTECH GENERATOR SALES & SERVICE. CONTACT MATTHEW AT 972-485-1171 WITH ENTECH FOR DETAILS.
8. TO LOCAL UTILITY SERVICE.
9. GATE OPERATOR WITH EXOT GROUND LOOP. RE: 142/E-8 FOR DETAILS.
10. GATE OPERATOR KEY PAD. RE: 3/E-8 FOR DETAILS.
11. TO PANEL "LA"



CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
ELECTRICAL
SITE PLAN

NO.	DATE	BY	CHKD	APP'D	REVISION
1	11/03/12				ISSUED FOR BIDDING
2					
3					
4					
5					
6					
7					
8					
9					
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11					
12					
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19					
20					



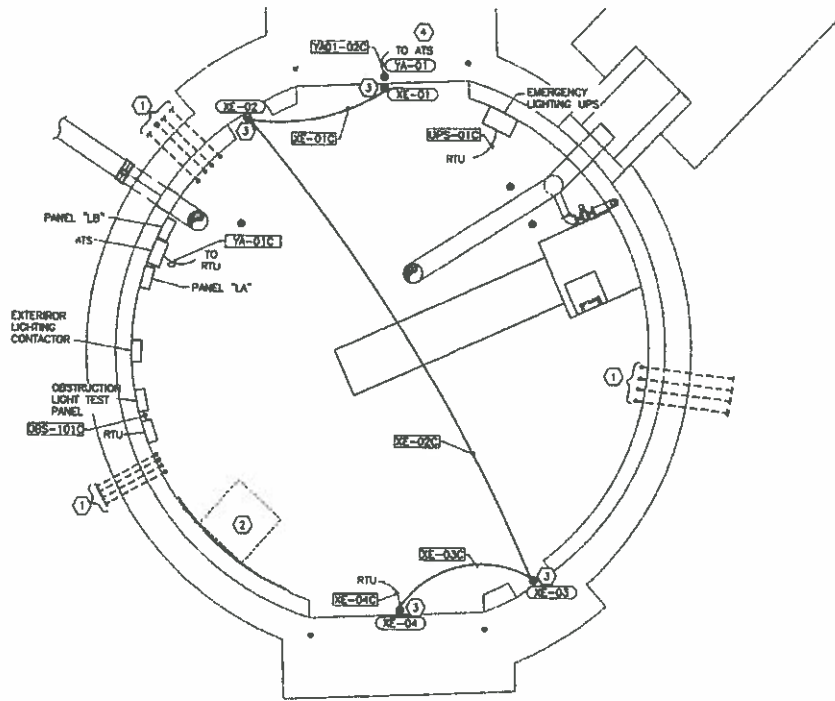
-   **ELEVATED STORAGE TANK PLAN**
1/4" = 1' - 0"

GENERAL NOTES:

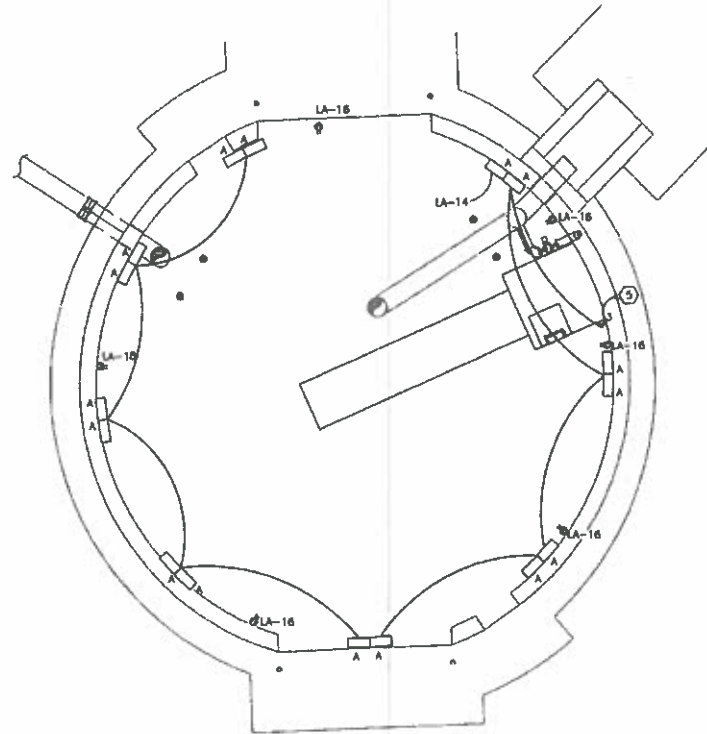
1. POWER DISCRETE AND ANALOG CONDUCTORS SHALL BE ROUTED IN SEPARATE CONDUITS.
2. GENERAL RECEPTACLES AND LIGHTING FOR SECOND FLOOR SHALL BE INCLUDED IN ALTERNATE BID ITEM NUMBER C1.
3. ALL FIXTURE TYPE A LIGHTS ON SECOND FLOOR SHALL BE MOUNTED AT 7'-0" FROM FINISHED FLOOR TO BOTTOM OF FIXTURE.

NOTES BY SYMBOL "O"

1. PROVIDE 4"-6" PVC SPARE CONDUITS INSIDE TANK. PEDESTAL, SPARE CONDUITS SHALL EXTEND A MINIMUM OF 10'-0" BEYOND PROPOSED PAVEMENT OUTSIDE THE PEDESTAL TO AN EASILY ACCESSIBLE LOCATION. STUB UP INSIDE THE PEDESTAL, CAP AND PROVIDE NYLON PULL CORD FOR ALL SPARE CONDUITS.
2. 6'-0" BY 6'-0" WALL SPACE AND 4'-0" BY 4'-0" FLOOR SPACE DESIGNATED FOR FUTURE USE BY OWNER FOR COMMUNICATIONS EQUIPMENT.
3. INTRUSION DETECTION SWITCHES SHALL BE NORMALLY CLOSED TYPE AND WIRED IN SERIES.
4. PROVIDE RED INDICATION ALARM LAMP TO INDICATE STAND BY GENERATOR ACTIVE STATUS. MODIFY EXISTING ATS AS REQUIRED. COORDINATE ITS WORK WITH ENTECH GENERATOR SALES & SERVICE. CONTACT MATTHEW AT 972-468-1171.
5. TO FIRST FLOOR LIGHTING CIRCUIT, RE: 2/E-4 TO BE INCLUDED AS ALTERNATE BID ITEM C1.



1 INSTRUMENTATION PLAN
1/4" = 1' - 0"



2 SECOND FLOOR POWER PLAN
1/4" = 1' - 0"



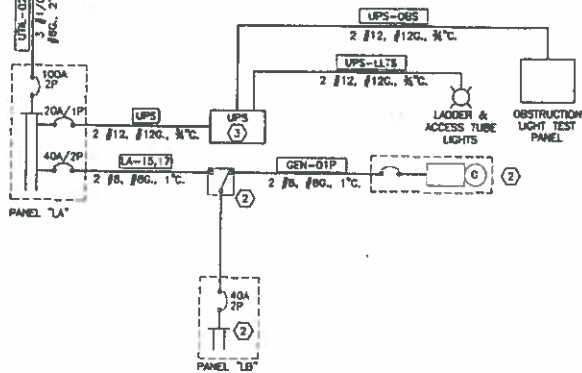
CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
ELECTRICAL
INSTRUMENTATION FLOOR PLAN
1ST AND 2ND FLOOR POWER PLAN

NO.	DATE	BY	CHKD	APP'D	REVISION
1	08/11/10	JL	ML	ML	REVISED FOR 2010
2	08/11/10	JL	ML	ML	REVISED FOR 2010
3	08/11/10	JL	ML	ML	REVISED FOR 2010
4	08/11/10	JL	ML	ML	REVISED FOR 2010
5	08/11/10	JL	ML	ML	REVISED FOR 2010
6	08/11/10	JL	ML	ML	REVISED FOR 2010
7	08/11/10	JL	ML	ML	REVISED FOR 2010
8	08/11/10	JL	ML	ML	REVISED FOR 2010
9	08/11/10	JL	ML	ML	REVISED FOR 2010
10	08/11/10	JL	ML	ML	REVISED FOR 2010

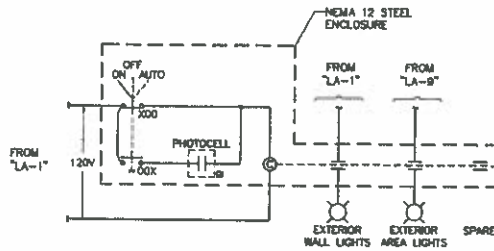
BID SET
E-5
21

NOTES BY SYMBOL

- CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING COAXIAL CABLE AND CONDUIT FROM RTU TO ANTENNA.
- GENERATOR, ATS AND SUB-PANEL "LB" SHALL BE PROVIDED BY THE OWNER.
- PROVIDE 1.5KW EMERGENCY LIGHTING UPS TO PROVIDE A MINIMUM OF 120 MINUTES OF EMERGENCY POWER. UPS SHALL BE PROVIDED IN A NEMA 3R ENCLOSURE. THE UPS EQUIPMENT IS SPECIFIED BASED UPON ILLUMINATOR SERIES ES AS SUPPLIED BY HYDRA POWER PRODUCTS. CONDUIT SHALL NOT BE ROUTED ON THE OUTSIDE OF THE TANK PEDESTAL.
- CONDUIT TO BE INCLUDED WITH THE 2ND FLOOR ALTERNATE BID ITEM CL.



ONE LINE DIAGRAM
NOT TO SCALE



- GENERAL NOTE NO.2:
- CONTACTS SHALL BE RATED FOR 30 AMPS AT 120V.

EXTERIOR LIGHTING CONTACTOR
CONTROL SCHEMATIC
NOT TO SCALE

INTERCONNECTION DIAGRAM

LOOP	EQUIPMENT DESCRIPTION	FIELD DEVICE/FIELD WIRING
101	OBSTRUCTION LIGHT TEST PANEL LIGHT FAILURE	OB-101C 4 #14, #14G, 3/4" C. (2 #14 SPARE)
201	PRESSURE TRANSMITTER	PT-201A 2PR. #18 SHLD. 1" C. (1PR. SPARE)
301	INTRUSION DETECTION	XE-01 2 #14, #14G, 3/4" C. XE-02 2 #14, #14G, 3/4" C. XE-03 2 #14, #14G, 3/4" C. XE-04 2 #14, #14G, 3/4" C. XE-05 2 #14, #14G, 3/4" C.
401	ANTENNA	ANT-01 2 #14, #14G, 3/4" C.
401	LADDER LIGHTING UPS FAULT AND BATTERY STATUS	UPS-01C 4 #14, #14G, 1" C. (2 #14 SPARE)
501	GENSET RUN INDICATE	YA-01C 2 #14, #14G, 3/4" C. YA-01C 2 #14, #14G, 3/4" C.

PANEL NO.		LA		MB		YB		AMP		LOCATION TANK PEDESTAL	
SERVICE VOLTAGE		120/240		VOLTS		BUS RATING		125		AMP	
AIC		10,000				NEUTRAL BUS		125		AMP	
										FEED FROM UTILITY TRANSFORMER	
DESCRIPTION	BREAKER POLE	AMP	VOLTS	AMP	DESCRIPTION	BREAKER POLE	AMP	VOLTS	AMP	DESCRIPTION	
EXTERIOR LIGHTS & LIGHTING CONTACTOR	1	20	450		1	20	600		1	20	RTU
LADDER LIGHTS (LPS)	1	20		1000	1	20		200	1	20	IRRIGATION CONTROLLER
INTERIOR LIGHTS	1	20	854		1	20	350		1	20	OUTSIDE RECEPTACLES
SPARE	1	20		1000	1	20		1000	1	20	INTERIOR RECEPTACLES
POLE LIGHT	1	20	250		1	20	350		1	20	LADDER RECEPTACLES
GATE OPERATOR	2	30	380	11	12	180	1	20			RECEPTACLE 3/7 TOP OF TANK
COMMUNICATION SUB PANEL "LB"	1	40	2400	15	16	840	1	20			2ND FLOOR LIGHTS
											2ND FLOOR RECEPTACLES
											3RD FLOOR RECEPTACLES
SPARE	1	20	1000	19	20	1000	1	20			SPARE
SPARE	1	20	1000	21	22						
SPARE	1	20	1000	23	24						SPD
CONNECTED BUS A	7.85A	VA	8274	7500	VA	2824	3000	VA			DEMAND KVA
CONNECTED BUS B	7.85A	VA		TOTAL	10200	VA					DEMAND AMP
											NOTE: * INDICATES OF BREAKER

NOTE: * INDICATES GFI BREAKER

LIGHTING FIXTURE SCHEDULE

FIXTURE	TYPE	MANUFACTURER	CATALOG NO.	VOLT.	DESCRIPTION
A	TAB-SAFE	155RC-JR-100-1P-RMB-RC	129	120	PROVIDE LEM-BED 8 BUBBLED FIXTURE WITH CLEAR POLYCARBONATE LENS, TWO TUBES ELECTRONIC BALLAST AND RATED FOR LOW TEMPERATURE STARTING. MOUNT VERTICALLY AS SHOWN ON PLANS.
B	LITHONIA	TWH-175W-125-SC-WALL-P	128	120	175W PULSE START METAL HALIDE WALL PACK WITH DARK BRONZE FINISH.
C	CROUSE-HINDT	WF 624 P21	120	120	WF SERIES FIXTURE WITH TWO (2) COMPACT FLUORESCENT LAMPS, CLEAR GLASS GLOBE AND WIRE GUARD. PENDANT MOUNT WITH 34" CONDUIT AND WALL MOUNT AS SHOWN ON PLANS.
D	LITHONIA	FIXTURE: AS1-120W-RC-SR-RC-128-SC-WALL-001	128	120	GENERAL PURPOSE AREA LIGHT FIXTURE WITH PULSE START CERAMIC METAL HALIDE LAMP AND TYPE IV LIGHT DISTRIBUTION ON A 24" SQUARE, STURDY, FINISHED STEEL POLE.
E	COOPER	VEL-1-60	120	120	60W LIGHTS DEL SERIES EMERG EXCT LIGHT WITH SELF DIMINUTICS.

LIGHTING FIXTURE SCHEDULE NOTES:

- FIXTURE MODEL NUMBERS ARE USED TO ESTABLISH MINIMUM QUALITY AND PERFORMANCE STANDARDS AND NOT TO ESTABLISH MOUNTING TYPE. MOUNTING REQUIREMENTS MAY VARY FOR THE SAME TYPE OF FIXTURE THROUGHOUT THE PROJECT. CONTRACTOR SHALL VERIFY INSTALLATION LOCATION AND PROVIDE APPROPRIATE MOUNTING HARDWARE FIXTURE TYPE DESIGN FOR EACH LOCATION.

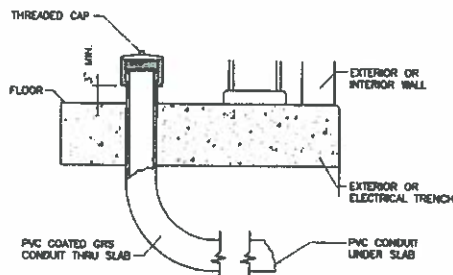


CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
ELECTRICAL
INTERCONNECTION DIAGRAM & DETAILS

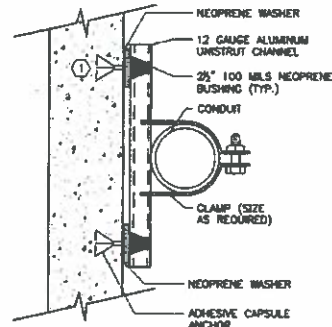
REV	DATE	BY	CHKD	DESCRIPTION
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2	10/12/12	WJ	WJ	REVISED FOR BIDDING
3	10/12/12	WJ	WJ	REVISED FOR BIDDING
4	10/12/12	WJ	WJ	REVISED FOR BIDDING
5	10/12/12	WJ	WJ	REVISED FOR BIDDING
6	10/12/12	WJ	WJ	REVISED FOR BIDDING
7	10/12/12	WJ	WJ	REVISED FOR BIDDING
8	10/12/12	WJ	WJ	REVISED FOR BIDDING
9	10/12/12	WJ	WJ	REVISED FOR BIDDING
10	10/12/12	WJ	WJ	REVISED FOR BIDDING

BID SET

E-6
22

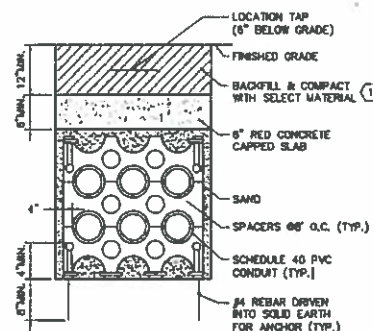


1 CONDUIT FLOOR ENTRANCE
NOT TO SCALE



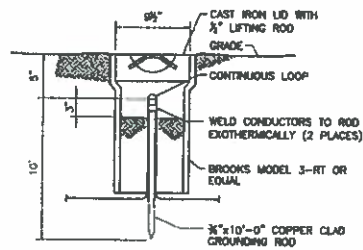
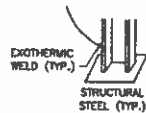
NO.2 NOTES BY SYMBOL - (O)
1. COORDINATE MOUNTING HARDWARE WITH TANK MANUFACTURER.

2 CEILING OR WALL EXPOSED
CONDUIT INSTALLATION
NOT TO SCALE

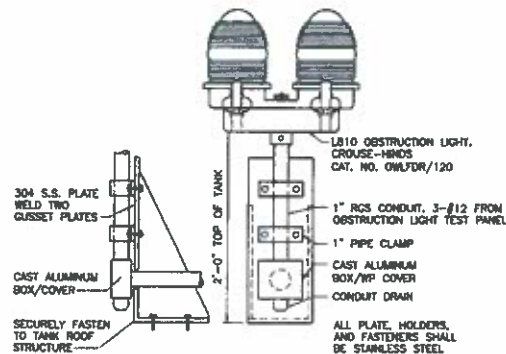


NO.3 NOTES BY SYMBOL - (O)
1. SELECT BACKFILL TO BE CLASS 4 EARTH FILL. FILL SHALL CONSIST OF MATERIALS WHICH ARE CLASSIFIED AS SP, SM, CL OR DUAL CLASSIFICATIONS THERE OF, WHICH HAVE A LIQUID LIMIT LESS THAN OR EQUAL TO 35 AND A PLASTICITY INDEX OF A MINIMUM OF 4 AND A MAXIMUM OF 15, WHICH ARE FREE OF ORGANIC MATERIALS.

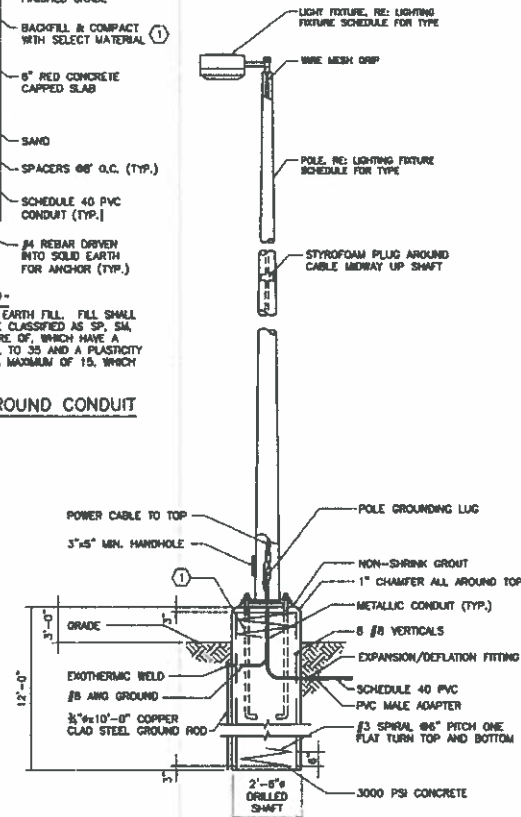
3 CAPPED UNDERGROUND CONDUIT
NOT TO SCALE



4 GROUND ROD DETAIL
NOT TO SCALE



5 OBSTRUCTION LIGHT
NOT TO SCALE



NO.6 GENERAL NOTES:
ALL BOLTS, WASHERS, NUTS AND OTHER FASTENERS SHALL BE STAINLESS STEEL.

NO.6 NOTES BY SYMBOL - (O)
1. 1 INCH x 24 INCH HEADED ANCHOR RODS, MINIMUM. (COORDINATE WITH POLE MANUFACTURER.)

6 LIGHT POLE & BASE
NOT TO SCALE



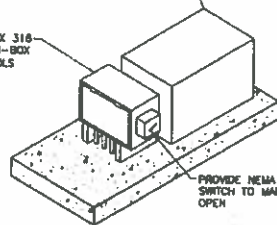
CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
ELECTRICAL
DETAILS

DATE	BY	CHKD	APP'D	REV	DESCRIPTION
10/11/14	LD	LD	LD	1	ISSUED FOR BIDDING
10/11/14	LD	LD	LD	2	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	3	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	4	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	5	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	6	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	7	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	8	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	9	REVISED TO ADD 2.0 MG
10/11/14	LD	LD	LD	10	REVISED TO ADD 2.0 MG

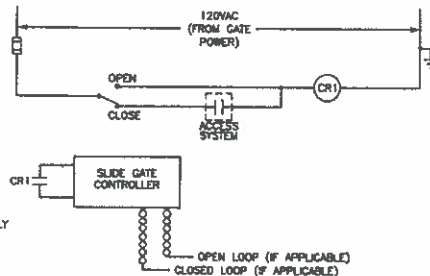
BID SET

PROVIDE DOORING B130, AMP VEHICULAR SLIDE GATE OPERATOR. COORDINATE CONTROLS WITH MANUFACTURER. MANUFACTURER'S REPRESENTATIVE SHALL ASSIST W/INSTALLATION AND SETUP

PROVIDE NEMA 4X 316 SS ENCLOSURE J-BOX W/REQ'D CONTROLS



PROVIDE NEMA 4X SWITCH TO MANUALLY OPEN



NO.1 GENERAL NOTES:
1. ENTRANCE GATE SHALL OPEN WHEN THE CONTROL ARM OPENS (AFTER HOURS).

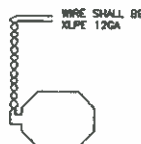
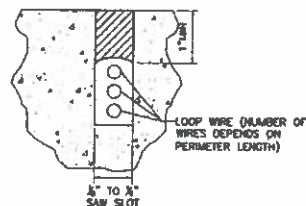
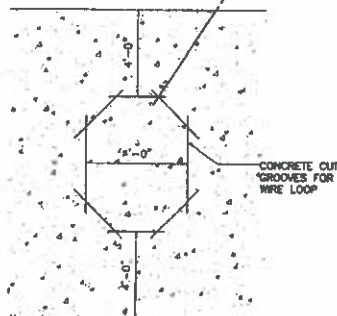
SLIDE GATE OPENER (ENTRANCE/EXIT TYP)



NOT TO SCALE

LOOP PERIMETER	NUMBER OF TURNS
10 FEET TO 13 FEET	3
14 FEET TO 20 FEET	4
21 FEET TO 28 FEET	5
29 FEET TO 45 FEET	6
46 FEET TO 100 FEET	7
101 FEET AND UP	8

TWISTED WIRES MUST BE A MIN OF 6 TURNS PER FOOT (ON THE HOMERUN)

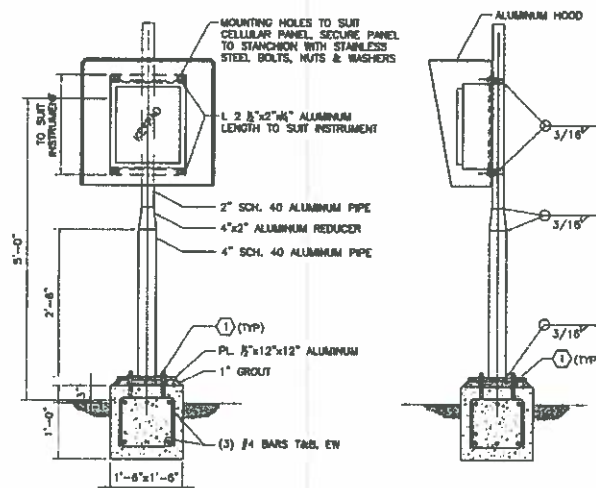


NO.2 GENERAL NOTES:
1. POLARITIES MUST BE THE SAME ON THE SAFETY LOOPS OR THE ELECTRIC FIELDS WILL INTERFERE WITH EACH OTHER.
2. PROVIDE GROUND LOOP(S) AS RECOMMENDED BY GATE OPERATOR MANUFACTURER.



CURRENT LOOP DETAIL

NOT TO SCALE



NO.3 GENERAL NOTES:
1. ALL EXPOSED EDGES TO BE GRIND SMOOTH AND BURR FREE.
2. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

NO.3 NOTES BY SYMBOL: 1. SECURE TO SLAB WITH 4-#6 18" STAINLESS STEEL CONCRETE ANCHORS.



ENTRY KEY PAD MOUNTING DETAIL

NOT TO SCALE



DAVID L. SMITH
Professional Engineer
No. 110037
Exp. 12/31/2021
City of Lancaster, Texas
2010-2021


















CITY OF LANCASTER, TEXAS 2.0 MG-ELEVATED STORAGE TANK

ELECTRICAL

DETAILS




DATE	BY	CHKD	APP'D	REVISION
10/12/2019	DL	DL	DL	1
10/12/2019	DL	DL	DL	2
10/12/2019	DL	DL	DL	3
10/12/2019	DL	DL	DL	4
10/12/2019	DL	DL	DL	5
10/12/2019	DL	DL	DL	6
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10/12/2019	DL	DL	DL	99
10/12/2019	DL	DL	DL	100

HAND SWITCH ABBREVIATIONS	
ABBR	DESCRIPTION
H/O/A	HAND/OFF/AUTO
L/R	LOCAL/REMOTE
H/O/S	HAND/OFF/SCADA
O/C	OPEN/CLOSE
L/O/C	LOCAL/OFF/COMPUTER
A/H	AUTO/HAND
L/O/R	LOCAL/OFF/REMOTE
L/A	LOCAL/AUTO
O/C/S	OPEN/CLOSE/STOP
O/O/A	ON/OFF/AUTO
L/C	LOCAL/COMPUTER
N/B	NORMAL/BYPASS

INSTRUMENT IDENTIFICATION			
	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (2)	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (2)
DISCRETE INSTRUMENTS			
SHARED DISPLAY SHARED CONTROL			
COMPUTER FUNCTION			
PROGRAMMABLE LOGIC CONTROL			
		INSTRUMENT WITH LONG TAG NUMBERS	INSTRUMENTS SHARING COMMON HOUSING
			
	PILOT LIGHT	PANEL MOUNTED PATCHBOARD POINT 12	PURGE OR FLUSHING DEVICE
		ISO	
	RESET FOR LATCH-TYPE ACTUATOR	DIAPHRAGM SEAL	UNDEFINED INTERLOCK LOGIC

(1) ABBREVIATIONS OF THE USER'S CHOICE SUCH AS IP1 (INSTRUMENT PANEL NO.1), IC2 (INSTRUMENT CONSOLE NO.2), CC3 (COMPUTER CONSOLE NO.3), ETC., MAY BE USED WHEN IT IS NECESSARY TO SPECIFY INSTRUMENT OR FUNCTION LOCATION.

(2) NORMALLY INACCESSIBLE OR BOWING-THE-PANEL DEVICES OR FUNCTIONS MAY BE DEPICTED BY USING THE SAME SYMBOLS BUT WITH DASHED HORIZONTAL BARS, I.E.

PROCESS SYMBOLS	
SYMBOL	DESCRIPTION
	CHECK VALVE
	BUTTERFLY VALVE
	SLIDE GATE
	GATE VALVE
	BALL VALVE
	PLUG VALVE
	PRIMARY ELEMENT
	VENTURI FLOW METER
	REDUCER OR INCREASER
	ELECTROMAGNETIC FLOW METER
	MOTOR
	MOTOR-ARROW DENOTES VARIABLE SPEED
	AIR RELEASE VALVE
	SOLENOID OPERATED VALVE
	MOTOR OPERATED VALVE
	MIXER
	SLUIC PUMP
	PUMP
	BLOWER
	METERING PUMP
	SUBMERSIBLE PUMP
	VERTICAL TURBINE PUMP

GENERAL NOTES

(1) THE FOLLOWING ABBREVIATIONS ARE SUGGESTED TO DENOTE THE TYPES OF POWER SUPPLY. THESE DESIGNATIONS MAY ALSO BE APPLIED TO PNEUMATIC FLUID SUPPLIES.









AS	- AIR SUPPLY		
HS	- HYDRAULIC SUPPLY	- OPTION	
IA	- INSTRUMENT AIR	- OPTION	
NS	- NITROGEN SUPPLY		
PA	- PLANT AIR		
SS	- STEAM SUPPLY		
ES	- ELECTRIC SUPPLY		
WS	- WATER SUPPLY		
GS	- GAS SUPPLY		

THE SUPPLY LEVEL MAY BE ADDED TO THE INSTRUMENT SUPPLY LINE. E.G. AS-100, 100-PSIG AIR SUPPLY; ES-240C, A 24-VOLT DIRECT CURRENT POWER SUPPLY.

(2) THE PNEUMATIC SIGNAL SYMBOL APPLIES TO A SIGNAL USING ANY GAS AS THE SIGNAL MEDIUM. IF A GAS OTHER THAN AIR IS USED, IT MAY BE IDENTIFIED BY A NOTE ON THE SIGNAL SYMBOL OR OTHERWISE.

ELECTROMAGNETIC PHENOMENA INCLUDE HEAT, RADIO WAVES, NUCLEAR RADIATION AND LIGHT.

PIPING LABELS	
SYMBOL	DESCRIPTION
X-XX	PIPE MATERIAL DI-DUCTILE IRON
	PIPE DIAMETER

EXAMPLE SIGNALS	
SYMBOL	DESCRIPTION
	FIRST LETTER
	SUCCEEDING LETTERS
	THE TOTAL NUMBER OF UNITS PER SET (Y VARIES FROM 1 TO A)
	UNIT NUMBER (USED WHEN THERE ARE MULTIPLE UNITS WITH THE SAME 100X DESIGNATIONS)
	LOOP NUMBER (00)
	AREA NUMBER (W)
	DIGITAL SYSTEM I/O INTERFACE. DIRECTION OF TRIANGLE DENOTES WHETHER INPUT OR OUTPUT.
	LETTER DENOTES SIGNAL TYPE. THE LETTER "A" DENOTES AN ANALOG SIGNAL. THE LETTER "D" DENOTES A DISCRETE SIGNAL.

NOTE:
THIS IS A STANDARD LEGEND. THEREFORE, NOT ALL OF
THIS INFORMATION MAY BE USED ON THIS PROJECT.

FIRST LETTER (S)		SUCCEEDING LETTERS			
LETTER	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR POSITIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER, COMBUSTION		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
C	USERS CHOICE (+)			CONTROL	
D	USERS CHOICE (+)	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USERS CHOICE (+)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOTOR	MOMENTARY			MIDDLE, INTERMEDIATE
N	USERS CHOICE (+)		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
O	USERS CHOICE (+)		OFFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION (+)
V	VIBRATION MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED (+)	X AXIS	UNCLASSIFIED	UNCLASSIFIED (+)	UNCLASSIFIED (+)
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAT. COMPUT. CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.

LINE TYPES	
SYMBOL	DESCRIPTION
	INSTRUMENT SUPPLY OR SOLENOID OPERATED VALVE (1)
	UNDEFINED SIGNAL
	PNEUMATIC SIGNAL (2)
	ELECTRIC SIGNAL
	HYDRAULIC SIGNAL
	CAPILLARY TUBE
	ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED) (3)
	ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED) (3)
	INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
	MECHANICAL LINK
	PNEUMATIC BINARY SIGNAL (ON-OFF)
	ELECTRIC BINARY SIGNAL (ON-OFF)
	ELECTRIC ANALOG SIGNAL
	NON-CONNECTING LINES
	CONNECTING LINES

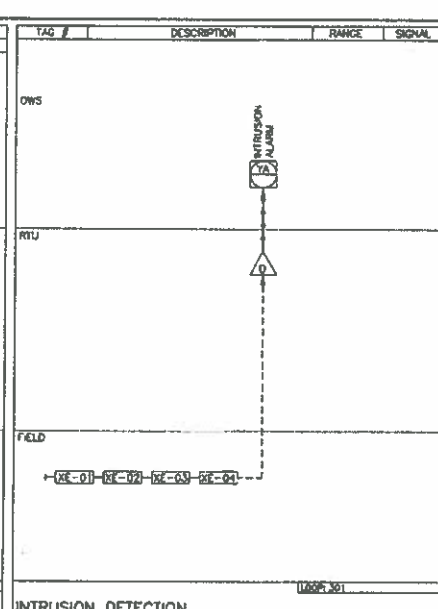
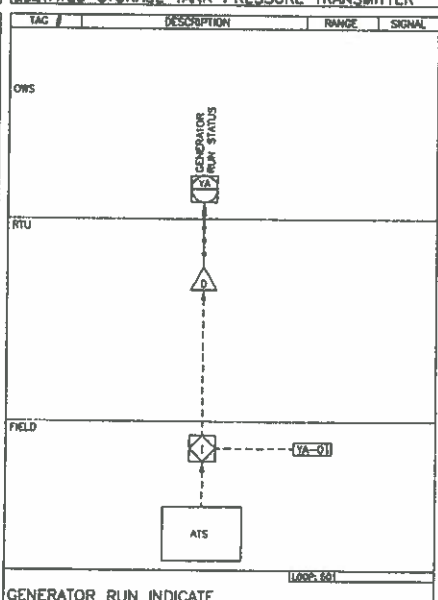
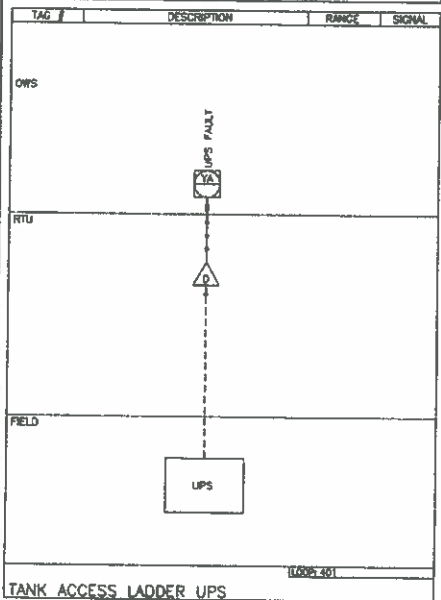
Press and Photo, Inc.
1000 Broadway, New York, N.Y. 10003
Tel. 212-677-1111

STONING
FRUITS

Mr. A. Stoning, 245 Ave. U in
London, Texas 75701-2601
Phone - (214) 213-2200
Fax - (214) 213-2201

CITY OF LANCASTER, TEXAS
2.0 MG ELEVATED STORAGE TANK
ELECTRICAL

[illegible]



November 15, 2012

Shwetha Pandurangi, P.E.
City Engineer
City of Lancaster
700 East Main Street
Lancaster, TX 75146

Re: Bid No. 2012-45, 2.0 Million Gallon Elevated Storage Tank

Ms. Pandurangi:

Bids were received for the above-referenced project on November 14, 2012 via the City of Lancaster's Ion Wave e-Procurement system. A total of three (3) bids were submitted electronically. All three bidders were pre-qualified for the project based on experience with similar type construction and have performed satisfactorily on other similar projects. All bidders acknowledged receipt of the three addendums that were issued and included 5% bid bonds. There were no discrepancies or arithmetic errors in the bids received. Below is a summary table of the bids.

Bidder	2.0 MG Elevated Storage Tank	Supporting Items (Waterline)	Additive Alternate 2 nd Floor	Total Bid Amount
Landmark Structures I, L.P.	\$2,665,000.00	\$580,000.00	\$121,000.00	\$3,366,000.00
Chicago Bridge and Iron (CB&I), Inc.	\$2,929,701.00	\$667,299.00	\$130,000.00	\$3,727,000.00
Caldwell Tanks, Inc.	\$3,500,000.00	\$719,413.00	\$200,000.00	\$4,419,413.00

Attached is the detailed bid tabulation.

Landmark Structures submitted the low bid of \$3,366,000. No errors were found in the bid submitted. Landmark Structures is a specialty composite elevated tank contractor based in Fort Worth, Texas. In our opinion the low bid by Landmark reflects their desire to win local projects and prevent another win by competitors.

Freese and Nichols, Inc (FNI) has worked with Landmark Structures on many successful projects in the past, and I have personally worked with Landmark since 1983 when they bid on their first tank in the state of Texas for the City of Grapevine. Recent FNI projects are summarized in the table below.

PROJECT SUMMARY

Owner	Size	Year Completed
Town of Addison	1.5 MG	2012
City of Princeton	1.0 MG	2012
City of Terrell	1.5 MG	2012
City of Taylor	1.0 MG	2010
City of Taylor	0.75 MG	2010
Town of Prosper	2.0 MG	2008
City of Brownwood	0.75 MG	2006
City of Burleson	0.75 MG	2006
City of Keller	1.0 MG	2006
Town of Little Elm	1.0 MG	2006
City of Mansfield	2.0 MG	2006
City of Brownwood	0.75 MG	2005
City of Mansfield	1.0 MG	2005
City of Keller	2.5 MG	2003
City of Grapevine	2.0 MG	2002

Since there is the potential of receiving a federal grant funding for partial funding of the construction, we have verified that Landmark Structure I, LP is not on the federal list of debarred contractors.

Accordingly, Freese and Nichols recommends award of the contract to Landmark Structures I, L.P either in the amount of \$3,245,000 for the base bid or \$3,366,000 for the base bid with the additive alternate second floor. The City needs to determine if there is sufficient funding to include the costs for the additive alternate for the second floor in the structure. The alternate provides for additional storage space and a jib crane for moving equipment up to the second floor. Costs are approximately \$66 per square foot of additional space.

Should you need anything additional please do not hesitate to contact me at (214) 217-2232 or by email at jb@freese.com.

Sincerely,



J.R. Baddaker, P.E.

Project Manager

Freese and Nichols, Inc.

cc: LCS11454

File Attachments

1. e-Procurement Comprehensive Bid Tab

Bid Request Nur 2012-45 Addendum 3

Specification Responses

LANDMARK STRUCTURES I, L.P.

CB&I Inc

Caldwell Tanks Inc

Line	Description		QTY	Unit	Extended	Unit	Extended	Unit	Extended
1	2.0 Million Gallon elevated Storage Tank<p> **PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL**		1	\$2,665,000.00	\$2,665,000.00	\$2,929,701.00	\$2,929,701.00	\$3,500,000.00	\$3,500,000.00
1.1	2.0 Million Gallon Elevated Storage Tank<p> **PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL**	LS	1	\$2,665,000.00		\$2,929,701.00		\$3,500,000.00	
2	Supporting Items	Package B	1	\$580,000.00	\$580,000.00	\$667,299.00	\$667,299.00	\$719,413.00	\$719,413.00
2.1	24" C905 PVC C905 DR-18 WATER PIPE	LF	1115	\$100.00		\$175.00		\$160.00	
2.2	12" C905 PVC C900 DR-18 WATER PIPE	LF	91	\$60.00		\$51.00		\$70.00	
2.3	24" BUTTERFLY VALVE	EA	2	\$12,000.00		\$5,600.00		\$7,000.00	
2.4	12" GATE VALVE	EA	2	\$2,000.00		\$3,000.00		\$2,500.00	
2.5	24" VALVE WITH 90 DEGREE BEVEL GEAR	EA	1	\$21,000.00		\$20,000.00		\$24,000.00	
2.6	2" COMBINATION AIR VALVE	EA	1	\$4,000.00		\$2,200.00		\$4,500.00	
2.7	1" WATER SERVICE & METER BOX	EA	1	\$2,000.00		\$1,400.00		\$2,500.00	
2.8	FIRE HYDRANT ASSEMBLY (Includes 6" Gate Valve & Lead)	EA	1	\$4,000.00		\$5,000.00		\$4,400.00	
2.9	CONNECT TO EXISTING 30" WATERLINE (N. HOUSTON SCHOOL RD)	EA	1	\$8,000.00		\$9,200.00		\$17,000.00	
2.10	CONNECT TO EXISTING 12" WATERLINE (W. WINTERGREEN RD)	EA	1	\$6,000.00		\$2,300.00		\$3,400.00	
2.11	TRENCH SAFETY - Please list in the notes the estimated quantity.	LS	1	\$1,294.00		\$4,500.00		\$1,300.00	
2.12	SITE PREPARATION AND GRADING	LS	1	\$54,007.00		\$8,000.00		\$10,000.00	
2.13	6" CONCRETE ACCESS DRIVE AND PARKING	SY	483	\$40.00		\$60.00		\$50.00	
2.14	CONCRETE SIDEWALK REPLACEMENT	SY	11	\$40.00		\$75.00		\$60.00	
2.15	ASPHALT PAVING REPLACEMENT	SY	33	\$32.00		\$85.00		\$70.00	
2.16	HYDROMULCH	SY	8923	\$1.00		\$1.00		\$1.00	
2.17	TANK / SITE ELECTRICAL AND SCADA	LS	1	\$100,000.00		\$160,000.00		\$250,000.00	
2.18	MOBILIZATION (MAX 5%)	LS	1	\$150,000.00		\$125,000.00		\$100,000.00	
2.19	STORM WATER POLLUTION PREVENTION PLAN	LS	1	\$3,000.00		\$18,000.00		\$7,500.00	
2.20	TRAFFIC CONTROL PLAN	LS	1	\$2,000.00		\$3,200.00		\$5,000.00	
2.21	GENERAL CONSTRUCTION CONTINGENCY - ENTER \$50,000 IN THE UNIT PRICE	LS	1	\$50,000.00		\$50,000.00	542	\$50,000.00	

	ALTERNATE ITEMS<p>								
3	**PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL**	PACKAGE C	1	\$121,000.00	\$121,000.00	\$130,000.00	\$130,000.00	\$200,000.00	\$200,000.00
3.1	ADD - ELEVATED TANK 2ND FLOOR	EA	1	\$121,000.00		\$130,000.00		\$200,000.00	
Total					\$3,366,000.00		\$3,727,000.00		\$4,419,413.00

Alternate Responses

Line	Description	UOM	QTY	Unit	Extended	Supplier
	2.0 Million Gallon elevated Storage Tank<p>					
1 Alt 1	**PLEASE ENTER THE UNIT PRICE, NOT THE TOTAL**	Package A	1	\$0.00	\$0.00	CB&I Inc

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 5

Consider a resolution approving the terms and conditions of the City owned terminal building commercial lease, suite 730-202, at the Lancaster Regional Airport.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Sound Infrastructure

Background

Aviatour, Inc., a private business operating a flight school, has been located at Lancaster Regional Airport since 2008. They currently occupy and rent all 3 of the 3 spaces available in the upstairs of the terminal building on two separate leases. Aviatour is reorganizing and wishes to renew the expired lease less one office space. The remaining office space can easily be rented to a future aviation business.

Considerations

- **Operational** - The City terminal building commercial lease is used for aviation related businesses.
- **Legal** - The lease agreement was reviewed and approved by the City Attorney.
- **Financial** - Lease rates are based on square footage per the City of Lancaster fee schedule for the airport. All rates were approved in the City's Master Fee Schedule. The lease rate is \$440 per month for 440 square feet of space with a lease term of 3 years.
- **Public Information** - There are no public information requirements.

Options/Alternatives

1. Council may approve the resolution as presented.
2. Council may reject the resolution.

Recommendation

Staff recommends approval of the resolution.

Attachments

- Resolution
 - Exhibit “A” Lease Agreement
-

Submitted by:
Mark Divita, Airport Manager

RESOLUTION NO. 2012-0X-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, APPROVING THE TERMS AND CONDITIONS OF THE CITY OWNED TERMINAL BUILDING COMMERCIAL LEASE, SUITE 730-202, AT LANCASTER REGIONAL AIRPORT; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID LEASES; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Lancaster Regional Airport has terminal building office space available for rental revenue gain; and

WHEREAS, the City Council of Lancaster, Texas, desires to authorize the commercial lease pursuant to the lease listed in Exhibit "A";

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That the City terminal building commercial lease agreement attached hereto and incorporated herein by reference as Exhibit "A" having been reviewed by the City Council of the City of Lancaster, Texas and found to be acceptable and in the best interest of the City and its citizens, be, and the same is hereby, in all things approved.

SECTION 2. That the City Manager is hereby authorized to execute said lease agreement.

SECTION 3. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

DULY PASSED and approved by the City Council of the City of Lancaster, Texas, on this the 10th day of December 2012.

ATTEST:

APPROVED:

Dolle K. Downe, City Secretary

Marcus E. Knight, Mayor

APPROVED AS TO FORM:

Robert E. Hager, City Attorney

STATE OF TEXAS §
 § **AIRPORT TERMINAL LEASE AGREEMENT**
COUNTY OF DALLAS §

THIS AIRPORT TERMINAL SPACE LEASE AGREEMENT (“Lease”) is made and entered into this ___ day of December, 2012, by and between the **CITY OF LANCASTER**, a Texas Home-Rule Municipal Corporation (“City” or “Lessor”) and **AVIATOUR, INC.**, a Texas corporation (“Lessee”).

WITNESSETH:

WHEREAS, City is the owner and operator of the Lancaster Regional Airport (“Airport”) which is located in the City of Lancaster, Dallas County, State of Texas; and

WHEREAS, Lessee desires to lease and use the Leased Premises (defined below) for the conduct of an aviation related activity and associated uses as authorized herein; and

WHEREAS, in accordance with the provisions contained within this Lease, City desires to allow Lessee to use the Property for the foregoing purpose;

NOW, THEREFORE, for and in consideration of the rental payments, covenants, promises, and agreements contained herein, and for other good and valuable consideration, City and Lessee agree as follows:

ARTICLE 1
DEFINITIONS

As used in this Lease, the following words and phrases shall have the following meanings unless the context clearly indicates otherwise:

Airport means the Lancaster Regional Airport, located at 730 Ferris Road, Suite 102, Lancaster, Texas 75146.

Initial Rent means FOUR HUNDRED FORTY AND NO/100 (\$440.00) per month during the Initial Term.

Hazardous Materials is defined herein as that term is so defined by EPA, TCEQ, NFPA and City ordinances, inclusive.

Leased Premises means an approximately 440 square foot space located within the Airport Terminal Building owned by City and located at 730 Ferris Road, Lancaster, Texas, said space being more commonly known as “Suite 202,” and generally depicted as set forth in Exhibit “A,” attached hereto and incorporated herein by reference.

Option Period Rent means the amount to be paid monthly by Lessee to City during the Option Lease Term, which amount shall be (a) \$440.00 plus (b) an amount equal to the

percentage increase in the Dallas-Fort Worth Standard Metropolitan Statistical Area Consumer Price Index (All Items) (the “D-FW CPI”) published for March 2011 and the D-FW CPI for published for March 2014; provide, however, if the D-FW CPI published for March 2014 is the same or lower than the D-FW CPI published for November 2012, the Option Period Rent shall be \$440.00 per month.

Rent means, collectively, Initial Rent and Option Period Rent.

ARTICLE 2 PREMISES LEASED

2.1 Lease Created: City hereby leases to Lessee, and Lessee hereby leases the Leased Premises from City, in accordance with the terms and conditions of this Lease.

2.2 Acceptance of Leased Premises Conditions: By acceptance of this Lease, Lessee warrants and represents that Lessee:

A has carefully and completely examined and inspected the entire Leased Premises and is fully informed of the condition of the Leased Premises; and

B. is completely satisfied as to the suitability of the Leased Premises for all of the activities contemplated by this Lease.

Lessee accepts possession of the Leased Premises as is, and subject to all limitations imposed upon the use thereof by the rules and regulations of the Federal Aviation Administration and by the ordinances of the City of Lancaster.

ARTICLE 3 USE OF LEASED PREMISES

3.1 Permitted Use: Subject to the provisions of this Lease, Lessee is granted the right to use and occupy the Leased Premises for office uses related to the operation of an aviation-related business including, but not limited to, pilot training program, air charter operations and reservations, aircraft sales, and such other uses as approved from time to time by the Airport Manager in accordance with this Lease (“the Permitted Use”). Lessee agrees not to engage in any other activity on the Leased Premises other than the Permitted Use and agrees not to use, develop, or occupy the Leased Premises in any manner contrary to the Lancaster Regional Airport Layout Plan or Airport Minimum Standards for any purpose other than that specified in this Lease, without the prior express written consent of City.

3.2 Ingress and Egress: Lessee, its employees, customer, guests, patrons, suppliers, vendors, and invitees shall have the right of ingress and egress to and from the Leased Premises. If the rights granted by this provision adversely affect Airport operations, City shall have the right, upon prior notice to Lessee, to restrict and/or limit hours in which such rights may be exercised, provided such restrictions do not unreasonably affect Lessee’s ability to access and use the Leased Premises for the Permitted Uses.

3.3 Quiet Enjoyment: Upon payment of Rent and any required fees and the performance of the covenants, agreements, and conditions to be observed and performed by Lessee, Lessee shall peacefully and quietly have, hold, and enjoy the Leased Premises and privileges granted for the term of this Lease free from hindrance or interruption by City. Lessee agrees that temporary inconveniences such as noise, disturbances, traffic detours and the like, caused by or associated with the construction of Airport improvements or Airport events, shall not constitute a breach of quiet enjoyment of the Leased Premises, provided same do not materially adversely affect Lessee's ability to access and use the Leased Premises.

ARTICLE 4 TERM

4.1 Initial Lease Term: The initial term of this Lease shall be three (3) years commencing on December 1, 2012, and ending on December 31, 2015, ("the Initial Lease Term") unless sooner terminated in accordance with the provisions hereof.

4.2 Optional Extension of Term by Lessee: Lessee shall have the right to extend the term of this Lease for a two year period beginning January 1, 2015, and ending December 31, 2017, ("the Option Lease Term") upon City delivering written notice to Lessee of City's affirmative decision to exercise the option, which notice must be delivered by City not later than June 30, 2015.

4.3. Right of First Refusal: If prior to end of the Initial Lease Term or Option Lease Term, as applicable, City receives a solicited or unsolicited proposal from a third-party for the lease of the Leased Premises that City finds desirable and acceptable, City agrees to provide a copy of such proposal to Lessee. Not later than ten (10) days after delivery of such proposal to Lessee, Lessee shall notify City that it will enter into an agreement with the City on substantially the same terms as contained in the third-party proposal ("the Right of First Refusal"). Lessee's failure to enter such agreement within twenty (20) days after notifying City of its desire to enter such agreement shall terminate Lessee's right to enter such agreement as provided in this Section 4.3. Notwithstanding the above provisions, the Right of First Refusal granted in this Section 4.3 shall not be effective if:

A. Lessee is in default of this Lease at the time of receipt of the third-party proposal; or

B. During the term of this Lease, Lessee has been declared by City to be in default of this Lease three or more times and has provided a notice of default to Lessee, notwithstanding that Lessee may have cured said defaults to avoid termination of this Lease; or

C. Lessee has been delinquent on the payment of Rent more than three (3) times during the term of this Lease.

4.4 Holdover: In the event Lessee should hold over and remain in possession of the Leased Premises after the expiration of the term of this Lease or termination for any other cause, such holding over shall not be deemed to operate as a renewal or extension of this Lease and shall create a tenancy-at-will which may be terminated at any time by the Airport Manager or Lessee by providing one (1) day's written notice. The rents, fees, and/or other charges paid during the holding over period shall be equal to 150% of the monthly rents, fees, and/or other charges that were being charged by City at the time the Lease expired or was terminated.

ARTICLE 5 RENT

5.1 Amount of Rent: For the use and occupancy of the Leased Premises, Lessee agrees to pay Rent to the City as follows:

- A. For the period Initial Lease Term, Lessee will pay the Initial Rent.
- B. For the Option Lease Term, Lessee shall pay the Option Period Rent.

5.2 Payment of Rent: Rent shall be paid not later than the first (1st) day of each calendar month during the term of this Lease, with the first payment of Initial Rent being due on December 1, 2012, and a payment of Rent being due on the first (1st) day of each month thereafter during the Initial Lease Term and, if applicable, the Option Lease Term.

5.3 No Setoffs: Payment of Rent shall be absolutely net to City and shall be made without any abatement, deductions, reductions, set offs, or counterclaims of any kind.

5.4 Late Charges: A late charge of Five Percent (5%) shall be automatically added to any installment of Rent not received by City by the close of business of the 20th day of the month in which it is due. The late charge shall become part of the Rent due and owing to City. Only one late charge shall be assessed on each delinquent payment of Rent.

5.5 Payment Location: All payments of Rent or other amounts due under this Lease, if any, shall be made to City of Lancaster and sent to the attention of the Finance Department at P.O. Box 940, Lancaster, Texas 75146 or to such other place as City may in writing direct Lessee from time to time. The failure to make any payment of any amount due under this Lease when due may result in a termination of the Lease as provided in Article 12.

5.6 Interest on Unpaid Delinquent Amounts: Any amount of Rent or other fees or charges Lessee is required to pay City pursuant to this Lease and that remains unpaid for more than thirty (30) days after the amount was due shall accrue interest beginning on the 31st day after the payment was due at a rate equal to the lesser of (a) 18% or (b) the greatest amount allowed by law.

ARTICLE VI LESSEE'S OPERATIONS

6.1 Conduct: Lessee shall take all reasonable measures to control the conduct, demeanor and appearance of its employees, agents, and invitees, while in the Leased Premises and ensure their compliance with all applicable federal, state, and local laws, ordinances, and regulations related to Lessee's use of the Leased Premises. Lessee will further conduct itself, and cause its employees, agents and invitees conduct themselves, with full regard for the rights, convenience and welfare of all other tenants in the Terminal Building and on the Airport. All employees having contact with the public shall be courteous, clean, appropriately attired, and neat in appearance. Lessee agrees that it shall not permit any loud, abusive or obscene language or offensive acts or conduct on the Leased Premises by its employees. Should any employee or agent of Lessee fail to conduct themselves in accordance with the provisions of this Section 6.1, Lessee shall, upon written notice from City, take immediate corrective action with respect to such employee and otherwise take all reasonable steps necessary to resolve or remove the cause of the complaint.

6.2 Relation to Others: Lessee, for itself and its agents, and employees agree to maintain a friendly and cooperative, though competitive, relationship with other companies engaged in similar or like business or with other tenants on Airport property. Lessee shall not engage in open public disputes, disagreements, denigration or conflicts regarding activities at the Airport which would tend to deteriorate the quality of the service of Lessee or its competitors or other tenants or which would be incompatible with the best interest of the public at the Airport.

6.3 Prohibited Activities: Lessee shall not:

A. install or operate, or otherwise cause or authorize the installation or operation, of amusement machines, video or audio equipment (other than video or audio equipment related to any security or anti-theft system installed in the Leased Premises), automated teller machines, or vending machines in or upon the Leased Premises without the written approval of City; or

B. sell or serve, or authorize the sale or service, of alcoholic beverages, on the Leased Premises; or

C. sell, rent, or deliver, or authorize the sale, rental, or delivery, books, magazines or other printed matter, or photographs, films, motion pictures or video cassettes which depict or describe sexual activities, or contain nudity or humans in a state of nudity, as those terms are defined in Lancaster Code of Ordinances §4.601, as amended; or

D. bring or allow onto the Airport or into the Leased Premises any animals;

E. install in or upon the Leased Premises any fixtures, machines, tools, equipment, or other items of personal property; or

- F. drill or make any holes in any brick or plaster; or
- G. permanently affix to any door or wall any placard or decorative material;
or
- H. commit any waste; or
- I. make any material structural alterations or additions to the Leased Premises without the prior written consent of City.

ARTICLE 7.

LESSEE MAINTENANCE OF LEASED PREMISES

7.1 Installation, Presence and Removal of Personal Property Lease: Any personal property belonging to Lessee located on the Leased Premises located thereon shall be there at the sole risk of Lessee. City shall have no liability or responsibility for any theft, misappropriation or damage to any personal property belonging to Lessee or any customer of Lessee unless due to the willful misconduct of City. Lessee shall remove all equipment, trade fixtures, and systems owned by Lessee and installed in or upon the Leased Premises not later than five (5) days after termination or expiration of this Lease; provided, however, any such equipment, fixtures, or systems installed by Lessee that cannot be removed without permanently damaging the Leased Premises shall remain and become the sole property of City. Subject to the rights of any party holding a superior security interest in the equipment, fixtures, and systems, if Lessee fails to remove such property from the Leased Premises within five (5) days of termination or expiration of this Lease, then City retains the right to remove or have removed at the expense of Lessee all equipment, fixtures, and systems and Lessee agrees to pay City for such expense within fifteen (15) days after receipt of an invoice from City.

7.2 Signs: Lessee may, at its own expense and upon written approval by the Airport Manager (which shall not be unreasonably withheld), install signs in the Terminal Building at locations to be determined by the Airport Manager indicating the name, location, and hours of operation of Lessee's business in the Leased Premises. Such signs shall be consistent with the size, color, location, copy and manner of display of other signs throughout the Terminal Building. Lessee agrees to reimburse City for any damage or injury to the Leased Premises resulting from the installation, maintenance or removal of any such signs.

7.3 Hazardous Materials: Lessee shall not:

- A. cause or allow any Hazardous Material, as defined in applicable federal or state laws or regulations, to be placed, stored, generated, used, released or disposed of, in, on, under, about, or transported from the Leased Premises; or
- B. do, or allow to be done, any act, nor store any material, which will in any manner conflict with any term or provision of any policy of insurance insuring the Terminal Building or its contents.

7.4 Utilities: Lessee shall directly procure and promptly pay for all utilities and utility services including electricity, sewer, water, natural gas and telephone charges relating to the Leased Premises during the Term of this Lease.

7.5 General Maintenance: Lessee shall, at all times and at its expense, keep and maintain the Leased Premises, including all structural and other improvements installed in the Leased Premises, together with all of its fixtures, plate and mirror glass, equipment and personal property therein, in good repair and in a clean and orderly condition and appearance. Lessee shall keep the areas immediately adjacent to the exits and entrances to the Leased Premises clean and orderly and free of obstructions.

7.6 Preventive Maintenance: Lessee shall maintain and repair all interior areas and surfaces of the Leased Premises, including sweeping, washing, servicing, repairing, replacing, cleaning and interior painting that may be required to properly maintain the Leased Premises in a safe, clean, wholesome, sanitary, orderly and attractive condition. Lessee shall establish an adequate preventive maintenance program and the provisions of which shall be subject to periodic review by City, and which shall include, without limitation, the cleaning and repair of all floors, interior walls, ceilings, lighting, decor and equipment. Regardless of Lessee's compliance with its preventive maintenance program, Lessee shall clean such surfaces and equipment immediately upon being instructed to do so by City or by other governmental agencies having such authority.

7.7 Pest Control: Lessee understands and acknowledges that City desires and intends to maintain a pest free environment within the entire Terminal Building. Lessee shall be solely responsible for a pest free environment within its Leased Premises by maintaining its own pest control services, in accordance with the most modern and effective control procedures applicable to the Permitted Use. All materials used in pest control shall conform to Federal, State, and City laws, regulations and ordinances. All control substances utilized shall be used with all precautions to obviate the possibility of accidents to humans, domestic animals and pets. Whenever City deems that pest control services must be provided to a building or area that includes the Leased Premises, Lessee shall pay for the costs of services provided for the Leased Premises.

7.8 Quality of Work: Lessee covenants and agrees to make all repairs necessary or advisable to keep the Leased Premises from deteriorating in value or condition and to restore and maintain the Leased Premises, with the exception of normal wear and tear and aging consistent with normal office usage and time. City shall have the right and privilege, through its agents and officials, to make inspections of the Leased Premises and thereafter to make recommendations to Lessee of any repairs that in City's opinion are necessary to be performed by Lessee in the Leased Premises in accordance with the provisions of this Lease. Lessee agrees to complete such recommended repairs not later than the thirtieth (30) day after the date that such recommendations are made. Such repairs shall be made in an expeditious and workmanlike manner. In the event Lessee fails to commence such recommended repairs within the time required, City may, within its sole discretion, make such repairs as it deems necessary for and on behalf of Lessee; and, in such event, the cost of such repairs shall be paid by Lessee not later

than ten (10) days following receipt of a written request from City for reimbursement of such repair costs..

7.9 Refuse Disposal: Lessee shall immediately clean up all refuse, rubbish, scrap material and debris caused or generated by its use of the Leased Premises, so that the Leased Premises shall at all times present a clean, neat, sanitary and orderly appearance. Lessee shall provide and use covered receptacles of all garbage, trash and other refuse at the Leased Premises provided on the exterior of the Terminal Building. Lessee shall not use any trash receptacles located on the interior of the Terminal Building but exterior to the Leased Premises for depositing trash and other refuse. Lessee shall not allow boxes, cartons, barrels, or other items to accumulate in or upon the Leased Premises in an unsightly manner or in a manner that may pose a safety hazard of any kind. In the event City discontinues providing garbage removal services as it is currently providing, Lessee shall ensure the proper storage and removal from the Airport of all garbage, debris and other waste materials, whether solid or liquid, generated by or arising out of the operations and activities occurring on the Leased Premises, whether by Lessee or a third party occupying the Leased Premises. With respect to recyclable products, Lessee agrees to participate in the City's recycling program by depositing all recyclable products in the appropriate recycling container in lieu of the other trash receptacles.

ARTICLE 8. CITY MAINTENANCE OF AIRPORT

8.1 City Authority: While the Airport Manager has the authority to manage the Airport (including the authority to interpret, administer, and enforce agreements and policies and the authority to permit temporary, short-term occupancy/use of Airport property), Lessee understands and acknowledges that the ultimate authority to grant the occupancy/use of Airport land and/or improvements and/or the right to engage in an Aeronautical Activity at the Airport, and to approve, adopt, amend, or supplement any Lease, policy, or practice relating thereto is expressly reserved to City through the City Council.

8.2 Terminal Building Maintenance: City agrees, at City's sole expense, to maintain and repair the structural parts of the Terminal Building and other improvements exterior to the Leased Premises (including, without limitation, the roof, foundation and bearing and exterior walls, windows, window glass, plate glass, doors, pest control and extermination) and the parking lot, drives, sidewalks and common areas.

8.3 HVAC and Electricity: So long as Lessee is not in default of this Lease, City shall furnish the Leased Premises during reasonable and usual business hours the following services at Lessor's sole expense:

A. Heat and air conditioning during the customary periods of the year when and to the same extent City furnishes heat and air-conditioning for other portions of the Terminal Building' and

B. Electric current consisting of one hundred and ten (110) volt, sixty (60) cycle service for lighting and ordinary business appliances.

8.4 Airport Development: City reserves the right, but shall not be obligated to Lessee, to develop and/or improve the landing areas and/or other portions of the Airport as City determines in its sole discretion. City reserves the right to close any portion of the Airport and/or any of the facilities located thereon when it deems that such action is reasonably necessary to maintain, repair, or develop the Airport and/or facilities located thereon and/or for the safety of the general public; provided, however, that except in times of temporary emergency, adverse weather conditions, or public calamity, City shall use its best efforts at all times to keep the Airport open with sufficient access to, and use of, the Leased Premises by Lessee for the Permitted Use. City shall provide advance notice of any closures of the Airport to the extent possible.

8.5 War, National Emergency, Riot, or Natural Disaster: During time of war, national emergency, riot or natural disaster, City shall have the right to lease the Airport or any part thereof to the United States or the State of Texas for government or military use. In this case, any provisions of this Lease which are inconsistent with the provisions of any lease with a government entity shall be suspended for the term of the lease with the government entity.

8.6 Access to the Leased Premises: City and/or its representatives shall have the right to enter the Leased Premises at all times and for any purpose necessary, incidental to, or connected with the performance of Lessee and/or City's obligations under this Lease. City shall provide three (3) hours advance written notice (which shall include email transmission) prior to entering any non-public area except when City determines that emergency circumstances due to safety concerns require immediate entry without prior notice. Nothing herein shall be construed as restricting City and or its employees or agents from entering any part of the Leased Premises for purposes of carrying out any inspection related to the enforcement of City's ordinances and regulations.

8.7 Performance of Acts: All acts performable under this Lease by City or City Council may, at the option of City and without right of objection by Lessee, be performed by a representative or delegate of City.

8.8 Exercising Rights: No exercise of any rights reserved by City herein shall be deemed or construed as an eviction of Lessee nor shall such exercise be grounds for any abatement of rents, fees or charges nor serve as the basis for any claim or demand for damages of any nature whatsoever, unless such exercise materially interferes with the rights granted Lessee in this Lease.

8.9 Rights in Addition to Others: The rights and reservations set forth in Sections 8.1 through 8.8, inclusive, are in addition to all other rights and privileges reserved by City including those outlined under Federal and/or State Sponsor Assurances.

ARTICLE 9.
ADDITIONAL LESSEE OBLIGATIONS

9.1 Taxes, Assessments, and Fees: Lessee shall pay and discharge all taxes, assessments or other fees whether general or special, ordinary or extraordinary, charged by any government or quasi-governmental entity relating directly to the Leased Premises and/or the Permitted Use conducted at the Airport including leasehold (or possessory interest tax), personal property, income, excise, or any other business tax, assessment, or fee, as applicable. The foregoing notwithstanding, Lessee shall have the right, before delinquency occurs, of protesting, contesting, objecting to or opposing the legality or amount of any such tax, assessment or fee which Lessee deems, in good faith, are illegal or excessive; and in the event of such contest, Lessee may, to the extent provided by law, defer the payment of any such tax, assessment or fee. However, Lessee shall deposit with City that amount of any taxes that are not the subject of any contest and which are not in dispute to be held by City, in trust, until the conclusion of any tax contest and payment of any final determination.

9.2 Costs, Expresses, and Other Charges: Lessee shall pay all required costs, expenses and other charges or obligations of every kind and nature whatsoever relating to the Leased Premises and/or the Permitted Use, which may arise or become due during the term of this Lease.

9.3 Non-Discrimination: Lessee, in the conduct of its authorized use of the Leased Premises and/or on the Airport, shall furnish service on a fair, equal and just basis to all users thereof and shall charge fair and reasonable prices for each unit of sale or service; provided, however, that Lessee shall be allowed to make reasonable and non-discriminatory discounts, rebates, or other similar types of price reductions to volume purchases, or classes of purchasers. Lessee further agrees as follows:

A. Lessee, as a part of the consideration hereof, does hereby covenant and agree as a covenant running with the land that:

(1) no person on the grounds of race, color, gender or national origin shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities;

(2) in the construction of any improvements on, over, or under such land and the furnishing of services thereon, no person on the grounds of race, color or national origin shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination; and

(3) Lessee shall use the Leased Premises in compliance with all other requirements imposed by or pursuant to 49 CFR Part 21, Nondiscrimination in Federally Assisted Programs of the Department of Transportation and as said regulations may be amended. In the event of breach of any of the preceding nondiscrimination covenants, Lessee agrees that City has the right to take such

action against Lessee as the Federal government may direct to enforce this covenant, including termination of this Lease.

B. In accordance with these requirements, Lessee shall not discriminate in any manner against any employee or applicant for employment because of political or religious opinion or affiliation, sex, race, creed, color or national origin and further, Lessee shall include a similar clause in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

9.4 Insurance: Prior to the Effective Date of this Lease, without limiting any of the other obligations or liabilities of Lessee during the term of this Lease, Lessee shall purchase and maintain the herein stipulated minimum insurance with companies duly approved to do business in the State of Texas and satisfactory to City. Certificates of each policy shall be delivered to City before any Effective Date of this Lease, along with a written statement from the issuing company stating that said policy shall not be canceled, non-renewed or materially changed without thirty (30) days advance written notice being given to City, except when the policy is being canceled for nonpayment of premium, in which case ten (10) days advance written notice is required. Prior to the effective date of cancellation, Lessee must deliver to City a replacement certificate of insurance or proof of reinstatement.

A. The types and minimum amounts of coverage shall be as follows:

(1). Commercial General Liability Insurance, including independent contractor's liability and contractual liability covering, but not limited to, the liability assumed under the indemnification provisions of this Lease, fully insuring Lessee's liability for injury to or death of City's employees and any third parties, extended to include personal injury liability coverage, with damage to property of third parties, with minimum limits as set forth below:

General Aggregate	\$1,000,000
Products-Components Operations Aggregate	\$1,000,000
Each Occurrence	\$1,000,000
Medical Expense (any one person)	\$5,000

(2). Comprehensive Automobile and Truck Liability Insurance, covering owned, hired and non-owned vehicles, with a combined bodily injury and property damage minimum limit of \$500,000 per occurrence; or separate limits of \$250,000 for bodily injury (per person), \$500,000 bodily injury (per accident), and \$100,000 for property damage. Such insurance shall include coverage for loading and unloading hazards.

(3). Workers Compensation – Statutory

(4) If owning or operating aircraft on the Airport, Aircraft Liability Insurance with coverage for bodily injury and property damage, including passengers, with a combined single limit of not less than \$1,000,000.

B. Each insurance policy to be furnished by Lessee shall include the following conditions by endorsement to the policy:

(1) Name the City as an additional insured as to all applicable coverage (except Workers Compensation);

(2) The term "City" shall include all authorities, boards, commissions, divisions, departments and offices of City and individual members, employees and agents thereof in their official capacities, and/or while acting on behalf of City;

(3) The policy phrase "other insurance" shall not apply to City where City is an additional insured on the policy; and

(4) All provisions of this Lease concerning liability, duty and standard of care together with the indemnification provision, shall be underwritten by contractual liability coverage sufficient to include such obligations within applicable policies.

C. Insurance furnished by Lessee shall be in accordance with the following requirements:

1. Any policy submitted shall not be subject to limitations, conditions or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by Lessee. City's decision thereon shall be final;

2. All liability policies required herein shall be written with an "occurrence" basis coverage trigger.

D. Lessee hereby waives subrogation rights for loss or damage to the extent same are covered by insurance. Insurers shall have no right of recovery or subrogation against City, it being the intention that the insurance policies shall protect all parties to the Lease and be primary coverage for all losses covered by the policies.

E. Companies issuing the insurance policies and Lessee shall have no recourse against City for payment of any premiums or assessments for any deductibles, as all such premiums and deductibles are the sole responsibility and risk of Lessee.

F. Approval, disapproval or failure to act by Lessee regarding any insurance supplied by Lessee shall not relieve Lessee of full responsibility or liability for damages

and accidents as set forth in this Lease. Neither shall the bankruptcy, insolvency or denial of liability by the insurance company exonerate Lessee from liability.

G. No special payments shall be made for any insurance that Lessee is required to carry; all are included in the agreement price and the agreement unit prices.

H. Any of such insurance policies required under this section may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

ARTICLE 10. INDEMNIFICATION

LESSEE AGREES TO INDEMNIFY, PROTECT, DEFEND, SAVE AND COMPLETELY HOLD HARMLESS CITY AND ITS CITY COUNCIL (INDIVIDUALLY AND COLLECTIVELY), REPRESENTATIVES, OFFICERS, OFFICIALS, EMPLOYEES, AGENTS AND VOLUNTEERS (HEREINAFTER REFERRED TO COLLECTIVELY IN THIS ARTICLE AS "CITY") FROM ANY AND ALL LIENS, CLAIMS, CHARGES, ENCUMBRANCES, DEMANDS, DAMAGES, FINES, OBLIGATIONS, SUITS, JUDGMENTS, PENALTIES, CAUSES OF ACTION, LOSSES, LIABILITIES, ADMINISTRATIVE PROCEEDINGS, ARBITRATION, OR COSTS OF ANY NATURE WHATSOEVER INCLUDING REASONABLE ATTORNEY'S FEES, AT ANY TIME RECEIVED, INCURRED, OR ACCRUED BY CITY RELATING TO THIS LEASE OR ARISING FROM DAMAGE OR INJURY OF ANY NATURE WHATSOEVER WHICH MAY RESULT FROM LESSEE'S POSSESSION, USE, OCCUPANCY, MANAGEMENT, MAINTENANCE, OR CONTROL OF THE LEASED PREMISES AND/OR THE CONDUCT OF LESSEE'S ACTIVITIES AT THE AIRPORT OR ARISING OUT OF LESSEE'S ACTIONS OR INACTIONS, REGARDLESS OF ANY SOLE OR CONCURRENT NEGLIGENCE OF THE CITY.

ARTICLE 11. DEFAULTS AND REMEDIES

11.1 Lessee Default: The occurrence of any one or more of the following events shall constitute a material default and breach of this Lease by Lessee.

- A. The filing by Lessee of a voluntary petition in bankruptcy;
- B. The assignment of all or substantially all of Lessee's assets for the benefit of Lessee's creditors;
- C. A court making or entering any decree or order:
 - (1) adjudging Lessee to be bankrupt or insolvent;

(2) approving as properly filed a petition seeking reorganization of Lessee or an arrangement under the bankruptcy laws or any other applicable debtor's relief law or statute of the United States or any state thereof;

(3) appointing a receiver, trustee or assignee of Lessee in bankruptcy or insolvency or for its property; and

(4) directing the winding up or liquidation of Lessee and such decree or order shall continue for a period of (60) days.

D. The filing of any non-consensual lien against the Leased Premises resulting from any act or omission of Lessee which is not discharged or contested in good faith as determined by City by proper legal proceedings within sixty (60) days of receipt of actual notice by Lessee, unless Lessee posts a bond within this time period equal to the amount of the lien;

E. The voluntary abandonment by Lessee of the Leased Premises or its failure to maintain an on-going business at the Leased Premises for a period of thirty (30) days or more, coupled with the failure to pay Rent as provided in Article 5;

F. The transfer of Lessee's interest in a manner not authorized herein or by other operation of law;

G. Lessee becomes in arrears in the payment of the whole or any part of the amount(s) agreed upon herein for a period of thirty (30) days after the time such payments become due;

H. Intentional falsification by Lessee of any record which results in the deprivation of any Rent, fee or other charge from the City granted under this Lease;

I. The failure by Lessee to perform any of the covenants, conditions or obligations imposed on it by this Lease or any other Lease with City where the failure continues for a period of twenty (20) days after written notice from City; and

J. The transfer or assignment or attempted transfer or assignment of this Lease by Lessee, without securing prior written approval of City. It shall be understood for the purpose of this provision that negotiations by Lessee for the assignment or transfer of this Lease shall not be construed as "attempted transfer."

11.2 Failure to Cure Default: In the event of any default by Lessee that is not cured within twenty (20) days (five (5) days, if the default relates to the non-payment of Rent) of receiving notice from City, City may, in addition to any other remedies available to City, terminate this Lease. If the default concerns a failure to make payments to City; however, no written or other notice of default shall be required. If this Lease is terminated, any payments made to City shall be forfeited to City and Lessee shall have no rights to recover the payments.

This forfeiture shall not diminish nor limit City's right to recover such damages as may result from the default by Lessee.

11.3 Force Majeure: Notwithstanding the foregoing, no failure of either party to perform or delay in performance which is caused by any war, civil disorder or other national emergency or which is due to an intervening act of God shall be deemed an event of default.

11.4 Additional Remedies: In addition to the termination and forfeiture rights described in the preceding paragraphs, City shall have the following rights and remedies upon default by Lessee:

A. The recovery of any unpaid Rent, fees and other payments due and owing at the time of termination, plus any unpaid Rent and fees that would have been earned and other payments that would have been made in the Lease had not been breached by Lessee.

B. The recovery of any damages, costs, fees and expenses incurred by City as a result of the breach of the Lease by Lessee, including reasonable attorneys' fees and expenses.

C. The removal of all persons from the Leased Premises and the removal and storage at Lessee's expense of all of Lessee's property on the Leased Premises, in accordance with the law.

D. Any other right or remedy, legal or equitable, including specific performance, that City is entitled to under applicable law, whether stated in this Lease or not.

11.5 Lessee Continuing Obligations: No termination of this Lease following an uncured default shall relieve Lessee of the obligation to deliver and perform on all outstanding obligations and requirements prior to the effective date of the termination and Lessee's liabilities under this Lease shall continue.

11.6 Re-entry on Termination: In the event of any such termination as above enumerated, City shall have the right at once and without further notice to Lessee to enter and take full possession of the Leased Premises occupied by Lessee under this Lease in accordance with the law. Upon the termination of this Lease for any reason, Lessee shall yield up the Leased Premises, including any facilities, fixtures and equipment, and the City Equipment, to City in the same condition as when received, reasonable and ordinary wear and tear excepted.

11.7 Cost of Re-Entry: Upon termination of this Lease, Lessee covenants and agrees to pay and discharge all reasonable costs, attorney's fees and expenses that may be incurred by City in enforcing the covenants, conditions and agreements of this Lease, re-entering and/or repossessing the Leased Premises, restoring the Leased Premises to the condition by this Lease, and protecting the Leased Premises.

ARTICLE 12. TERMINATION

This Lease shall terminate upon any of the following events:

- A. Mutual written agreement of the parties;
- B. Upon the end of the Lease Term, including any extensions thereof by exercise of the Option Lease Term, as set forth in Article 4, above;
- C. Lessee providing written notice to City not later than thirty (30) days prior to the date of termination; provided, however, Lessee's termination of this Lease pursuant to this Article 12 shall not relieve Lessee of any obligations to pay Rent or other fees to City that accrued prior to the date of termination, which obligations shall survive the termination of this Lease; and
- D. Upon Lessee's failure to cure any default of this Lease following the notice provided in this Lease, including, but not limited to, any one or more of the events described in Article 11, above.

ARTICLE 13. NO WAIVER

No failure on the part of either party to enforce any of the terms and/or conditions set forth in this Lease shall be construed as or deemed to be a waiver of the right to enforce such terms and/or conditions. The acceptance by City of any Rent, fee or other payment shall not be construed as or deemed to be a waiver by City of any breach by Lessee of any covenant, condition or obligation.

ARTICLE 14. DAMAGE TO LEASED PREMISES

If at any time during the Term of this Lease any part of the Leased Premises is damaged or destroyed, City shall be under no obligation to rebuild or repair the damaged or destroyed portion of the Leased Premises. This Lease shall terminate and Lessee shall be obligated to pay Rent only through the date the event causing the damage occurred if the damage is to such extent that Lessee is unable to use the Leased Premises for the Permitted Use and City elects to not make such repairs.

ARTICLE 15. MISCELLANEOUS

15.1 Assignment: No portion of this Lease may be assigned without the prior express written consent of City. In the event this Lease is assigned, Lessee shall remain liable to City for the remainder of the term of the Lease to pay to City any portion of rents, fees, and/or other charges not paid by the assignee when due. The assignee shall not assign the Lease without the

prior express written consent of City and any assignment by Lessee shall contain a provision to this effect. Further, any assignee of Lessee shall be bound by the terms and conditions of this Lease. Any assignment without City's prior express written consent shall be null and void and, at City's election, shall constitute a default.

15.2 No Subleasing: Lessee shall not sublease the Leased Premises (or any part of the Leased Premises) or subcontract any operation or service it performs or is permitted to perform, without the prior express written consent of the City, which consent may be withheld at the sole discretion of City. A sublease made contrary to the requirements of this section shall be null and void. Unless otherwise stated in a written consent, a sublease is subject to all of the terms and conditions of the Lease. In addition, the Lessee shall at all times assume total responsibility for the acts and omissions of a sublessee and/or subcontractor.

15.3 Encumbrances: Lessee shall have no authority, express or implied, to create any lien, charge or encumbrance upon the Leased Premises or its leasehold interest created by this Lease. Lessee shall further not allow the Leased Premises to be or become subject to any non-consensual lien (including mechanic's liens), charge or encumbrance whatsoever. Lessee acknowledges and understands that the Leased Premises are owned by City, a Texas governmental entity, and as such, as a matter of law, no lien may attach to the Leased Premises and is void.

15.4 Landlord's Lien: Lessee hereby grants a lien to City upon all personal property owned by Lessee in or on the Leased Premises as a possessory pledge to secure the timely performance by Lessee of all its obligations hereunder. In the event of default of this Lease by Lessee, City is authorized to seize and hold all of the personal property belonging to Lessee on the Leased Premises to secure such performance, to sell same at public or private sale and to apply the proceeds thereof first to pay the expenses of the sale, and to pay all amounts due to City hereunder, holding the balance remaining subject to Lessee's order. A copy of this Lease shall be the only warrant required.

15.5 Non Partnership or Joint Venture: Nothing in this Lease is intended to nor shall be construed as in any way creating or establishing the relationship of partners between City and Lessee or as constituting either party as the agent, representative, or employee of the other party for any purpose or in any manner whatsoever, or of creating any joint enterprise of the parties.

15.6 Binding Effect: This Lease shall be binding on and shall inure to the benefit of the heirs, legal representatives, successors and assigns of the parties hereto.

15.7 Subordination: This Lease is subject and subordinate to the provisions of any existing or future agreements between the City and the United States or the State of Texas relating to the operation, management, maintenance, planning, and/or development of the Airport the terms and execution of which have been (or may be) required as a condition precedent to receiving federal and/or state funds for the development of the Airport and Lessee further agrees to conduct its operations under this Lease in accordance with and be subject to all obligations (including grant assurances), existing and future, of City to any regulatory authority. Should this

Lease contain provisions in conflict therewith, the latter shall control, and the terms of this Lease shall be modified accordingly.

15.8 Governing Law; Venue: This Lease shall be deemed to have been made and shall be construed in accordance with the laws of the State of Texas. Venue shall be in Dallas County, Texas.

15.9 Headings: All section, paragraph, and subparagraph headings contained in this Lease are for the convenience in reference only, and are not intended to define or limit the scope of this Lease or any provision therein.

15.10 Severability: In the event that any provision in this Lease is held to be invalid by any court of competent jurisdiction, the invalidity of any such provision shall in no way affect any other provision in this Lease, provided that the invalidity of any such provision does not materially prejudice either City or Lessee in their respective rights and obligations contained in the valid provisions of this Lease.

15.11 Counterparts: This Lease has been executed in several counterparts, each of which shall be deemed an original.

15.12 Amendments: Any modification, alteration, or amendment to the Lease shall be made in writing, agreed to, and approved by both parties.

15.13 Notices: Whenever any notices required by this Lease are to be made, given or transmitted to the parties, such notice shall be hand delivered or sent by certified mail, postage prepaid, and addressed to:

If to City:

Airport Manager
LANCASTER REGIONAL AIRPORT
P.O. Box 940
Lancaster, Texas 75146

If to Lessee:

With Copy to:

Robert E. Hager
Nichols, Jackson, Dillard, Hager & Smith, LLP
500 N Akard, Suite 1800
Dallas, Texas 75201

With Copy to:

The parties may, from time to time, designate to each other in writing a different address or different entity or entities to which all such notices, communications, or payments shall be given or made.

15.14 Entire Agreement: This Lease contains and embodies the entire agreement between the parties and supersedes and replaces any and all prior agreements, understandings and promises on the same subject, whether written or oral.

(Signatures on Following Page)

CITY/LESSOR:

SIGNED AND AGREED this ____ day of _____, 2012.

CITY OF LANCASTER, TEXAS

By: _____
Opal Mauldin-Roberston, City Manager

ATTEST:

Dolle Downe, City Secretary

LESSEE:

SIGNED AND AGREED this ____ day of _____, 2012.

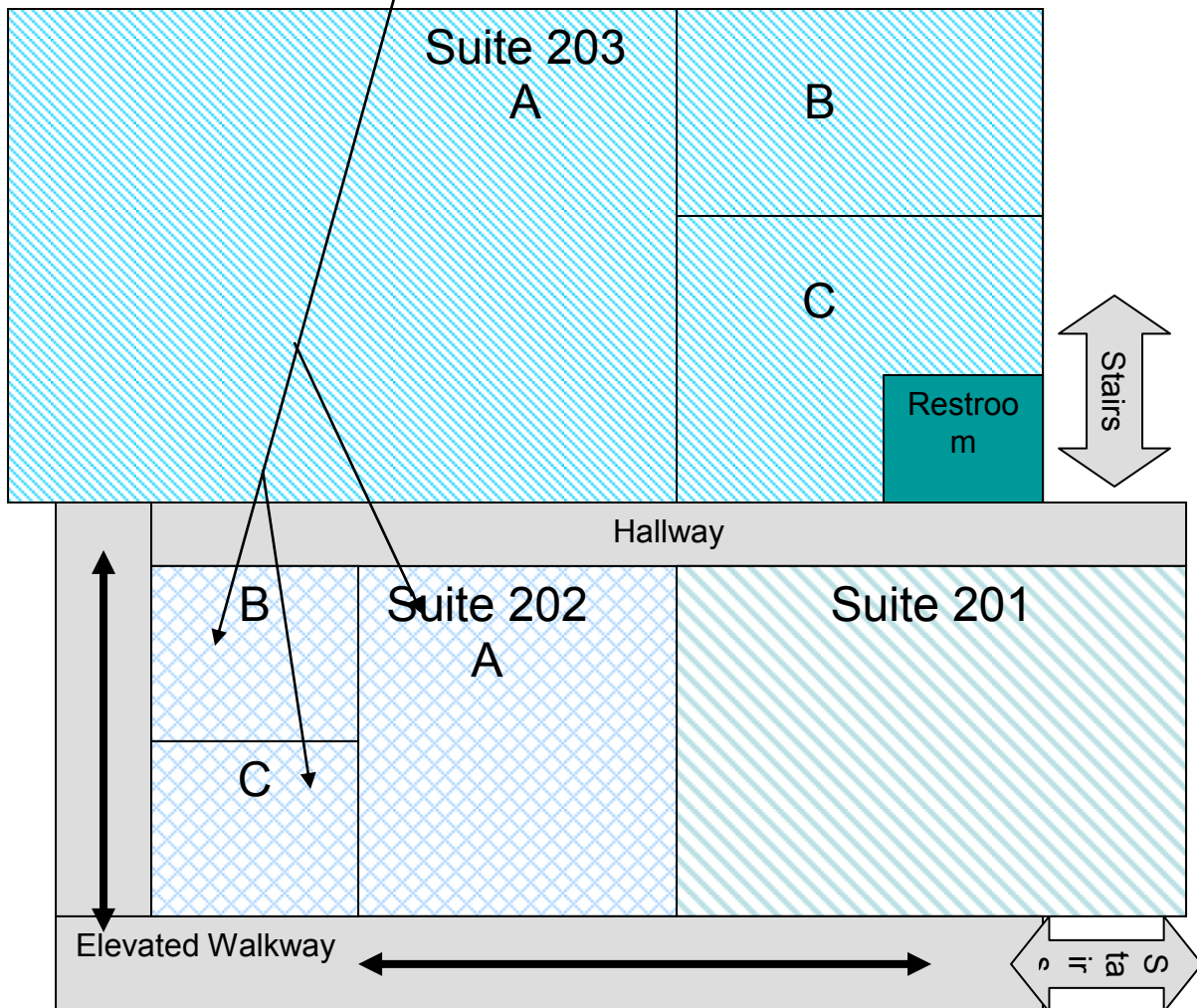
AVIATOUR, INC.

By: _____
Kenneth R. Madrid, Executive Vice-President



Exhibit A

730 Ferris Road, Lancaster, Texas 75146
Suite # 202 A ,B & C
Lancaster Municipal Airport
Second Floor Office
Airport Terminal Building
Approximately 440 SF



Not To Scale

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 6

Consider a resolution approving the terms and conditions of the City owned T-Hangar non-commercial lease from building 700 at the Lancaster Regional Airport.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Sound Infrastructure

Background

The City owns and leases five rows of T-hangars (buildings 660-700) of three different sizes based off aircraft wingspan. There are 92 units that the City rents for aircraft storage with end cap commercial spaces on the east end of each hangar row. The City T-hangars are near full occupancy most of the time. This agenda item brings forward a non-commercial lease agreement for Community T-hanger 700-116 (956 square feet) for a tenant, Mr. Sterling May.

Considerations

- **Operational** - The City T-hangar non-commercial lease is used for private aircraft owners.
- **Legal** - The lease agreement was reviewed and approved by the City Attorney.
- **Financial** - Lease rates vary based on size of the hangar. All rates were approved in the City's Master Fee Schedule. The monthly rate for this small size Community T-hanger is \$170.00 per month.
- **Public Information** - There are no public information requirements.

Options/Alternatives

1. Council may approve the resolution as presented.
2. Council may reject the resolution.

Recommendation

Staff recommends approval of the resolution.

Attachments

- Resolution
 - Exhibit “A” Lease Agreement
-

Submitted by:
Mark Divita, Airport Manager

RESOLUTION NO. 2012-0X-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, APPROVING THE TERMS AND CONDITIONS OF THE CITY OWNED T-HANGAR NON-COMMERCIAL LEASE FROM BUILDING 700 AT LANCASTER REGIONAL AIRPORT; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID LEASE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Lancaster Regional Airport has aircraft T-hangers available for monthly rental for revenue gain; and

WHEREAS, the City Council of Lancaster, Texas, desires to authorize the hangar lease pursuant to the lease listed in Exhibit "A";

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That the City T-hangar lease agreement attached hereto and incorporated herein by reference as Exhibit "A" having been reviewed by the City Council of the City of Lancaster, Texas and found to be acceptable and in the best interest of the City and its citizens, be, and the same is hereby, in all things approved.

SECTION 2. That the City Manager is hereby authorized to execute said lease agreement.

SECTION 3. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

DULY PASSED and approved by the City Council of the City of Lancaster, Texas, on this the 10th day of December 2012.

ATTEST:

APPROVED:

Dolle K. Downe, City Secretary

Marcus E. Knight, Mayor

APPROVED AS TO FORM:

Robert E. Hager, City Attorney



LANCASTER Regional AIRPORT

Agreement for Lease of T-Hangar for Storage of Aircraft

Non-Commercial Tenants

This CONTRACT and AGREEMENT OF LEASE, made this _____ day of _____, 20 _____, between the City of Lancaster, Texas, a municipal corporation, ("LESSOR") and **Sterling May**, (LESSEE"), evidences the following:

I.

LESSOR leases to LESSEE, and LESSEE takes from LESSOR, the following described premises located at the Lancaster Regional Airport ("Airport"), in the City of Lancaster, Dallas County, Texas, for and in consideration of the uses and for the terms and the rental hereinafter set forth, and subject and in accordance with the standard terms and provisions below.

1. **Premises:** Hangar Row and Suite **700-116**, located at the Airport, and consisting of approximately 956 square feet ("Leased Premises").

2. **Uses:** The leased premises shall be used and occupied only for the storing of aircraft owned, leased, and/or legally operated by LESSEE and related equipment. The leased premises shall be used and occupied only for the personal, business, and/or private use of the LESSEE. LESSEE shall provide LESSOR with a copy of the FAA Certificate of Aircraft Registration for the aircraft to be stored under this agreement. If the registration is not in the name of LESSEE, a copy of a valid lease or other documentation showing a possessory interest in the aircraft shall be provided. LESSEE shall not store non-aviation items such as house hold goods in leased premises. LESSEE shall not use the leased premises for any on going business or commercial operations warehousing goods or services for sale to third parties.

3. **Term:** The term of this lease will be from month to month, beginning the _____ day of _____, 20 _____. Either party may cancel and terminate this agreement by serving thirty (30) days written notice of its election to do so.

4. **Rent:** LESSEE shall pay LESSOR as rent **\$170.00** per month, due and payable in advance on the first day of each month.

a. All rental payments shall be delivered to LESSOR at the following address:

City of Lancaster
Finance Department
P.O. Box 940
211 N. Henry Street
Lancaster, TX 75146

b. All payments not received by the 10th of each month shall constitute a default and breach of this Lease Agreement as set forth in paragraph 11 herein. All payments not received by the 10th of each month shall be considered "past due" for purposes of incurring late charges as calculated in subsection (c) herein, and additional late charges will begin to accrue on the 11th day of each month.

c. In the event the payment is received after the 10th day of the month, there shall be added a late charge of ten percent (10%) of the amount due.

d. LESSEE'S agreement to make rental payments shall be a covenant independent of all other covenants herein.

e. LESSOR retains the right to review the monthly rental rates and to make adjustments to said rental rates to reflect the then current market rental rates charged for similar facilities.

5. **Utilities:** Utilities are included in LESSEE's rental payment.

II.

STANDARD TERMS AND PROVISIONS

1. **Prohibited Uses:** LESSEE shall not use or permit the use of the premises or any part thereof for any purpose or purposes other than those set forth herein. LESSEE shall not commit or cause to be committed any waste in or upon the premises or maintain any public or private nuisance or any other action which may interfere with or disturb the quiet enjoyment of any other tenant of the building or buildings, or permit the use of the premises for any improper or unlawful purposes. Hazardous activities such as, but not limited to: smoking, painting, doping or the other application of hazardous substances are expressly prohibited. Nothing contained in this Section 1 shall, however, prohibit or limit LESSEE's right to use any apparatus, machinery, equipment or devices necessary or useful to LESSEE in the conduct of its activities on or about the premises.

2. **Disabled Aircraft:** LESSEE shall store only the following aircraft on the lease premises under any of the following conditions:

- a. Aircraft in a current airworthy condition according to Federal Aviation Regulations with a current FAA airworthiness certificate and U.S. or foreign registration,
- b. Aircraft with a current FAA airworthiness certificate and registration in a continuing process of overhaul and/or repair showing monthly progress,
- c. Final assembly of amateur built aircraft in preparation to obtain airworthiness certification.

Restoration or construction of an aircraft shall be completed (and an airworthiness certificate issued for amateur built aircraft) within 5 yrs from the beginning of this lease.

Monthly progress is defined as a major component, subcomponent, major system or subsystem is completed or installed on the aircraft every 30 days with appropriate log entries

made.

Upon request from the Airport Manager, LESSEE shall provide monthly evidence of progress. Evidence includes but is not limited to: visual inspection of aircraft, photographs and log entries.

Should LESSEE sell the aircraft, LESSEE shall have ninety (90) days to acquire an aircraft to house upon the leased premises or LESSEE shall relinquish said premises to LESSOR.

Any exception to forgoing requirements must be approved by LESSOR'S Airport Manager.

3. **Compliance with Applicable Laws:** LESSEE shall comply with all applicable laws, ordinances, rules, regulations, and orders of any Federal, State, and City law governing the conduct of LESSEE'S activities on or about the premises.

4. **Alterations.** LESSEE shall make no structural or electrical changes or alterations, or construct any permanent additions or improvements, or do any work in connection therewith, on or about the premises without the prior written consent of the LESSOR'S Airport Manager, whose decision shall be final, and which consent shall not be unreasonably withheld. Any permanent improvements or additions to the leased premises shall be deemed to be fixtures and title to said improvements or additions shall vest in the LESSOR immediately upon completion of construction or attachment.

5. **Entry and Inspection:** LESSOR shall have the right to enter upon and inspect the premises from time to time during the term hereof, to make any repairs deemed necessary by the LESSOR for the safety, improvement, or preservation of the leased premises, without abatement of rent; provided however, that LESSOR shall not, during the course of any such inspection or repairs, unreasonably interfere with the LESSEE'S use and enjoyment of the premises. In lieu of an airport lock/key, LESSEE shall provide a copy of a key or lock combination to airport office.

6. **Services Furnished by LESSOR:** LESSOR shall furnish adequate utility power service for night time lighting. LESSOR assumes no liability to LESSEE for failures or interruptions of any and all services or utilities furnished to LESSEE when due to causes beyond the control of LESSOR, including but not limited to floods, fire, and power failures.

7. **Care of Premises by LESSEE:** LESSEE shall keep the leased premises in a safe, neat, clean, and presentable condition at all times and shall promptly repair any damage caused by LESSEE, its officers, agents, employees, or invitees.

8. **Indemnity and Hold Harmless:** LESSEE agrees to indemnify, defend, and hold LESSOR, its officers, agents, employees, or invitees harmless from and against all claims, demands, causes of actions, suits or judgments (including costs and expenses incurred in connection therewith) for injuries to persons or for loss or damage to property arising out of or in connection with the negligent or intentional

act or omission of LESSEE, its officers, agents, employees, or invitees related to or association with the use and occupancy of the Leased Premises and airport facilities including, but not limited to, claims or damage related to or associated with the storage or maintenance of LESSEE's aircraft upon Airport, or from injury or damage caused to any person's property by reason of the operations of said aircraft. LESSEE further covenants and agrees that LESSEE shall not hold LESSOR or any of its officers, agents, or employees responsible for any loss to LESSEE'S aircraft, automobile, personal property, parts, or supplies that may be located or stored in, on, or about the Leased Premises, where such loss is caused by Natural Disaster fire, rain, windstorm, hail.

9. **Disclaimer:** LESSEE agrees to accept all facilities and the leased premises in the condition in which they are found. LESSOR disclaims and LESSEE accepts LESSOR'S disclaimer of any warranty, express or implied, of the conditions or fitness for the use of the leased premises.

10. **Default:** The following events shall be deemed to be events of default by LESSEE under this Lease Agreement:

a. LESSEE shall fail to pay any installment of rent, and such failure shall continue for a period of ten (10) days following the due date of said installment.

b. LESSEE shall fail to comply with any term, provision or covenant of this Lease Agreement, other than the payment of rent, and shall not cure such failure within twenty (20) days after written notice thereof to LESSEE.

c. LESSEE shall fail to provide lock combination or key to lock on assigned hangar to airport administration.

d. LESSEE shall fail to provide accurate and correct contact information as set forth in paragraph 18 – "Notices".

Upon the occurrence of any event of default specified above, LESSOR shall have the option to pursue any one or more of the following remedies without any notice or demand whatsoever:

a. Terminate this Lease Agreement in which event LESSEE shall immediately surrender the premises to LESSOR; and if LESSEE fails to do so, LESSOR may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession and expel or remove LESSEE, any other person who may be occupying said premises or any part thereof, and contents therein, including LESSEE'S aircraft, by force if necessary, without being liable for prosecution or any claim of damages therefor; and LESSEE agrees to pay to LESSOR on demand the amount of all loss and damage which LESSOR may suffer by reason of such termination, whether through inability to re-let the premises on satisfactory terms or otherwise.

b. Enter upon and take possession of the premises and expel or remove LESSEE and any other person who may be occupying the premises or any part thereof, by force if necessary, without being liable for prosecution or any claim of damages therefor; and if LESSOR so elects, re-let the premises on such terms as LESSOR shall deem advisable and receive the rent thereof; and LESSEE agrees to pay to LESSOR on demand

any deficiency that may arise by reason of such re-letting.

c. Enter upon the premises, by force if necessary, without being liable for prosecution or any claim of damages therefor and do whatever LESSEE is obligated to do under the terms of this Lease Agreement; and LESSEE agrees to reimburse LESSOR on demand for any expenses which LESSOR may incur in thus effecting compliance with LESSEE's obligations under this Lease Agreement; and LESSEE further agrees that LESSOR shall not be liable for any damages resulting to LESSEE from such action.

No reentry or taking possession of the premises by LESSOR shall be construed as an election on its part to terminate this Lease Agreement, unless a written notice of such intention be given to LESSEE. Notwithstanding any such re-letting or reentry or taking possession, LESSOR may at any time thereafter elect to terminate this Lease Agreement for a previous default. Pursuit of any of the foregoing remedies shall not preclude pursuit of any of the other remedies herein provided or any other remedies provided by law, nor shall the pursuit of any remedy herein provided constitute a forfeiture or waiver of any rent due to LESSOR hereunder or of any damages accruing to LESSOR by reason of the violation of any of the terms, provisions and covenants herein contained. LESSOR's acceptance of rent following an event of default hereunder shall not be construed as LESSOR's waiver of such event of default. No waiver by LESSOR of any violation or breach of any of the terms, provisions and covenants herein contained shall be deemed or constitute a waiver of any other violation or breach of any of the terms, provisions and covenants herein contained. Forbearance by LESSOR to enforce one or more of the remedies herein provided upon an event of default shall not be deemed or construed to constitute a waiver of such default. The loss or damage that LESSOR may suffer by reason of termination of this Lease Agreement or the deficiency from any re-letting as provided for above shall include the expense of repossession and any repairs or remodeling undertaken following possession. Should LESSOR at any time terminate this Lease Agreement for any default, in addition to any other remedy LESSOR may have, LESSOR may recover from LESSEE all damages LESSOR may incur by reason of such default, including cost of recovering the premises and reasonable attorney's fees expended by reason of default.

11. Assignment, Encumbrances, and Subletting: LESSEE shall not assign, pledge, or otherwise encumber this lease or the premises covered thereby. LESSEE shall not sublet the premises or any part thereof, or furnish to any other person any ground space, office space, aircraft storage space, or other right or privilege in or on any Airport property without the prior written consent of the LESSOR's Airport Manager. Said consent shall not be unreasonably withheld. The rental rate paid by the SUBLESSEE shall not be greater than that paid by LESSEE to LESSOR.

It is understood that consent of the LESSOR to any subletting in one instance shall not constitute consent of the LESSOR to any other subletting. Any assignment, sublease, or other such agreements consented to shall be in writing and shall be approved as to form by LESSOR'S City Attorney.

12. Surrender of Premises: Upon termination of this lease by either party, or by reason of default or otherwise, LESSEE shall remove itself, aircraft, and all other personal property, debris and equipment stored by LESSEE in and upon the premises. LESSEE shall, at its own expense, repair any damage cause by LESSEE'S use. LESSEE shall, upon termination of this lease, surrender the premises to LESSOR in the same condition as received, ordinary

wear and tear excepted. LESSOR will charge a reasonable fee for cleaning and/or disposal of any items left behind upon the premises.

13. **Rules and Regulations:** LESSEE shall faithfully observe and comply with all rules and regulations of LESSOR, including any rules and regulations promulgated by LESSOR'S Airport Manager, not inconsistent with the provisions of this lease. Such rules and regulations shall be communicated by LESSOR'S Airport Manager, in writing, to LESSEE and necessary for the reputation, safety, care, or appearance of the building, or preservation of good order, the operation or maintenance of equipment, or the comfort or safety of other Airport tenants.

14. **Successors and Assigns:** The terms, covenants, agreements, and conditions contained herein shall be binding upon LESSEE'S heirs, successors, executors, administrators, and assignees. This provision shall not in any way affect the requirements set forth in section II, paragraph 9.

15. **Signs:** LESSEE shall not erect, install, or place any signs on or about the leased premises without the prior written consent and approval of the LESSOR'S Airport Manager.

16. **Ingress and Egress:** LESSEE, its invitees, visitors, and suppliers of materials and services shall have full and free rights of ingress and egress to and from the premises and to and from other Airport buildings subject to rules and regulations of LESSOR and LESSOR'S Airport Manager.

17. **Chemicals and other Toxic Substances:** No chemicals or other toxic substances shall be stored unless in compliance with adopted Lancaster Regional Airport rules and regulations, as amended, which are incorporated herein as is set forth in full and on file with the City Manager or his/her designee.

18. **Notices:** All legal notices given or required in connection with this lease shall be in writing and shall be sent via Mail or E-Mail to the following persons(s):

LESSOR: City of Lancaster
Lancaster Regional Airport
P.O. Box 940
211 N. Henry Street
Lancaster, TX 75146

LESSEE: Sterling May

3916 Potomac Ave

Dallas, TX 75005

219-522-7735

A56te@yahoo.com

19. **Insurance:** LESSEE shall, at its own option, carry its own insurance on its aircraft and other equipment which LESSEE stores in or on the leased premises.

20. **Waiver of Attorney Fees:** LESSOR and LESSEE covenant and agree that in the event of any litigation arising between the parties to this lease, LESSEE shall be solely responsible for payment of its attorney's fees. In no event shall LESSOR be responsible for LESSEE'S attorney's fees regardless of the outcome of the litigation.

21. **Entire Agreement:** This agreement constitutes the entire understanding between the parties, and, as of its effective date, supersedes all prior or independent agreements covering the LESSEE'S occupation of the leased premises. Any change or modification hereof shall be in writing, signed by both parties. The parties to this agreement hereby agree and acknowledge that they are the principals to the agreement and have the power, right, and authority to enter into this agreement and are not acting on behalf, or as an agent, of any third party.

22. **Severability:** If any provision of this agreement shall be finally declared void or illegal by a court having competent jurisdiction, the entire agreement shall not be void, but the remaining provisions shall continue in effect as nearly as possible in accordance with the original intent of the parties. Venue governed by Texas law except where exempted by Federal law and Rules and Regulations.

23. **Governing Law; Venue:** This Agreement shall be governed by and construed in accordance with the laws of the State of Texas. Venue for any disputes arising from or related to the performance of this Agreement shall be in a state district court in Dallas County, Texas.

24. **Captions:** The Captions to the various clauses of this agreement are for informational purposes only and in no way alter the substance of the terms and conditions of this agreement.

25. **Landlord's Lien:** Pursuant to Section 54.021 of the Texas Property Code, LESSOR has a preference lien on the property of the LESSEE or any SUBLESSEE in the building for rent that is due and for rent that is to become due during the current 12 month period succeeding the date of the beginning of the rental agreement or an anniversary of that date.

IN WITNESS HEREOF, the parties executed this lease as of the day and year first above written.

CITY OF LANCASTER, LESSOR

LESSEE:

By: _____
Opal Mauldin Robertson,
City Manager

ATTEST:

Dolle K. Downe, City Secretary

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 7

Consider resolutions authorizing the Request for Qualifications (RFQ) 2012-38 for Professional Engineering Services for various projects to consulting engineers:

- A. Birkhoff, Hendricks & Carter (BHC); and**
- B. Teague Nall & Perkins (TNP); and**
- C. Bury & Partners**

to serve and support engineering needs for various projects within the City on an as needed basis; and authorizing the City Manager to execute agreements pursuant to approval.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Sound Infrastructure

Background

In accordance with the provisions of Texas Local Government Code, Chapter 271 and Government Code 2267, the City of Lancaster placed a request for qualifications (RFQ) for engineering services to assist the City with various projects on an as needed basis. By selecting three firms, we can streamline the process and save time on all projects.

Considerations

This request is to award contract(s) for professional services to the above-mentioned three Engineering Firms. The RFQ was advertised in June-July 2012. A total of thirty eight (38) firms responded to the RFQ. Twenty one (21) of these firms were invited for an interview with the selection panel. Six of the firms were MWBE/HUB vendors. The firms of Birkhoff, Hendricks and Carter (BHC), Teague Nall and Perkins (TNP) and Bury & Partners were identified as the top three firms. The initial contract period is for one year with the option to renew four additional one-year periods.

- **Operational** - Specific projects will be managed by the Engineering Division in conjunction with any other division/department depending on the project.
- **Legal** - This RFQ was processed in accordance with all local and state purchasing statutes. Thirty eight Statement of Qualifications (SOQs) were received. Resolution was reviewed and approved by the City Attorney. Any project specific contracts will be reviewed by the City Attorney.
- **Financial** - There are no financial obligations to the City at this time. Firms will be engaged on an as needed basis in compliance with the submitted fee schedules.
- **Public Information** - RFQs were advertised on June 21, 2012, on the City's e-procurement system. RFQs were opened on November 14, 2012. There are no other public information requirements.

Options/Alternatives

1. City Council may approve the resolutions as presented.
2. City Council may reject resolutions.

Recommendation

Staff recommends approval of the resolutions authorizing agreements for Professional Services with Birkhoff, Hendricks and Carter (BHC), Teague Nall and Perkins (TNP) and Bury & Partners.

Attachments

- Resolutions
- Professional Services Agreements

Submitted by:

Shwetha Pandurangi, P.E., CFM, City Engineer

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS AUTHORIZING THE REQUEST FOR QUALIFICATIONS (RFQ) 2012-38 FOR PROFESSIONAL ENGINEERING SERVICES FOR VARIOUS PROJECTS TO CONSULTING ENGINEERS, BIRKHOFF, HENDRICKS, & CARTER (BHC), TO SERVE AND SUPPORT ENGINEERING NEEDS FOR UPCOMING ENGINEERING PROJECTS WITHIN THE CITY; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID AGREEMENT; PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, in accordance with the provisions of the Texas Local Government Code, Chapter 271 and Government Code 2267, The City of Lancaster placed a request for qualification (RFq) to contract with qualified teams of professionals with considerable experience in the delivery of engineering services, to the City of Lancaster; and

WHEREAS, the City Council of Lancaster desires to contract with consulting Engineers, Birkhoff, Hendricks, & Carter (BHC), for the above referenced services; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS;

SECTION 1. That the City Council hereby approving a contract for engineering services with Birkhoff, Hendricks, & Carter (BHC), and the City Manager is hereby authorized to execute the Agreements, which is attached hereto and incorporated herein.

SECTION 2. That any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 3. That should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 4. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF
LANCASTER, TEXAS, this 10th day of December, 2012.**

APPROVED:

MARCUS E. KNIGHT, MAYOR

ATTEST:

DOLLE K. DOWNE, CITY SECRETARY

APPROVED AS TO FORM:

ROBERT E. HAGER, CITY ATTORNEY
(REH/mpm)

ENGINEERS MASTER SERVICES CONTRACT

583

AGREEMENT

NOW, THEREFORE, the **City** and the **Engineer**, in consideration of the mutual covenants and agreements herein contained, do mutually agree as follows:

The **City** agrees to retain the **Engineer**, and the **Engineer** agrees to provide Services in connection with the Projects, as defined herein, and for having rendered such Services the **City** agrees to pay to the **Engineer** fee for these Services as provided herein based on the Fee Schedule attached hereto and defined by a work or task order. All Services under this Contract shall be performed under the direct supervision of the **City Engineer**.

1. General Services.

- A. General Services Parts I & II: The work tasks and activities to be performed and deliverable to be provided by the **Engineer** shall be in accordance with Attachment A, General of Services, including modifications to the Basic Services as mutually agreed by said work or task orders to by the **City** and the **Engineer** in accordance with the provisions of this Contract.
- B. Additional Services Not Included in General Services: When mutually agreed to in writing by the **City** and the **Engineer** by the issuance of a written work order or invoice, the Additional Services shall be provided by the **Engineer**. These Additional Services are not included as a part of Basic Services and shall be paid for by the **City** in addition to payment for General Services. Should it be determined that one or more of the requirements of this Contract conflict with the requirements of the work or task order, including modifications to the work or task orders or any attachments to this contract; the requirement of the Contract shall govern.

2. **Progress Schedule.** Within ten (10) days after receiving work or task order and/or Notice to Proceed (NTP) the **Engineer** shall submit to the **City** a Schedule of Services consisting of a listing of the major Project tasks, the estimated consultant hours required to perform the tasks, the percentage of the Contract budget estimated to be allocated to each task and a bar chart schedule showing task beginning and completion dates. Significant milestones for the Project shall be identified. At a minimum, milestones shall be provided for the three design submittals described in Attachment A, work or task order: Conceptual Design Submittal, Preliminary Design Submittal, and Final Plans, Specifications, and Estimate (PS&E) Submittal, if any, as required for the specific task. The **Engineer** shall provide to the **City** information to report and monitor the task and applicable Project Schedule by completing a "Design Progress Report" on a form provided by the **City**. The **Engineer** shall complete and provide to the **City** said report at two week intervals.

3. Compensation.

- A. Basic Services Part I Fee: The **Engineer** shall be paid a fee for Basic Services Part I under this Contract pursuant to the Fee Schedule described in Attachment A, General Services and specific work or task order for a task. However, that modifications to the General Services Part I, or other conditions defined herein may necessitate a change of Fee which shall be reduced to writing and approved by the City or its designee.
 - B. General Services Part II Fee: The **Engineer** should be paid a fee under this Contract for General Services Part II pursuant to the Fee Schedule described in Attachment A, General Services as provided in the work order. General Services Part II Fee shall not exceed the lump sum as provided in said work order(s) provided, however, that modifications to the General Services Part II, or other conditions defined herein may necessitate a change of Basic Fee which shall be reduced to writing and approved by the City or its designee.
 - C. Total Maximum Fee: Total Maximum Fee for a task shall be provided in said work order(s).
 - D. Invoices: The **Engineer** shall submit invoices at not less than thirty (30) calendar days for General Services Part I and/or Basic Services Part II on or before the twenty fifth (25th) calendar day of the month, or the preceding business day if the twenty fifth occurs on a weekend and/or observed holiday. Payment shall be based on the work order(s) and invoices submitted to the **City**, provided that Services completed as indicated in the Design Progress Reports approved by the **City** equals or exceeds the increment percentage requested on the **Engineer's** invoices, as applicable. **Engineer's** invoices to **City** shall provide complete information and documentation to substantiate **Engineer's** charges and shall be in a form to be specified by the **City Engineer**. Should additional documentation be requested by the **City Engineer** the **Engineer** shall comply promptly with such request.
 - E. Payments: All payments to **Engineer** shall be made on the basis of the invoices submitted by the **Engineer** and approved by the **City**. Following approval of invoices, **City** shall endeavor to pay **Engineer** promptly, however, under no circumstances shall **Engineer** be entitled to receive interest on amounts due. The **City**, in compliance with Texas State law, shall process a maximum of one payment to the **Engineer** per month. **City** reserves the right to correct any error that may be discovered in any invoice whether paid to the **Engineer** or not, and to withhold the funds requested by the **Engineer** relative to the error.
4. **Fee Increases.** Any other provision in this Contract notwithstanding, it is specifically understood and agreed that the **Engineer** shall not be authorized to undertake any Services pursuant to this Contract requiring the payment of any fee, expense or reimbursement in addition to the fees stipulated in Article 3 of this Contract, without having first obtained

specific written authorization from the **City**. The written authorization for additional Services shall be in the form of a Modification to work orders approved by the City Engineer and/or the City Council, if required.

5. **Modifications to the Work or Task Order.** Either the **Engineer** or the **City Engineer** may initiate a written request for a Modification to the work or task order when in the opinion of the requesting Party, the needs and conditions of the Project warrant a modification. Upon the receipt of a request by either Party, the **Engineer** and the **City Engineer** shall review the conditions associated with the request and determine the necessity of a modification. When the Parties agree that a modification is warranted, the **Engineer** and the **City Engineer** shall negotiate the specific modification(s) and any changes in the Total Maximum Fee or Project Schedule resulting from the modification(s). Approval of a modification shall be in the form of a written Modification to the General Services which clearly defines the changes to the previously approved General Services, Fee and/or Project Schedule, as provided in a work order. Said written Modification shall be approved by **Engineer**, authorized by the City Council, if required, and issued by the **City Engineer**. Issuance of the approved General Services modification shall constitute a notice to proceed with the Project in accordance with the modified General Services. The **City Engineer** may issue written Modifications to the General Services without prior approval of the City Council when the modifications are to be accomplished within the authorized Total Maximum Fee and do not materially or substantively alter the overall scope of the Project, the Project Schedule or the Services provided by the **Engineer**.
6. **Project Deliverables.** For each submittal identified in a work order, General Services, the **Engineer** shall provide the **City** with one set of reproducibles, one set of bluelines or hard copy and electronic media of the submittal documents. For any required environmental assessment, the **Engineer** shall provide one set of draft and one set of final Environmental Reports. The Environmental Reports, of any, shall be submitted as duplicate original and on electronic media. The electronic file may omit photographs and government prepared maps. If photographs are included in the report they shall be taken with a 35 mm camera or larger format camera. Color laser copies may be substituted for the original photographs in the final report.

A transmittal letter shall be included with the Environmental Reports, if any, and shall include an executive summary outlining: a.) Findings of the Reports; b.) Conclusions; c.) Recommendations; and d.) Mitigation/remediation cost estimates.
7. **Project Control.** It is understood and agreed that all Services shall be performed under the administrative direction of the **City Engineer**. No Services shall be performed under this Contract until a written Notice to Proceed is issued to the **Engineer** by the **City Engineer**. In addition, the **Engineer** shall not proceed with any Services after the completion and delivery to the **City** of the Submittal as described in the General Services without written instruction from the **City**. The **Engineer** shall not be compensated for any Services performed after the said submittals and before receipt of **City's** written instruction to proceed.

8. **Partnering.** The **City** shall encourage participation in a partnering process that involves the **City, Engineer** and his or her sub-consultants, and other supporting jurisdictions and/or agencies. By engaging in partnering, the parties do not intend to create a legal partnership, to create additional contractual relationships, or to in any way alter the legal relationship which otherwise exists between the **City** and the **Engineer**. The partnering effort shall be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives of partnering are effective and efficient contract performance and completion of the Project within budget, on schedule, in accordance with the General Services, and without litigation. Participation in partnering shall be totally voluntary and all participants shall have equal status.
9. **Disputes.** The **City Engineer** shall act as referee in all disputes under the terms of this Contract between the Parties hereto. In the event the **City Engineer** and the **Engineer** are unable to reach acceptable resolution of disputes concerning the General Services to be performed under this Contract, the **City** and the **Engineer** shall negotiate in good faith toward resolving such disputes. The **City Engineer** may present unresolved disputes arising under the terms of this Contract to the City Manager or designee. The decision of the City Manager or designee shall be final and binding. An irreconcilable or unresolved dispute shall be considered a violation or breach of contract terms by the **Engineer** and shall be grounds for termination. Any increased cost incurred by the City arising from such termination shall be paid by the **Engineer**.
10. **Engineer's Seal.** The **Engineer** shall place his Texas Professional Engineers seal on all engineering documents and engineering data prepared under the supervision of the **Engineer** in the performance of this Contract.
11. **Liability.** Approval of the Plans, Specifications, and Estimate (PS&E) by the **City** shall not constitute nor be deemed a release of the responsibility and liability of **Engineer**, its employees, subcontractors, agents and consultants for the accuracy and competency of their designs, working drawings, tracings, magnetic media and/or computer disks, estimates, specifications, investigations, studies or other documents and work; nor shall such approval be deemed to be an assumption of such responsibility by the **City** for any defect, error or omission in the design, working drawings, tracings, magnetic media and/or computer disks, estimates specifications, investigations, studies or other documents prepared by **Engineer**, its employees, subcontractors, agents and consultants. **Engineer** shall indemnify **City** for damages resulting from such defects, errors or omissions and shall secure, pay for and maintain in force during the term of this Contract sufficient errors and omissions insurance in the amount of \$1,000,000.00 single limit, with certificates evidencing such coverage to be provided to the **City**. The redesign of any defective work shall be the sole responsibility and expense of the **Engineer**. Any work constructed, found to be in error because of the **Engineer's** design, shall be removed, replaced, corrected or otherwise resolved at the sole responsibility and expense of the **Engineer**. The parties further agree that this liability

provision shall meet the requirements of the express negligence rule adopted by the Texas Supreme Court and hereby specifically agree that this provision is conspicuous.

12. **Indemnification.** **Engineer** shall indemnify, hold harmless and defend the City of Lancaster, its officers, agents and employees from any loss, damage, liability or expense, including attorney fees, on account of damage to property and injuries, including death, to all persons, including employees of **Engineer** or any associate consultant, which may arise from any errors, omissions or negligent act on the part of **Engineer**, its employees, agents, consultants or subcontractors, in performance of this Contract, or any breach of any obligation under this Contract. It is further understood that it is not the intention of the parties hereto to create liability for the benefit of third parties, but that this agreement shall be solely for the benefit of the parties hereto and shall not create or grant any rights, contractual or otherwise to any person or entity. The parties further agree that this indemnification provision shall meet the requirements of the express negligence rule adopted by the Texas Supreme Court and hereby specifically agree that this provision is conspicuous.
13. **Delays and Failure to Perform.** **Engineer** understands and agrees that time is of the essence and that any failure of the **Engineer** to complete the Services of this Contract within the agreed Project Schedule shall constitute material breach of this Contract. The **Engineer** shall be fully responsible for its delays or for failures to use diligent effort in accordance with the terms of this Contract. Where damage is caused to the **City** due to the **Engineer's** failure to perform in these circumstances, the **City** may withhold, to the extent of such damage, **Engineer's** payments hereunder without waiver of any of **City's** additional legal rights or remedies. The **Engineer** shall not be responsible for delays associated with review periods by the **City** in excess of the agreed Project Schedule.
14. **Termination of Contract.** It is agreed that the **City** or the **Engineer** may cancel or terminate this Contract for convenience upon fifteen (15) days written notice to the other. Immediately upon receipt of notice of such cancellation from either party to the other, all Services being performed under this Contract shall immediately cease. Pending final determination at the end of such fifteen-day period, the **Engineer** shall be compensated on the basis of the percentage of Services provided prior to the receipt of notice of such termination and indicated in the final Design Progress Report submitted by the **Engineer** and approved by the **City**.
15. **Personnel Qualifications.** **Engineer** warrants to the **City** that all Services provided by **Engineer** in the performance of this Contract shall be provided by personnel who are appropriately licensed or certified as required by law, and who are competent and qualified in their respective trades or professions.
16. **Quality Control.** The **Engineer** agrees to maintain written quality control procedures. The **Engineer** further agrees to follow those procedures to the extent that, in the **Engineer's** judgment, the procedures are appropriate under the circumstances.

17. **Ownership.** All **Engineer's** designs and work product under this Contract, including but not limited to tracings, drawings, electronic or magnetic media and/or computer disks, estimates, specifications, investigations, studies and other documents, completed or partially completed, shall be the property of the **City** to be used as **City** desires, without restriction; and **Engineer** specifically waives and releases any proprietary rights or ownership claims therein and is relieved of liability connected with any future use by **City**. Copies may be retained by **Engineer**. **Engineer** shall be liable to **City** for any loss or damage to such documents while they are in the possession of or while being worked upon by the **Engineer** or anyone connected with the **Engineer**, including agents, employees, consultants or subcontractors. All documents so lost or damaged while they are in the possession of or while being worked upon by the **Engineer** shall be replaced or restored by **Engineer** without cost to the **City**.
18. **Project Records and Right to Audit.** The **Engineer** shall keep, retain and safeguard all records relating to this Contract or work performed hereunder for a minimum period of three (3) years following the Project completion, with full access allowed to authorized representatives of the **City** upon request for purposes of evaluating compliance with provisions of this Contract. Should the **City Engineer** determine it necessary, **Engineer** shall make all its records and books related to this Contract available to **City** for inspection and auditing purposes.
19. **Non-Discrimination.** As a condition of this Contract, the **Engineer** shall take all necessary action to ensure that, in connection with any work under this Contract it shall not discriminate in the treatment or employment of any individual or groups of individuals on the grounds of race, color, religion, national origin, age, sex or physical impairment unrelated to experience, qualifications or job performance, either directly, indirectly or through contractual or other arrangements.
20. **Gratuities.** City of Lancaster policy mandates that employees shall never, under any circumstances, seek or accept, directly or indirectly from any individual doing or seeking to do business with the City of Lancaster, loans, services, payments, entertainment, trips, money in any amount, or gifts of any kind.
21. **No Waiver.** No action or failure to act on the part of either Party at any time to exercise any rights or remedies pursuant to this Contract shall be a waiver on the part of that Party of any of its rights or remedies at law or contract.
22. **Compliance with Laws.** The **Engineer** shall comply with all Federal, State and local laws, statutes, City Ordinances, rules and regulations, and the orders and decrees of any courts, or administrative bodies or tribunal in any matter affecting the performance of this Contract, including without limitation, worker's compensation laws, minimum and maximum salary and wage statutes and regulations, and licensing laws and regulations. When required, **Engineer** shall furnish the **City** with satisfactory proof of compliance therewith.

23. **Severability.** In case one or more of the provisions contained in this Contract shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions hereof and this Contract shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
24. **Venue.** With respect to any and all litigation or claims, the laws of the State of Texas shall apply and venue shall reside in Dallas County.
25. **Prior Negotiations.** This Contract supersedes any and all prior understandings and agreement by and between the Parties with respect to the terms of this Contract and the negotiations preceding execution of this Contract.
26. **Contacts.** The **Engineer** shall direct all inquiries from any third party regarding information relating to this Contract to the City Engineer.
27. **Term.** The term of this agreement and attachments hereto is for three (3) years.

27. **Notification.** All notices to either Party by the other required under this Contract shall be delivered personally or sent by certified U.S. mail, postage prepaid, addressed to such Party at the following respective addresses:

City: City of Lancaster, Texas

Engineer: _____

IN WITNESS WHEREOF, the City of Lancaster, Texas and the **Engineer** has caused these presents to be executed by duly authorized representatives on the day and year set forth above.

THE CITY OF LANCASTER

BY:

Date: _____

ATTEST:

BY:

Date: _____

ATTEST:

(CORPORATE SEAL)

ATTACHMENT "A" GENERAL SERVICES

(To be modified for Project Specific Services)

The **Engineer** agrees to render services necessary for the development and completion the Project as outlined herein. The Basic Services to be performed by **Engineer** under this Contract include the following:

A. SCHEMATIC DESIGN

1. When requested by the **City**, the **Engineer** shall attend preliminary conferences with authorized representatives of the **City** regarding the project and such other conferences as may be necessary in the opinion of the **City** so that the plans and specifications which are to be developed hereunder by the **Engineer**, will result in providing facilities which are economical in design and conform to instruction from the **City**.
2. The **Engineer** shall attend such conferences with officials of other agencies including other engineering and/or surveying firms under contract with the **City**, as may be necessary in the opinion of the **City** for coordination of the proposed paving and related improvements with the requirements of such other agencies. It shall be the **Engineer's** duty hereunder to secure necessary information from such agencies.
3. The **Engineer** shall advise the **City** with regard to the necessity for subcontract work such as special surveys, tests, test borings, or other subsurface investigations in connection with design and engineering work to be performed hereunder. The **Engineer** shall also advise the **City** concerning the results of same. Such surveys, tests, and investigations shall made only upon authorization by and at the expense of the **City**.
4. During the schematic design phase the **Engineer** shall coordinate with all utilities as to any proposed utility lines or the need for adjustment to the existing utility lines within the project limits. The information obtained shall be shown on the schematic plans and addressed in the schematic design report. The **Engineer** shall show on the schematic, preliminary, and final plans the location of the proposed utility lines, existing utility lines, and any adjustments and/or relocation of the existing lines based of information provided by the respective utility company.
5. The **Engineer** shall provide necessary design field surveys for his use in the preparation of plans and specifications. The **Engineer** shall also provide sufficient property surveys to prepare the necessary right-of-way document and related exhibit for acquisition of right-of-way with use of **Engineer's** documents.
6. The **Engineer** shall supply construction plans to all utility companies, including but not limited to franchised utilities and pipeline companies which have existing and proposed facilities within the limits of the Project. The above mentioned construction plans shall consist of the following: one set of schematic plans, one set of dated preliminary plans, and, one set of dated and approved advertising (final) plans.

7. The **Engineer** shall furnish for **City** review two (2) copies each of the schematic engineering plans at a scale of 1"=20' and a written report on the project in sufficient detail to indicate clearly the problems involved and the alternate solutions available to the **City**, to include layouts, preliminary right-of-way needs, opinion of probable cost for each alternate proposed, and the **Engineer's** recommendation(s).

B. PRELIMINARY DESIGN

1. The **Engineer** shall meet with the **City** to discuss any schematic design plans and report, and the **Engineer** will then proceed with preparation of the preliminary design of the project incorporating all comments received from the **City** and agreed upon by both the **City** and the **Engineer** into these plans.
2. The **Engineer** shall provide detailed design data, profiles, cross-sections where appropriate, opinions of probable cost, and furnish two (2) copies of detailed preliminary design plans for the project to the **City** for review. The **Engineer** shall indicate on the plans the location of existing and proposed utilities and storm drains. Storm drainage calculations shall also be provided on the drainage layout sheet in the plans.
3. After receipt of preliminary design review comments from the **City**, the **Engineer** shall make all corrections noted and then commence preparation of the final design plans and specification/contract documents.

C. FINAL PLANS, SPECIFICATIONS, AND ESTIMATE (P S & E)

1. Incorporating all **City** review comments from the preliminary design submittal, the **Engineer** will complete the final plans, prepare contract documents/specifications, and a final opinion of probable cost for the authorized construction units. This shall include summaries of bid items and quantities, but the **Engineer** does not guarantee that Contractor bids will not vary from such opinion. Each of these items (2 copies each) shall be submitted to the **City** for final approval.
2. After receipt of final plan/specifications/contract documents review comments from the **City**, the **Engineer** shall make all corrections noted and then furnish twenty (20) copies of contract documents and final bid plans to the **City** for distribution to Contractors for bidding the Project. Contract documents shall contain the Notice to Bidders, Proposal, Wage Rates, General and Special Provisions, Special Specifications, Insurance Statement, Payment, Performance, and Maintenance Bonds, and all other required **City** Contract forms.

3. The original drawings of all plans shall be plotted in ink on approved plastic film sheets, or as otherwise approved by the **City Engineer**, and shall become the property of the **City**. **City** may use such drawings in any manner it desires provided, however, that the **Engineer** shall not be liable for the use of such drawings for any project other than the project described herein.
4. The **Engineer** shall determine the right-of-way and easement needs necessary for the construction of the project and furnish same to **City**. The **Engineer** shall provide the necessary land survey, Deed and Abstract Records search, right-of-way exhibit and description of the single property parcel to be acquired for this project.

D. CONSTRUCTION ADMINISTRATION.

1. The **Engineer** will assist the **City** in the advertisement for bids--prepare Notice to Bidders for required newspaper advertising --and place notice with Texas Contractor magazine and Dodge Report.
2. The **Engineer** will attend a pre-bid meeting if deemed necessary by the **City**.
3. The **Engineer** shall assist in the tabulation and review of all bids received for the construction of the improvements, and shall make recommendations to the **City** concerning these bids. At any time during the construction of this project, the **Engineer** shall advise on special review shop drawings required of the Contractor by the Construction Contract(s). Such review shall be for general conformance with the design concept and general compliance with the plans and specifications under the Construction Contract(s).
4. After selection of Contractor(s) and award of contract(s) by the **City**, the **Engineer** will assist in the preparation of contract documents, including contract, performance, payment, and maintenance bonds and all other related **City** forms required to initiate construction on the project(s).
5. **Engineer** will arrange a pre-construction conference with **City** staff, Contractor(s), and all affected utility companies.
6. **Engineer** will provide periodic field representation and will monitor construction progress as often as **Engineer** deems necessary. However, once every two (2) weeks the **Engineer** shall attend a scheduled meeting with the project inspector and the Contractor(s) to discuss the construction progress. A written report shall be provided to the **City** after each of these bi-weekly meetings.
7. **Engineer** will consult and advise the **City** regarding the need for any contract change orders and will prepare change orders as required for **City** approval.

8. **Engineer** will be available for interpretation of plans and specifications as may be required by the Contractor(s) in the field.
 9. The **Engineer** will, with assistance from the **City Inspector** on the project(s), prepare and process monthly and final pay requests from the Contractor(s) to the **City**.
 10. **Engineer** will provide, in conjunction with the **City**, a final inspection of the project and provide a “punch list” of deficient items to the Contractor(s).
 11. **Engineer** will revise construction drawings as necessary to adequately reflect any revisions in the construction from that which was represented on the plans and/or specifications.
- Engineer** will provide the **City** with one (1) set of mylar reproducible “Record Drawings” within 30 days after the completion of the project including updated digital files of the new construction for use in the **City’s** computerized mapping system.

BIRKHOFF, HENDRICKS & CARTER, L.L.P.

2013 FEE SCHEDULE

	Hourly Rate
Partner-in-Charge	\$ 240.00
Project Manager	\$ 195.00
Design Engineer	\$ 148.00
Engineer-in-Training	\$ 119.00
AutoCAD III	\$ 132.00
AutoCAD II	\$ 118.00
AutoCAD I	\$ 98.00
Word Processor II	\$ 109.00
Word Processor I	\$ 75.00
Registered Professional Land Surveyor (RPLS)	\$ 215.00
Survey Crew	\$ 160.00
Expenses: Invoice Times 1.15	
Mileage: I.R.S. Limit	

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS AUTHORIZING THE REQUEST FOR QUALIFICATIONS (RFQ) 2012-38 FOR PROFESSIONAL ENGINEERING SERVICES FOR VARIOUS PROJECTS TO CONSULTING ENGINEERS, TEAGUE NALL & PERKINS (TNP), TO SERVE AND SUPPORT ENGINEERING NEEDS FOR UPCOMING ENGINEERING PROJECTS WITHIN THE CITY; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID AGREEMENT; PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, in accordance with the provisions of the Texas Local Government Code, Chapter 271 and Government Code 2267, The City of Lancaster placed a request for qualification (RFq) to contract with qualified teams of professionals with considerable experience in the delivery of engineering services, to the City of Lancaster; and

WHEREAS, the City Council of Lancaster desires to contract with consulting Engineers, Teague Nall & Perkins (TNP), for the above referenced services; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS;

SECTION 1. That the City Council hereby approving a contract for engineering services with, Teague Nall & Perkins (TNP), and that the City Manager is hereby authorized to execute the Agreements, which is attached hereto and incorporated herein.

SECTION 2. That any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 3. That should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 4. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF
LANCASTER, TEXAS, this 10th day of December, 2012.**

APPROVED:

MARCUS E. KNIGHT, MAYOR

ATTEST:

DOLLE K. DOWNE, CITY SECRETARY

APPROVED AS TO FORM:

ROBERT E. HAGER, CITY ATTORNEY
(REH/mpm)

ENGINEERS MASTER SERVICES CONTRACT

599

AGREEMENT

NOW, THEREFORE, the **City** and the **Engineer**, in consideration of the mutual covenants and agreements herein contained, do mutually agree as follows:

The **City** agrees to retain the **Engineer**, and the **Engineer** agrees to provide Services in connection with the Projects, as defined herein, and for having rendered such Services the **City** agrees to pay to the **Engineer** fee for these Services as provided herein based on the Fee Schedule attached hereto and defined by a work or task order. All Services under this Contract shall be performed under the direct supervision of the **City Engineer**.

1. General Services.

- A. General Services Parts I & II: The work tasks and activities to be performed and deliverable to be provided by the **Engineer** shall be in accordance with Attachment A, General of Services, including modifications to the Basic Services as mutually agreed by said work or task orders to by the **City** and the **Engineer** in accordance with the provisions of this Contract.
- B. Additional Services Not Included in General Services: When mutually agreed to in writing by the **City** and the **Engineer** by the issuance of a written work order or invoice, the Additional Services shall be provided by the **Engineer**. These Additional Services are not included as a part of Basic Services and shall be paid for by the **City** in addition to payment for General Services. Should it be determined that one or more of the requirements of this Contract conflict with the requirements of the work or task order, including modifications to the work or task orders or any attachments to this contract; the requirement of the Contract shall govern.

- 2. **Progress Schedule.** Within ten (10) days after receiving work or task order and/or Notice to Proceed (NTP) the **Engineer** shall submit to the **City** a Schedule of Services consisting of a listing of the major Project tasks, the estimated consultant hours required to perform the tasks, the percentage of the Contract budget estimated to be allocated to each task and a bar chart schedule showing task beginning and completion dates. Significant milestones for the Project shall be identified. At a minimum, milestones shall be provided for the three design submittals described in Attachment A, work or task order: Conceptual Design Submittal, Preliminary Design Submittal, and Final Plans, Specifications, and Estimate (PS&E) Submittal, if any, as required for the specific task. The **Engineer** shall provide to the **City** information to report and monitor the task and applicable Project Schedule by completing a "Design Progress Report" on a form provided by the **City**. The **Engineer** shall complete and provide to the **City** said report at two week intervals.

3. Compensation.

- A. Basic Services Part I Fee: The **Engineer** shall be paid a fee for Basic Services Part I under this Contract pursuant to the Fee Schedule described in Attachment A, General Services and specific work or task order for a task. However, that modifications to the General Services Part I, or other conditions defined herein may necessitate a change of Fee which shall be reduced to writing and approved by the City or its designee.
 - B. General Services Part II Fee: The **Engineer** should be paid a fee under this Contract for General Services Part II pursuant to the Fee Schedule described in Attachment A, General Services as provided in the work order. General Services Part II Fee shall not exceed the lump sum as provided in said work order(s) provided, however, that modifications to the General Services Part II, or other conditions defined herein may necessitate a change of Basic Fee which shall be reduced to writing and approved by the City or its designee.
 - C. Total Maximum Fee: Total Maximum Fee for a task shall be provided in said work order(s).
 - D. Invoices: The **Engineer** shall submit invoices at not less than thirty (30) calendar days for General Services Part I and/or Basic Services Part II on or before the twenty fifth (25th) calendar day of the month, or the preceding business day if the twenty fifth occurs on a weekend and/or observed holiday. Payment shall be based on the work order(s) and invoices submitted to the **City**, provided that Services completed as indicated in the Design Progress Reports approved by the **City** equals or exceeds the increment percentage requested on the **Engineer's** invoices, as applicable. **Engineer's** invoices to **City** shall provide complete information and documentation to substantiate **Engineer's** charges and shall be in a form to be specified by the **City Engineer**. Should additional documentation be requested by the **City Engineer** the **Engineer** shall comply promptly with such request.
 - E. Payments: All payments to **Engineer** shall be made on the basis of the invoices submitted by the **Engineer** and approved by the **City**. Following approval of invoices, **City** shall endeavor to pay **Engineer** promptly, however, under no circumstances shall **Engineer** be entitled to receive interest on amounts due. The **City**, in compliance with Texas State law, shall process a maximum of one payment to the **Engineer** per month. **City** reserves the right to correct any error that may be discovered in any invoice whether paid to the **Engineer** or not, and to withhold the funds requested by the **Engineer** relative to the error.
4. **Fee Increases.** Any other provision in this Contract notwithstanding, it is specifically understood and agreed that the **Engineer** shall not be authorized to undertake any Services pursuant to this Contract requiring the payment of any fee, expense or reimbursement in addition to the fees stipulated in Article 3 of this Contract, without having first obtained

specific written authorization from the **City**. The written authorization for additional Services shall be in the form of a Modification to work orders approved by the City Engineer and/or the City Council, if required.

5. **Modifications to the Work or Task Order.** Either the **Engineer** or the **City Engineer** may initiate a written request for a Modification to the work or task order when in the opinion of the requesting Party, the needs and conditions of the Project warrant a modification. Upon the receipt of a request by either Party, the **Engineer** and the **City Engineer** shall review the conditions associated with the request and determine the necessity of a modification. When the Parties agree that a modification is warranted, the **Engineer** and the **City Engineer** shall negotiate the specific modification(s) and any changes in the Total Maximum Fee or Project Schedule resulting from the modification(s). Approval of a modification shall be in the form of a written Modification to the General Services which clearly defines the changes to the previously approved General Services, Fee and/or Project Schedule, as provided in a work order. Said written Modification shall be approved by **Engineer**, authorized by the City Council, if required, and issued by the **City Engineer**. Issuance of the approved General Services modification shall constitute a notice to proceed with the Project in accordance with the modified General Services. The **City Engineer** may issue written Modifications to the General Services without prior approval of the City Council when the modifications are to be accomplished within the authorized Total Maximum Fee and do not materially or substantively alter the overall scope of the Project, the Project Schedule or the Services provided by the **Engineer**.
6. **Project Deliverables.** For each submittal identified in a work order, General Services, the **Engineer** shall provide the **City** with one set of reproducibles, one set of blueprints or hard copy and electronic media of the submittal documents. For any required environmental assessment, the **Engineer** shall provide one set of draft and one set of final Environmental Reports. The Environmental Reports, of any, shall be submitted as duplicate original and on electronic media. The electronic file may omit photographs and government prepared maps. If photographs are included in the report they shall be taken with a 35 mm camera or larger format camera. Color laser copies may be substituted for the original photographs in the final report.

A transmittal letter shall be included with the Environmental Reports, if any, and shall include an executive summary outlining: a.) Findings of the Reports; b.) Conclusions; c.) Recommendations; and d.) Mitigation/remediation cost estimates.
7. **Project Control.** It is understood and agreed that all Services shall be performed under the administrative direction of the **City Engineer**. No Services shall be performed under this Contract until a written Notice to Proceed is issued to the **Engineer** by the **City Engineer**. In addition, the **Engineer** shall not proceed with any Services after the completion and delivery to the **City** of the Submittal as described in the General Services without written instruction from the **City**. The **Engineer** shall not be compensated for any Services performed after the said submittals and before receipt of **City's** written instruction to proceed.

8. **Partnering.** The **City** shall encourage participation in a partnering process that involves the **City, Engineer** and his or her sub-consultants, and other supporting jurisdictions and/or agencies. By engaging in partnering, the parties do not intend to create a legal partnership, to create additional contractual relationships, or to in any way alter the legal relationship which otherwise exists between the **City** and the **Engineer**. The partnering effort shall be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives of partnering are effective and efficient contract performance and completion of the Project within budget, on schedule, in accordance with the General Services, and without litigation. Participation in partnering shall be totally voluntary and all participants shall have equal status.
9. **Disputes.** The **City Engineer** shall act as referee in all disputes under the terms of this Contract between the Parties hereto. In the event the **City Engineer** and the **Engineer** are unable to reach acceptable resolution of disputes concerning the General Services to be performed under this Contract, the **City** and the **Engineer** shall negotiate in good faith toward resolving such disputes. The **City Engineer** may present unresolved disputes arising under the terms of this Contract to the City Manager or designee. The decision of the City Manager or designee shall be final and binding. An irreconcilable or unresolved dispute shall be considered a violation or breach of contract terms by the **Engineer** and shall be grounds for termination. Any increased cost incurred by the City arising from such termination shall be paid by the **Engineer**.
10. **Engineer's Seal.** The **Engineer** shall place his Texas Professional Engineers seal on all engineering documents and engineering data prepared under the supervision of the **Engineer** in the performance of this Contract.
11. **Liability.** Approval of the Plans, Specifications, and Estimate (PS&E) by the **City** shall not constitute nor be deemed a release of the responsibility and liability of **Engineer**, its employees, subcontractors, agents and consultants for the accuracy and competency of their designs, working drawings, tracings, magnetic media and/or computer disks, estimates, specifications, investigations, studies or other documents and work; nor shall such approval be deemed to be an assumption of such responsibility by the **City** for any defect, error or omission in the design, working drawings, tracings, magnetic media and/or computer disks, estimates specifications, investigations, studies or other documents prepared by **Engineer**, its employees, subcontractors, agents and consultants. **Engineer** shall indemnify **City** for damages resulting from such defects, errors or omissions and shall secure, pay for and maintain in force during the term of this Contract sufficient errors and omissions insurance in the amount of \$1,000,000.00 single limit, with certificates evidencing such coverage to be provided to the **City**. The redesign of any defective work shall be the sole responsibility and expense of the **Engineer**. Any work constructed, found to be in error because of the **Engineer's** design, shall be removed, replaced, corrected or otherwise resolved at the sole responsibility and expense of the **Engineer**. The parties further agree that this liability

provision shall meet the requirements of the express negligence rule adopted by the Texas Supreme Court and hereby specifically agree that this provision is conspicuous.

12. **Indemnification.** **Engineer** shall indemnify, hold harmless and defend the City of Lancaster, its officers, agents and employees from any loss, damage, liability or expense, including attorney fees, on account of damage to property and injuries, including death, to all persons, including employees of **Engineer** or any associate consultant, which may arise from any errors, omissions or negligent act on the part of **Engineer**, its employees, agents, consultants or subcontractors, in performance of this Contract, or any breach of any obligation under this Contract. It is further understood that it is not the intention of the parties hereto to create liability for the benefit of third parties, but that this agreement shall be solely for the benefit of the parties hereto and shall not create or grant any rights, contractual or otherwise to any person or entity. The parties further agree that this indemnification provision shall meet the requirements of the express negligence rule adopted by the Texas Supreme Court and hereby specifically agree that this provision is conspicuous.
13. **Delays and Failure to Perform.** **Engineer** understands and agrees that time is of the essence and that any failure of the **Engineer** to complete the Services of this Contract within the agreed Project Schedule shall constitute material breach of this Contract. The **Engineer** shall be fully responsible for its delays or for failures to use diligent effort in accordance with the terms of this Contract. Where damage is caused to the **City** due to the **Engineer's** failure to perform in these circumstances, the **City** may withhold, to the extent of such damage, **Engineer's** payments hereunder without waiver of any of **City's** additional legal rights or remedies. The **Engineer** shall not be responsible for delays associated with review periods by the **City** in excess of the agreed Project Schedule.
14. **Termination of Contract.** It is agreed that the **City** or the **Engineer** may cancel or terminate this Contract for convenience upon fifteen (15) days written notice to the other. Immediately upon receipt of notice of such cancellation from either party to the other, all Services being performed under this Contract shall immediately cease. Pending final determination at the end of such fifteen-day period, the **Engineer** shall be compensated on the basis of the percentage of Services provided prior to the receipt of notice of such termination and indicated in the final Design Progress Report submitted by the **Engineer** and approved by the **City**.
15. **Personnel Qualifications.** **Engineer** warrants to the **City** that all Services provided by **Engineer** in the performance of this Contract shall be provided by personnel who are appropriately licensed or certified as required by law, and who are competent and qualified in their respective trades or professions.
16. **Quality Control.** The **Engineer** agrees to maintain written quality control procedures. The **Engineer** further agrees to follow those procedures to the extent that, in the **Engineer's** judgment, the procedures are appropriate under the circumstances.

17. **Ownership.** All **Engineer's** designs and work product under this Contract, including but not limited to tracings, drawings, electronic or magnetic media and/or computer disks, estimates, specifications, investigations, studies and other documents, completed or partially completed, shall be the property of the **City** to be used as **City** desires, without restriction; and **Engineer** specifically waives and releases any proprietary rights or ownership claims therein and is relieved of liability connected with any future use by **City**. Copies may be retained by **Engineer**. **Engineer** shall be liable to **City** for any loss or damage to such documents while they are in the possession of or while being worked upon by the **Engineer** or anyone connected with the **Engineer**, including agents, employees, consultants or subcontractors. All documents so lost or damaged while they are in the possession of or while being worked upon by the **Engineer** shall be replaced or restored by **Engineer** without cost to the **City**.
18. **Project Records and Right to Audit.** The **Engineer** shall keep, retain and safeguard all records relating to this Contract or work performed hereunder for a minimum period of three (3) years following the Project completion, with full access allowed to authorized representatives of the **City** upon request for purposes of evaluating compliance with provisions of this Contract. Should the **City Engineer** determine it necessary, **Engineer** shall make all its records and books related to this Contract available to **City** for inspection and auditing purposes.
19. **Non-Discrimination.** As a condition of this Contract, the **Engineer** shall take all necessary action to ensure that, in connection with any work under this Contract it shall not discriminate in the treatment or employment of any individual or groups of individuals on the grounds of race, color, religion, national origin, age, sex or physical impairment unrelated to experience, qualifications or job performance, either directly, indirectly or through contractual or other arrangements.
20. **Gratuities.** City of Lancaster policy mandates that employees shall never, under any circumstances, seek or accept, directly or indirectly from any individual doing or seeking to do business with the City of Lancaster, loans, services, payments, entertainment, trips, money in any amount, or gifts of any kind.
21. **No Waiver.** No action or failure to act on the part of either Party at any time to exercise any rights or remedies pursuant to this Contract shall be a waiver on the part of that Party of any of its rights or remedies at law or contract.
22. **Compliance with Laws.** The **Engineer** shall comply with all Federal, State and local laws, statutes, City Ordinances, rules and regulations, and the orders and decrees of any courts, or administrative bodies or tribunal in any matter affecting the performance of this Contract, including without limitation, worker's compensation laws, minimum and maximum salary and wage statutes and regulations, and licensing laws and regulations. When required, **Engineer** shall furnish the **City** with satisfactory proof of compliance therewith.

23. **Severability.** In case one or more of the provisions contained in this Contract shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions hereof and this Contract shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
24. **Venue.** With respect to any and all litigation or claims, the laws of the State of Texas shall apply and venue shall reside in Dallas County.
25. **Prior Negotiations.** This Contract supersedes any and all prior understandings and agreement by and between the Parties with respect to the terms of this Contract and the negotiations preceding execution of this Contract.
26. **Contacts.** The **Engineer** shall direct all inquiries from any third party regarding information relating to this Contract to the City Engineer.
27. **Term.** The term of this agreement and attachments hereto is for three (3) years.

27. **Notification.** All notices to either Party by the other required under this Contract shall be delivered personally or sent by certified U.S. mail, postage prepaid, addressed to such Party at the following respective addresses:

City: City of Lancaster, Texas

Engineer: _____

IN WITNESS WHEREOF, the City of Lancaster, Texas and the **Engineer** has caused these presents to be executed by duly authorized representatives on the day and year set forth above.

THE CITY OF LANCASTER

BY:

Date: _____

ATTEST:

BY:

Date: _____

ATTEST:

(CORPORATE SEAL)

ATTACHMENT "A" GENERAL SERVICES

(To be modified for Project Specific Services)

The **Engineer** agrees to render services necessary for the development and completion the Project as outlined herein. The Basic Services to be performed by **Engineer** under this Contract include the following:

A. SCHEMATIC DESIGN

1. When requested by the **City**, the **Engineer** shall attend preliminary conferences with authorized representatives of the **City** regarding the project and such other conferences as may be necessary in the opinion of the **City** so that the plans and specifications which are to be developed hereunder by the **Engineer**, will result in providing facilities which are economical in design and conform to instruction from the **City**.
2. The **Engineer** shall attend such conferences with officials of other agencies including other engineering and/or surveying firms under contract with the **City**, as may be necessary in the opinion of the **City** for coordination of the proposed paving and related improvements with the requirements of such other agencies. It shall be the **Engineer's** duty hereunder to secure necessary information from such agencies.
3. The **Engineer** shall advise the **City** with regard to the necessity for subcontract work such as special surveys, tests, test borings, or other subsurface investigations in connection with design and engineering work to be performed hereunder. The **Engineer** shall also advise the **City** concerning the results of same. Such surveys, tests, and investigations shall made only upon authorization by and at the expense of the **City**.
4. During the schematic design phase the **Engineer** shall coordinate with all utilities as to any proposed utility lines or the need for adjustment to the existing utility lines within the project limits. The information obtained shall be shown on the schematic plans and addressed in the schematic design report. The **Engineer** shall show on the schematic, preliminary, and final plans the location of the proposed utility lines, existing utility lines, and any adjustments and/or relocation of the existing lines based of information provided by the respective utility company.
5. The **Engineer** shall provide necessary design field surveys for his use in the preparation of plans and specifications. The **Engineer** shall also provide sufficient property surveys to prepare the necessary right-of-way document and related exhibit for acquisition of right-of-way with use of **Engineer's** documents.
6. The **Engineer** shall supply construction plans to all utility companies, including but not limited to franchised utilities and pipeline companies which have existing and proposed facilities within the limits of the Project. The above mentioned construction plans shall consist of the following: one set of schematic plans, one set of dated preliminary plans, and, one set of dated and approved advertising (final) plans.

7. The **Engineer** shall furnish for **City** review two (2) copies each of the schematic engineering plans at a scale of 1"=20' and a written report on the project in sufficient detail to indicate clearly the problems involved and the alternate solutions available to the **City**, to include layouts, preliminary right-of-way needs, opinion of probable cost for each alternate proposed, and the **Engineer's** recommendation(s).

B. PRELIMINARY DESIGN

1. The **Engineer** shall meet with the **City** to discuss any schematic design plans and report, and the **Engineer** will then proceed with preparation of the preliminary design of the project incorporating all comments received from the **City** and agreed upon by both the **City** and the **Engineer** into these plans.
2. The **Engineer** shall provide detailed design data, profiles, cross-sections where appropriate, opinions of probable cost, and furnish two (2) copies of detailed preliminary design plans for the project to the **City** for review. The **Engineer** shall indicate on the plans the location of existing and proposed utilities and storm drains. Storm drainage calculations shall also be provided on the drainage layout sheet in the plans.
3. After receipt of preliminary design review comments from the **City**, the **Engineer** shall make all corrections noted and then commence preparation of the final design plans and specification/contract documents.

C. FINAL PLANS, SPECIFICATIONS, AND ESTIMATE (P S & E)

1. Incorporating all **City** review comments from the preliminary design submittal, the **Engineer** will complete the final plans, prepare contract documents/specifications, and a final opinion of probable cost for the authorized construction units. This shall include summaries of bid items and quantities, but the **Engineer** does not guarantee that Contractor bids will not vary from such opinion. Each of these items (2 copies each) shall be submitted to the **City** for final approval.
2. After receipt of final plan/specifications/contract documents review comments from the **City**, the **Engineer** shall make all corrections noted and then furnish twenty (20) copies of contract documents and final bid plans to the **City** for distribution to Contractors for bidding the Project. Contract documents shall contain the Notice to Bidders, Proposal, Wage Rates, General and Special Provisions, Special Specifications, Insurance Statement, Payment, Performance, and Maintenance Bonds, and all other required **City** Contract forms.

3. The original drawings of all plans shall be plotted in ink on approved plastic film sheets, or as otherwise approved by the **City Engineer**, and shall become the property of the **City**. **City** may use such drawings in any manner it desires provided, however, that the **Engineer** shall not be liable for the use of such drawings for any project other than the project described herein.
4. The **Engineer** shall determine the right-of-way and easement needs necessary for the construction of the project and furnish same to **City**. The **Engineer** shall provide the necessary land survey, Deed and Abstract Records search, right-of-way exhibit and description of the single property parcel to be acquired for this project.

D. CONSTRUCTION ADMINISTRATION.

1. The **Engineer** will assist the **City** in the advertisement for bids--prepare Notice to Bidders for required newspaper advertising --and place notice with Texas Contractor magazine and Dodge Report.
2. The **Engineer** will attend a pre-bid meeting if deemed necessary by the **City**.
3. The **Engineer** shall assist in the tabulation and review of all bids received for the construction of the improvements, and shall make recommendations to the **City** concerning these bids. At any time during the construction of this project, the **Engineer** shall advise on special review shop drawings required of the Contractor by the Construction Contract(s). Such review shall be for general conformance with the design concept and general compliance with the plans and specifications under the Construction Contract(s).
4. After selection of Contractor(s) and award of contract(s) by the **City**, the **Engineer** will assist in the preparation of contract documents, including contract, performance, payment, and maintenance bonds and all other related **City** forms required to initiate construction on the project(s).
5. **Engineer** will arrange a pre-construction conference with **City** staff, Contractor(s), and all affected utility companies.
6. **Engineer** will provide periodic field representation and will monitor construction progress as often as **Engineer** deems necessary. However, once every two (2) weeks the **Engineer** shall attend a scheduled meeting with the project inspector and the Contractor(s) to discuss the construction progress. A written report shall be provided to the **City** after each of these bi-weekly meetings.
7. **Engineer** will consult and advise the **City** regarding the need for any contract change orders and will prepare change orders as required for **City** approval.

8. **Engineer** will be available for interpretation of plans and specifications as may be required by the Contractor(s) in the field.
 9. The **Engineer** will, with assistance from the **City Inspector** on the project(s), prepare and process monthly and final pay requests from the Contractor(s) to the **City**.
 10. **Engineer** will provide, in conjunction with the **City**, a final inspection of the project and provide a “punch list” of deficient items to the Contractor(s).
 11. **Engineer** will revise construction drawings as necessary to adequately reflect any revisions in the construction from that which was represented on the plans and/or specifications.
- Engineer** will provide the **City** with one (1) set of mylar reproducible “Record Drawings” within 30 days after the completion of the project including updated digital files of the new construction for use in the **City’s** computerized mapping system.

TEAGUE NALL AND PERKINS, INC.

Standard Rate Schedule for Reimbursable/Multiplier Contracts

Effective January 1, 2012 to December 31, 2012*

Engineering / Technical	From	-	To	
Principal	\$170	-	\$230	Per Hour
Project Manager	\$120	-	\$200	Per Hour
Senior Engineer	\$110	-	\$220	Per Hour
Engineer	\$ 85	-	\$140	Per Hour
Landscape Architect / Planner	\$110	-	\$175	Per Hour
Landscape Designer	\$ 70	-	\$110	Per Hour
Designer	\$ 85	-	\$120	Per Hour
Senior Designer	\$100	-	\$160	Per Hour
CAD Technician	\$ 60	-	\$ 95	Per Hour
Senior CAD Technician	\$ 75	-	\$110	Per Hour
IT Consultant	\$120	-	\$150	Per Hour
IT Technician	\$ 85	-	\$120	Per Hour
Clerical	\$ 50	-	\$ 80	Per Hour
Resident Project Representative	\$ 70	-	\$120	Per Hour

Surveying

Survey Manager	\$130	-	\$180	Per Hour
Registered Professional Land Surveyor	\$120	-	\$150	Per Hour
S.I.T. / Senior Survey Technician	\$85	-	\$110	Per Hour
Survey Technician	\$70	-	\$100	Per Hour
1-Person Field Crew w/Equipment**	\$120			Per Hour
2-Person Field Crew w/Equipment**	\$145			Per Hour
3-Person Field Crew w/Equipment**	\$165			Per Hour
4-Person Field Crew w/Equipment**	\$190			Per Hour
Flagger	\$40			Per Hour
Abstractor (Property Deed Research)	\$85			Per Hour

Subsurface Utility Engineering

Hourly Rate

SUE Engineer	\$160	
Sr. Utility Location Specialist	\$ 95	
Utility Location Technician	\$ 75	
1-Person Designator Crew w/Equipment	\$115	
2-Person Designator Crew w/Equipment	\$135	
2-Person Vacuum Excavator Crew w/Equipment	\$250	(Travel and Stand-by)
SUE QL-A Test Hole ($0 \leq 4$ ft)***	\$900	per hole
SUE QL-A Test Hole ($>4 \leq 6$ ft)***	\$1,100	per hole
SUE QL-A Test Hole ($>6 \leq 8$ ft)***	\$1,310	per hole
SUE QL-A Test Hole ($>8 \leq 10$ ft)***	\$1,530	per hole
SUE QL-A Test Hole ($>10 \leq 12$ ft)***	\$1,770	per hole
SUE QL-A Test Hole ($>12 \leq 14$ ft)***	\$2,000	per hole

Direct Cost Reimbursables

Photocopies, Scans & PDF Files:	\$0.10/page	letter and legal size bond paper, B&W
	\$0.20/page	11" x 17" size bond paper, B&W
	\$1.00/page	letter, legal and 11" x 17" size bond paper, color
	\$2.00/page	22" x 34" and larger bond paper or vellum, B&W
	\$4.00/page	22" x 34" and larger bond paper or vellum, color
Plots:	\$1.00/page	11" x 17" size bond paper, B&W
	\$2.00/page	11" x 17" size bond paper, color
	\$4.00/page	22" x 34" and larger bond paper or vellum, B&W
	\$6.00/page	22" x 34" and larger bond paper or vellum, color
	\$6.00/page	22" x 34" and larger mylar or acetate, B&W
Mileage	\$0.55/mile	

All Subcontracted and outsourced services shall be billed at rates comparable to TNP's billing rates shown above.

* Rates shown are for calendar year 2012 and are subject to change in subsequent years.

** Equipment includes Truck, ATV, Robotic Total Station, GPS Units and Digital Level.

*** Pricing includes 2-Person crew, designating for excavation, vehicle costs, and field supplies.

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS AUTHORIZING THE REQUEST FOR QUALIFICATIONS (RFQ) 2012-38 FOR PROFESSIONAL ENGINEERING SERVICES FOR VARIOUS PROJECTS TO CONSULTING ENGINEERS, BURY & PARTNERS, TO SERVE AND SUPPORT ENGINEERING NEEDS FOR UPCOMING ENGINEERING PROJECTS WITHIN THE CITY; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID AGREEMENT; PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, in accordance with the provisions of the Texas Local Government Code, Chapter 271 and Government Code 2267, The City of Lancaster placed a request for qualification (RFq) to contract with qualified teams of professionals with considerable experience in the delivery of engineering services, to the City of Lancaster; and

WHEREAS, the City Council of Lancaster desires to contract with consulting Engineers, Bury & Partners, for the above referenced services; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS;

SECTION 1. That the City Council hereby approving a contract for engineering services with Bury & Partners, and the City Manager is hereby authorized to execute the Agreements, which is attached hereto and incorporated herein.

SECTION 2. That any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 3. That should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 4. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

**PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF
LANCASTER, TEXAS, this 10th day of December, 2012.**

APPROVED:

MARCUS E. KNIGHT, MAYOR

ATTEST:

DOLLE K. DOWNE, CITY SECRETARY

APPROVED AS TO FORM:

ROBERT E. HAGER, CITY ATTORNEY
(REH/mpm)

ENGINEERS MASTER SERVICES CONTRACT

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AGREEMENT

NOW, THEREFORE, the **City** and the **Engineer**, in consideration of the mutual covenants and agreements herein contained, do mutually agree as follows:

The **City** agrees to retain the **Engineer**, and the **Engineer** agrees to provide Services in connection with the Projects, as defined herein, and for having rendered such Services the **City** agrees to pay to the **Engineer** fee for these Services as provided herein based on the Fee Schedule attached hereto and defined by a work or task order. All Services under this Contract shall be performed under the direct supervision of the **City Engineer**.

1. General Services.

- A. General Services Parts I & II: The work tasks and activities to be performed and deliverable to be provided by the **Engineer** shall be in accordance with Attachment A, General of Services, including modifications to the Basic Services as mutually agreed by said work or task orders to by the **City** and the **Engineer** in accordance with the provisions of this Contract.
- B. Additional Services Not Included in General Services: When mutually agreed to in writing by the **City** and the **Engineer** by the issuance of a written work order or invoice, the Additional Services shall be provided by the **Engineer**. These Additional Services are not included as a part of Basic Services and shall be paid for by the **City** in addition to payment for General Services. Should it be determined that one or more of the requirements of this Contract conflict with the requirements of the work or task order, including modifications to the work or task orders or any attachments to this contract; the requirement of the Contract shall govern.

- 2. **Progress Schedule.** Within ten (10) days after receiving work or task order and/or Notice to Proceed (NTP) the **Engineer** shall submit to the **City** a Schedule of Services consisting of a listing of the major Project tasks, the estimated consultant hours required to perform the tasks, the percentage of the Contract budget estimated to be allocated to each task and a bar chart schedule showing task beginning and completion dates. Significant milestones for the Project shall be identified. At a minimum, milestones shall be provided for the three design submittals described in Attachment A, work or task order: Conceptual Design Submittal, Preliminary Design Submittal, and Final Plans, Specifications, and Estimate (PS&E) Submittal, if any, as required for the specific task. The **Engineer** shall provide to the **City** information to report and monitor the task and applicable Project Schedule by completing a "Design Progress Report" on a form provided by the **City**. The **Engineer** shall complete and provide to the **City** said report at two week intervals.

3. Compensation.

- A. Basic Services Part I Fee: The **Engineer** shall be paid a fee for Basic Services Part I under this Contract pursuant to the Fee Schedule described in Attachment A, General Services and specific work or task order for a task. However, that modifications to the General Services Part I, or other conditions defined herein may necessitate a change of Fee which shall be reduced to writing and approved by the City or its designee.
 - B. General Services Part II Fee: The **Engineer** should be paid a fee under this Contract for General Services Part II pursuant to the Fee Schedule described in Attachment A, General Services as provided in the work order. General Services Part II Fee shall not exceed the lump sum as provided in said work order(s) provided, however, that modifications to the General Services Part II, or other conditions defined herein may necessitate a change of Basic Fee which shall be reduced to writing and approved by the City or its designee.
 - C. Total Maximum Fee: Total Maximum Fee for a task shall be provided in said work order(s).
 - D. Invoices: The **Engineer** shall submit invoices at not less than thirty (30) calendar days for General Services Part I and/or Basic Services Part II on or before the twenty fifth (25th) calendar day of the month, or the preceding business day if the twenty fifth occurs on a weekend and/or observed holiday. Payment shall be based on the work order(s) and invoices submitted to the **City**, provided that Services completed as indicated in the Design Progress Reports approved by the **City** equals or exceeds the increment percentage requested on the **Engineer's** invoices, as applicable. **Engineer's** invoices to **City** shall provide complete information and documentation to substantiate **Engineer's** charges and shall be in a form to be specified by the **City Engineer**. Should additional documentation be requested by the **City Engineer** the **Engineer** shall comply promptly with such request.
 - E. Payments: All payments to **Engineer** shall be made on the basis of the invoices submitted by the **Engineer** and approved by the **City**. Following approval of invoices, **City** shall endeavor to pay **Engineer** promptly, however, under no circumstances shall **Engineer** be entitled to receive interest on amounts due. The **City**, in compliance with Texas State law, shall process a maximum of one payment to the **Engineer** per month. **City** reserves the right to correct any error that may be discovered in any invoice whether paid to the **Engineer** or not, and to withhold the funds requested by the **Engineer** relative to the error.
4. **Fee Increases.** Any other provision in this Contract notwithstanding, it is specifically understood and agreed that the **Engineer** shall not be authorized to undertake any Services pursuant to this Contract requiring the payment of any fee, expense or reimbursement in addition to the fees stipulated in Article 3 of this Contract, without having first obtained

specific written authorization from the **City**. The written authorization for additional Services shall be in the form of a Modification to work orders approved by the City Engineer and/or the City Council, if required.

5. **Modifications to the Work or Task Order.** Either the **Engineer** or the **City Engineer** may initiate a written request for a Modification to the work or task order when in the opinion of the requesting Party, the needs and conditions of the Project warrant a modification. Upon the receipt of a request by either Party, the **Engineer** and the **City Engineer** shall review the conditions associated with the request and determine the necessity of a modification. When the Parties agree that a modification is warranted, the **Engineer** and the **City Engineer** shall negotiate the specific modification(s) and any changes in the Total Maximum Fee or Project Schedule resulting from the modification(s). Approval of a modification shall be in the form of a written Modification to the General Services which clearly defines the changes to the previously approved General Services, Fee and/or Project Schedule, as provided in a work order. Said written Modification shall be approved by **Engineer**, authorized by the City Council, if required, and issued by the **City Engineer**. Issuance of the approved General Services modification shall constitute a notice to proceed with the Project in accordance with the modified General Services. The **City Engineer** may issue written Modifications to the General Services without prior approval of the City Council when the modifications are to be accomplished within the authorized Total Maximum Fee and do not materially or substantively alter the overall scope of the Project, the Project Schedule or the Services provided by the **Engineer**.
6. **Project Deliverables.** For each submittal identified in a work order, General Services, the **Engineer** shall provide the **City** with one set of reproducibles, one set of blueines or hard copy and electronic media of the submittal documents. For any required environmental assessment, the **Engineer** shall provide one set of draft and one set of final Environmental Reports. The Environmental Reports, of any, shall be submitted as duplicate original and on electronic media. The electronic file may omit photographs and government prepared maps. If photographs are included in the report they shall be taken with a 35 mm camera or larger format camera. Color laser copies may be substituted for the original photographs in the final report.

A transmittal letter shall be included with the Environmental Reports, if any, and shall include an executive summary outlining: a.) Findings of the Reports; b.) Conclusions; c.) Recommendations; and d.) Mitigation/remediation cost estimates.
7. **Project Control.** It is understood and agreed that all Services shall be performed under the administrative direction of the **City Engineer**. No Services shall be performed under this Contract until a written Notice to Proceed is issued to the **Engineer** by the **City Engineer**. In addition, the **Engineer** shall not proceed with any Services after the completion and delivery to the **City** of the Submittal as described in the General Services without written instruction from the **City**. The **Engineer** shall not be compensated for any Services performed after the said submittals and before receipt of **City's** written instruction to proceed.

8. **Partnering.** The **City** shall encourage participation in a partnering process that involves the **City, Engineer** and his or her sub-consultants, and other supporting jurisdictions and/or agencies. By engaging in partnering, the parties do not intend to create a legal partnership, to create additional contractual relationships, or to in any way alter the legal relationship which otherwise exists between the **City** and the **Engineer**. The partnering effort shall be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives of partnering are effective and efficient contract performance and completion of the Project within budget, on schedule, in accordance with the General Services, and without litigation. Participation in partnering shall be totally voluntary and all participants shall have equal status.
9. **Disputes.** The **City Engineer** shall act as referee in all disputes under the terms of this Contract between the Parties hereto. In the event the **City Engineer** and the **Engineer** are unable to reach acceptable resolution of disputes concerning the General Services to be performed under this Contract, the **City** and the **Engineer** shall negotiate in good faith toward resolving such disputes. The **City Engineer** may present unresolved disputes arising under the terms of this Contract to the City Manager or designee. The decision of the City Manager or designee shall be final and binding. An irreconcilable or unresolved dispute shall be considered a violation or breach of contract terms by the **Engineer** and shall be grounds for termination. Any increased cost incurred by the City arising from such termination shall be paid by the **Engineer**.
10. **Engineer's Seal.** The **Engineer** shall place his Texas Professional Engineers seal on all engineering documents and engineering data prepared under the supervision of the **Engineer** in the performance of this Contract.
11. **Liability.** Approval of the Plans, Specifications, and Estimate (PS&E) by the **City** shall not constitute nor be deemed a release of the responsibility and liability of **Engineer**, its employees, subcontractors, agents and consultants for the accuracy and competency of their designs, working drawings, tracings, magnetic media and/or computer disks, estimates, specifications, investigations, studies or other documents and work; nor shall such approval be deemed to be an assumption of such responsibility by the **City** for any defect, error or omission in the design, working drawings, tracings, magnetic media and/or computer disks, estimates specifications, investigations, studies or other documents prepared by **Engineer**, its employees, subcontractors, agents and consultants. **Engineer** shall indemnify **City** for damages resulting from such defects, errors or omissions and shall secure, pay for and maintain in force during the term of this Contract sufficient errors and omissions insurance in the amount of \$1,000,000.00 single limit, with certificates evidencing such coverage to be provided to the **City**. The redesign of any defective work shall be the sole responsibility and expense of the **Engineer**. Any work constructed, found to be in error because of the **Engineer's** design, shall be removed, replaced, corrected or otherwise resolved at the sole responsibility and expense of the **Engineer**. The parties further agree that this liability

provision shall meet the requirements of the express negligence rule adopted by the Texas Supreme Court and hereby specifically agree that this provision is conspicuous.

12. **Indemnification.** **Engineer** shall indemnify, hold harmless and defend the City of Lancaster, its officers, agents and employees from any loss, damage, liability or expense, including attorney fees, on account of damage to property and injuries, including death, to all persons, including employees of **Engineer** or any associate consultant, which may arise from any errors, omissions or negligent act on the part of **Engineer**, its employees, agents, consultants or subcontractors, in performance of this Contract, or any breach of any obligation under this Contract. It is further understood that it is not the intention of the parties hereto to create liability for the benefit of third parties, but that this agreement shall be solely for the benefit of the parties hereto and shall not create or grant any rights, contractual or otherwise to any person or entity. The parties further agree that this indemnification provision shall meet the requirements of the express negligence rule adopted by the Texas Supreme Court and hereby specifically agree that this provision is conspicuous.
13. **Delays and Failure to Perform.** **Engineer** understands and agrees that time is of the essence and that any failure of the **Engineer** to complete the Services of this Contract within the agreed Project Schedule shall constitute material breach of this Contract. The **Engineer** shall be fully responsible for its delays or for failures to use diligent effort in accordance with the terms of this Contract. Where damage is caused to the **City** due to the **Engineer's** failure to perform in these circumstances, the **City** may withhold, to the extent of such damage, **Engineer's** payments hereunder without waiver of any of **City's** additional legal rights or remedies. The **Engineer** shall not be responsible for delays associated with review periods by the **City** in excess of the agreed Project Schedule.
14. **Termination of Contract.** It is agreed that the **City** or the **Engineer** may cancel or terminate this Contract for convenience upon fifteen (15) days written notice to the other. Immediately upon receipt of notice of such cancellation from either party to the other, all Services being performed under this Contract shall immediately cease. Pending final determination at the end of such fifteen-day period, the **Engineer** shall be compensated on the basis of the percentage of Services provided prior to the receipt of notice of such termination and indicated in the final Design Progress Report submitted by the **Engineer** and approved by the **City**.
15. **Personnel Qualifications.** **Engineer** warrants to the **City** that all Services provided by **Engineer** in the performance of this Contract shall be provided by personnel who are appropriately licensed or certified as required by law, and who are competent and qualified in their respective trades or professions.
16. **Quality Control.** The **Engineer** agrees to maintain written quality control procedures. The **Engineer** further agrees to follow those procedures to the extent that, in the **Engineer's** judgment, the procedures are appropriate under the circumstances.

17. **Ownership.** All **Engineer's** designs and work product under this Contract, including but not limited to tracings, drawings, electronic or magnetic media and/or computer disks, estimates, specifications, investigations, studies and other documents, completed or partially completed, shall be the property of the **City** to be used as **City** desires, without restriction; and **Engineer** specifically waives and releases any proprietary rights or ownership claims therein and is relieved of liability connected with any future use by **City**. Copies may be retained by **Engineer**. **Engineer** shall be liable to **City** for any loss or damage to such documents while they are in the possession of or while being worked upon by the **Engineer** or anyone connected with the **Engineer**, including agents, employees, consultants or subcontractors. All documents so lost or damaged while they are in the possession of or while being worked upon by the **Engineer** shall be replaced or restored by **Engineer** without cost to the **City**.
18. **Project Records and Right to Audit.** The **Engineer** shall keep, retain and safeguard all records relating to this Contract or work performed hereunder for a minimum period of three (3) years following the Project completion, with full access allowed to authorized representatives of the **City** upon request for purposes of evaluating compliance with provisions of this Contract. Should the **City Engineer** determine it necessary, **Engineer** shall make all its records and books related to this Contract available to **City** for inspection and auditing purposes.
19. **Non-Discrimination.** As a condition of this Contract, the **Engineer** shall take all necessary action to ensure that, in connection with any work under this Contract it shall not discriminate in the treatment or employment of any individual or groups of individuals on the grounds of race, color, religion, national origin, age, sex or physical impairment unrelated to experience, qualifications or job performance, either directly, indirectly or through contractual or other arrangements.
20. **Gratuities.** City of Lancaster policy mandates that employees shall never, under any circumstances, seek or accept, directly or indirectly from any individual doing or seeking to do business with the City of Lancaster, loans, services, payments, entertainment, trips, money in any amount, or gifts of any kind.
21. **No Waiver.** No action or failure to act on the part of either Party at any time to exercise any rights or remedies pursuant to this Contract shall be a waiver on the part of that Party of any of its rights or remedies at law or contract.
22. **Compliance with Laws.** The **Engineer** shall comply with all Federal, State and local laws, statutes, City Ordinances, rules and regulations, and the orders and decrees of any courts, or administrative bodies or tribunal in any matter affecting the performance of this Contract, including without limitation, worker's compensation laws, minimum and maximum salary and wage statutes and regulations, and licensing laws and regulations. When required, **Engineer** shall furnish the **City** with satisfactory proof of compliance therewith.

23. **Severability.** In case one or more of the provisions contained in this Contract shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions hereof and this Contract shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
24. **Venue.** With respect to any and all litigation or claims, the laws of the State of Texas shall apply and venue shall reside in Dallas County.
25. **Prior Negotiations.** This Contract supersedes any and all prior understandings and agreement by and between the Parties with respect to the terms of this Contract and the negotiations preceding execution of this Contract.
26. **Contacts.** The **Engineer** shall direct all inquiries from any third party regarding information relating to this Contract to the City Engineer.
27. **Term.** The term of this agreement and attachments hereto is for three (3) years.

27. **Notification.** All notices to either Party by the other required under this Contract shall be delivered personally or sent by certified U.S. mail, postage prepaid, addressed to such Party at the following respective addresses:

City: City of Lancaster, Texas

Engineer: _____

IN WITNESS WHEREOF, the City of Lancaster, Texas and the **Engineer** has caused these presents to be executed by duly authorized representatives on the day and year set forth above.

THE CITY OF LANCASTER

BY:

Date: _____

ATTEST:

BY:

Date: _____

ATTEST:

(CORPORATE SEAL)

ATTACHMENT "A" GENERAL SERVICES

(To be modified for Project Specific Services)

The **Engineer** agrees to render services necessary for the development and completion the Project as outlined herein. The Basic Services to be performed by **Engineer** under this Contract include the following:

A. SCHEMATIC DESIGN

1. When requested by the **City**, the **Engineer** shall attend preliminary conferences with authorized representatives of the **City** regarding the project and such other conferences as may be necessary in the opinion of the **City** so that the plans and specifications which are to be developed hereunder by the **Engineer**, will result in providing facilities which are economical in design and conform to instruction from the **City**.
2. The **Engineer** shall attend such conferences with officials of other agencies including other engineering and/or surveying firms under contract with the **City**, as may be necessary in the opinion of the **City** for coordination of the proposed paving and related improvements with the requirements of such other agencies. It shall be the **Engineer's** duty hereunder to secure necessary information from such agencies.
3. The **Engineer** shall advise the **City** with regard to the necessity for subcontract work such as special surveys, tests, test borings, or other subsurface investigations in connection with design and engineering work to be performed hereunder. The **Engineer** shall also advise the **City** concerning the results of same. Such surveys, tests, and investigations shall made only upon authorization by and at the expense of the **City**.
4. During the schematic design phase the **Engineer** shall coordinate with all utilities as to any proposed utility lines or the need for adjustment to the existing utility lines within the project limits. The information obtained shall be shown on the schematic plans and addressed in the schematic design report. The **Engineer** shall show on the schematic, preliminary, and final plans the location of the proposed utility lines, existing utility lines, and any adjustments and/or relocation of the existing lines based of information provided by the respective utility company.
5. The **Engineer** shall provide necessary design field surveys for his use in the preparation of plans and specifications. The **Engineer** shall also provide sufficient property surveys to prepare the necessary right-of-way document and related exhibit for acquisition of right-of-way with use of **Engineer's** documents.
6. The **Engineer** shall supply construction plans to all utility companies, including but not limited to franchised utilities and pipeline companies which have existing and proposed facilities within the limits of the Project. The above mentioned construction plans shall consist of the following: one set of schematic plans, one set of dated preliminary plans, and, one set of dated and approved advertising (final) plans.

7. The **Engineer** shall furnish for **City** review two (2) copies each of the schematic engineering plans at a scale of 1"=20' and a written report on the project in sufficient detail to indicate clearly the problems involved and the alternate solutions available to the **City**, to include layouts, preliminary right-of-way needs, opinion of probable cost for each alternate proposed, and the **Engineer's** recommendation(s).

B. PRELIMINARY DESIGN

1. The **Engineer** shall meet with the **City** to discuss any schematic design plans and report, and the **Engineer** will then proceed with preparation of the preliminary design of the project incorporating all comments received from the **City** and agreed upon by both the **City** and the **Engineer** into these plans.
2. The **Engineer** shall provide detailed design data, profiles, cross-sections where appropriate, opinions of probable cost, and furnish two (2) copies of detailed preliminary design plans for the project to the **City** for review. The **Engineer** shall indicate on the plans the location of existing and proposed utilities and storm drains. Storm drainage calculations shall also be provided on the drainage layout sheet in the plans.
3. After receipt of preliminary design review comments from the **City**, the **Engineer** shall make all corrections noted and then commence preparation of the final design plans and specification/contract documents.

C. FINAL PLANS, SPECIFICATIONS, AND ESTIMATE (P S & E)

1. Incorporating all **City** review comments from the preliminary design submittal, the **Engineer** will complete the final plans, prepare contract documents/specifications, and a final opinion of probable cost for the authorized construction units. This shall include summaries of bid items and quantities, but the **Engineer** does not guarantee that Contractor bids will not vary from such opinion. Each of these items (2 copies each) shall be submitted to the **City** for final approval.
2. After receipt of final plan/specifications/contract documents review comments from the **City**, the **Engineer** shall make all corrections noted and then furnish twenty (20) copies of contract documents and final bid plans to the **City** for distribution to Contractors for bidding the Project. Contract documents shall contain the Notice to Bidders, Proposal, Wage Rates, General and Special Provisions, Special Specifications, Insurance Statement, Payment, Performance, and Maintenance Bonds, and all other required **City** Contract forms.

3. The original drawings of all plans shall be plotted in ink on approved plastic film sheets, or as otherwise approved by the **City Engineer**, and shall become the property of the **City**. **City** may use such drawings in any manner it desires provided, however, that the **Engineer** shall not be liable for the use of such drawings for any project other than the project described herein.
4. The **Engineer** shall determine the right-of-way and easement needs necessary for the construction of the project and furnish same to **City**. The **Engineer** shall provide the necessary land survey, Deed and Abstract Records search, right-of-way exhibit and description of the single property parcel to be acquired for this project.

D. CONSTRUCTION ADMINISTRATION.

1. The **Engineer** will assist the **City** in the advertisement for bids--prepare Notice to Bidders for required newspaper advertising --and place notice with Texas Contractor magazine and Dodge Report.
2. The **Engineer** will attend a pre-bid meeting if deemed necessary by the **City**.
3. The **Engineer** shall assist in the tabulation and review of all bids received for the construction of the improvements, and shall make recommendations to the **City** concerning these bids. At any time during the construction of this project, the **Engineer** shall advise on special review shop drawings required of the Contractor by the Construction Contract(s). Such review shall be for general conformance with the design concept and general compliance with the plans and specifications under the Construction Contract(s).
4. After selection of Contractor(s) and award of contract(s) by the **City**, the **Engineer** will assist in the preparation of contract documents, including contract, performance, payment, and maintenance bonds and all other related **City** forms required to initiate construction on the project(s).
5. **Engineer** will arrange a pre-construction conference with **City** staff, Contractor(s), and all affected utility companies.
6. **Engineer** will provide periodic field representation and will monitor construction progress as often as **Engineer** deems necessary. However, once every two (2) weeks the **Engineer** shall attend a scheduled meeting with the project inspector and the Contractor(s) to discuss the construction progress. A written report shall be provided to the **City** after each of these bi-weekly meetings.
7. **Engineer** will consult and advise the **City** regarding the need for any contract change orders and will prepare change orders as required for **City** approval.

8. **Engineer** will be available for interpretation of plans and specifications as may be required by the Contractor(s) in the field.
 9. The **Engineer** will, with assistance from the **City Inspector** on the project(s), prepare and process monthly and final pay requests from the Contractor(s) to the **City**.
 10. **Engineer** will provide, in conjunction with the **City**, a final inspection of the project and provide a “punch list” of deficient items to the Contractor(s).
 11. **Engineer** will revise construction drawings as necessary to adequately reflect any revisions in the construction from that which was represented on the plans and/or specifications.
- Engineer** will provide the **City** with one (1) set of mylar reproducible “Record Drawings” within 30 days after the completion of the project including updated digital files of the new construction for use in the **City’s** computerized mapping system.

**BURY+PARTNERS AND SUBSIDIARIES
STANDARD RATE SCHEDULE**

THE FOLLOWING RATES ARE FOR WORK PERFORMED ON AN HOURLY CHARGE BASIS. RATES INCLUDE COMPANY OVERHEAD AND PROFIT FOR SERVICES ACCOMPLISHED DURING REGULAR WORKING HOURS.

DIRECT LABOR

OFFICE PERSONNEL SERVICES

Managing Principal	\$ 245.00 per hour
Principal	\$ 225.00 per hour
Senior Vice President	\$ 210.00 per hour
Vice President	\$ 200.00 per hour
Senior Project Manager	\$ 190.00 per hour
Project Manager	\$ 175.00 per hour
Senior Consultant	\$ 160.00 per hour
Consultant	\$ 140.00 per hour
Associate Consultant	\$ 130.00 per hour
Senior Technical Designer	\$ 110.00 per hour
Technical Designer	\$ 100.00 per hour
Managing Surveyor	\$ 160.00 per hour
Senior Survey Tech	\$ 120.00 per hour
Survey Tech	\$ 105.00 per hour
Administration	\$ 80.00 per hour
Construction Observation	\$ 120.00 per hour
Expert Witness	\$ 450.00 per hour

FIELD PARTY SERVICES

2-Man Field Party	\$ 160.00 per hour
3-Man Field Party	\$ 185.00 per hour
4-Man Field Party	\$ 215.00 per hour

DIRECT EXPENSES

Transportation:

By Firm's Passenger Vehicles	\$ Per IRS Rates
By Firm's Survey Trucks	\$ 0.75 per mile

Subsistence for Out-of-City Work (Survey Field Crew)	Prevailing IRS approved rates for survey locale
Survey Stakes, Lathes, Iron Rods and other Direct Expenses	Our cost plus 10%
In-House Courier & Delivery Services	< 15 Miles at ¼ hr Billing
In-House Courier & Delivery Services	> 15 Miles at ½ hr Billing
In-House Reproduction & Printing by Firm	Prevailing commercial rates
Outside Reproductions, Couriers and other Direct Expenses	Our cost plus 10%

NOTES:

1. Field Party rates include a charge for normal equipment, normal supplies and survey vehicles. Abnormal use of stakes, lathes, etc. used (such as during the construction phase of a project) will be charged as indicated. A mileage charge will be billed for projects exceeding a 50 mile radius of the base office.
2. A minimum of two (2) hours Field Party time charge will be made for show up time and return to office, resulting from inclement weather conditions, etc.
3. Field Party stand-by time will be charged for at the appropriate rates shown above.

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 8

Consider a resolution authorizing the award of RFQ 2012-41 for Geotechnical Engineering and Materials Testing Services for various projects to Alliance Geotechnical Group.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Sound Infrastructure

Background

In accordance with the provisions of Texas Local Government Code, Chapter 271 and Government Code 2267, the City of Lancaster placed a request for qualified firms for geotechnical engineering and materials testing services related to the future construction of City streets, TXDOT pass-thru funded highway projects, Airport projects, and Water/Wastewater projects. The contract is an initial one year agreement with four one-year renewal periods.

Currently the City of Lancaster does not have a geotechnical engineering and materials testing firm, to assist City Staff with oversight on capital improvement projects. City Staff proposes to award the contract(s) for professional services to Alliance Geotechnical Group.

The RFQ outlined minimum submission requirements and a general scope of services. All firms that submitted qualifications were invited for a personal interview to present their firm capabilities to a panel of City Staff. The panel recommends Alliance Geotechnical Group.

Considerations

- **Operational** - The firm will be used on an as needed basis and will be managed by the Engineering Division in conjunction with any other division/department depending on the project.
- **Legal** - This RFQ was processed in accordance with all local and state purchasing statutes. Eight RFQs were received and the recommended vendor is a certified MBE and HUB. The resolution was reviewed and approved by the City Attorney.
- **Financial** – There are no financial obligations to the City at this time.
- **Public Information** – RFQs were advertised on July 25 and August 1, 2012 on the City's e-procurement system. A deadline for question submission was issued for August 9,

2012 and the RFQ opened on August 17, 2012. RFQs were opened on November 14, 2012. There are no other public information requirements.

Options/Alternatives

1. City Council may approve the resolution as presented.
2. City Council may reject the resolution.

Recommendation

Staff recommends approval of the resolution as presented.

Attachments

- Resolution
 - Contract
 - Tab Sheet
-

Submitted by:

Rona Stringfellow-Govan, Managing Director of Public Works and Development Services

RESOLUTION NO. 2012-12-XX

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, AUTHORIZING THE CONTRACT FOR GEOTECHNICAL ENGINEERING AND MATERIALS TESTING SERVICES FOR VARIOUS PROJECTS TO ALLIANCE GEOTECHNICAL GROUP, TO SUPPORT MATERIALS TESTING FOR FUTURE CAPITAL IMPROVEMENT PROJECTS WITHIN THE CITY; AUTHORIZING THE CITY MANAGER TO EXECUTE SAID AGREEMENT; PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, In accordance with the provisions of Texas Local Government Code, Chapter 271 and Government Code 2267, the City of Lancaster placed a request for qualifications (RFQ) to contract with qualified teams of professionals with considerable experience in the delivery of geotechnical engineering and materials testing services, to the City of Lancaster; and

WHEREAS, the City Council of Lancaster desires to contract with Alliance Geotechnical Group for the above referenced services; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That the City Council hereby approves and awards the RFQ 2012-41 for geotechnical engineering and materials testing services.

SECTION 2. That the City Manager is hereby authorized to execute the Agreement, which is attached hereto and incorporated herein.

SECTION 3. That any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 4. That should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 5. This Resolution shall become effective immediately from and after its passage, as the law and charter in such cases provide.

DULY PASSED and approved by the City Council of the City of Lancaster, Texas, on this the 10th day of December 2012.

ATTEST:

Dolle K. Downe, City Secretary

APPROVED:

Marcus E. Knight, Mayor

APPROVED AS TO FORM:

Robert E. Hager, City Attorney

City of Lancaster, Texas

Standard Professional Services Agreement

This Agreement is made by and between the City of Lancaster, Texas, a home-rule municipality (hereinafter referred to as the "Owner") and Alliance Geotechnical Group, Inc., (hereinafter referred to as the "Provider") for Geotechnical and Materials Testing On-Call Services (Bid 2012-41), (hereinafter referred to as the "Project"), the Owner and the Provider hereby agree as follows:

ARTICLE I: CONTRACT & CONTRACT DOCUMENTS

1.1 THE CONTRACT

The Contract between the Owner and the Provider, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it.

1.2. THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, the Invitation to Bid, Requirements and Instructions to Bidders, the Specifications, terms and conditions, Attachments, all Change Orders issued hereafter, any other amendments hereto executed by the parties hereafter, together with the following (if any): None

Documents not enumerated in this Paragraph 1.2.1 are not Contract Documents and do not form part of this Contract.

ARTICLE 2: RECITALS

2.1 The City desires to have the Provider complete geotechnical and materials testing services on an as needed basis; and

2.2 The Provider has the knowledge, ability and expertise to provide such services; and

2.3 The City desires to engage the services of Provider, as an independent Contractor and not as an employee, to provide services as set forth herein and in Exhibit A: Specifications which is attached hereto and incorporated herein.

ARTICLE 3: TERM / TERMINATION

3.1 TERM

The term of this Agreement shall begin on the date of its execution by all Parties. This Agreement shall continue for a period of one-year and may be renewed upon mutual agreement for up to four, one-year periods.

3.2 TERMINATION

This Agreement may be suspended or terminated by either Party with or without cause at any time by giving written notice to the other party. In the event suspension or termination is without cause, payment to the Provider, in accordance with the terms of this Agreement, will be made on the basis of services reasonably determined by City to be satisfactorily performed to date of suspension or termination. Such payment will be due upon delivery of all instruments of service to City.

In the event that City requires a modification of the Agreement with Provider, and in the event the parties fail to agree upon a modification of this Agreement, the Parties shall have the option of terminating this Agreement. Payment to Provider shall be made by the City in accordance with the terms of this Agreement, for the services mutually agreed upon by the Parties to be properly performed by the Provider prior to such termination date.

ARTICLE 4: SCOPE OF SERVICES

4.1 SCOPE

Services, when authorized in writing by a Notice to Proceed from the City, shall be performed by Provider in accordance with the City's requirements and as set forth in the attached Exhibit A, Specifications.

If there is a conflict between the above quoted subjects and Exhibit A, the language in the Exhibits shall control the scope of services.

4.2 AUTHORIZED AGENT

All work performed by the Provider will be performed under this Agreement, signed by a duly authorized agent of the City as approved by resolution of the City Council of the City of Lancaster, Texas and the designated authorized agent for the Provider.

ARTICLE 5: COMPENSATION / PAYMENT TERMS AND CONDITIONS

5.1 Compensation for the performance of Professional Services described herein shall be paid to the Provider by the City in an amount not to exceed the unit prices submitted which shall accrue and be payable as provided in Sections 5.01 and 5.02 hereof.

5.2 Work will be performed at the rates set forth in Exhibit B, Fee Schedule, which is attached hereto and incorporated herein by reference, or as otherwise provided in negotiated fee schedules approved within this Agreement, if any.

5.3 Provider payment for work under this Agreement shall be made in installments billed not more frequently than once each month upon receipt of invoices from the Provider. If the City fails to make any payment due the Provider within thirty (30) days after receipt of Provider's invoice, the amounts due the Provider will be increased at the rate of 1.5% per month from said thirtieth day, unless there is a good faith refusal by the City to pay. Payment shall be remitted to Provider by City as instructed on invoices.

ARTICLE 6: TIME FOR COMPLETION

6.1 The Provider's services and compensation under this Agreement have been agreed to in anticipation of orderly and continuous progress of the Assigned Project(s) through completion of the project(s).

6.2 If the City fails to give prompt written authorization to proceed with any phase of services after completion of the immediately preceding phase, the Provider shall be entitled to equitable adjustment of rates and amounts of compensations to reflect reasonable costs incurred by Provider as a result of the delay or changes in the various elements that comprise such rates of compensation, but in no event shall such compensation exceed the scope of services schedule of maximum payment unless a written amendment to this Agreement is consummated between the parties.

ARTICLE 7: INDEMNIFICATION

7.1 THE PROVIDER AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS THE CITY, ITS OFFICERS, AGENTS, SERVANTS AND EMPLOYEES (HEREINAFTER COLLECTIVELY REFERRED TO AS "INDEMNITIES") FROM AND AGAINST SUITS, ACTIONS, CLAIMS, LOSSES, ANY DAMAGE, LIABILITY, AND FROM AND AGAINST ANY COSTS AND EXPENSES, INCLUDING, IN PART, ATTORNEY FEES INCIDENTAL TO THE DEFENSE OF SUCH SUITS, ACTIONS CLAIMS, LOSSES, DAMAGES OR LIABILITY ON ACCOUNT OF INJURY, DISEASE, SICKNESS, INCLUDING DEATH, TO ANY PERSON OR DAMAGE TO PROPERTY INCLUDING, IN PART, THE LOSS OF USE RESULTING THEREFROM, ARISING FROM ANY NEGLIGENT ACT, ERROR OR OMISSION OF THE PROVIDER, ITS OFFICERS, EMPLOYEES, SERVANTS, AGENTS OR SUBCONTRACTORS, OR ANYONE ELSE UNDER THE PROVIDER'S DIRECTION AND CONTROL, AND ARISING OUT OF, RESULTING FROM, OR CAUSED BY THE PERFORMANCE OR FAILURE OF PERFORMANCE OF ANY WORK OR SERVICES UNDER THIS AGREEMENT.

FROM CONDITIONS CREATED BY THE PERFORMANCE OR NON-PERFORMANCE OF SAID WORK OR SERVICES. IN THE EVENT ONE OR MORE OF THE INDEMNITIES IS DETERMINED BY A COURT OF LAW TO BE JOINTLY OR DERIVATIVELY NEGLIGENT OR LIABLE FOR SUCH DAMAGE OR INJURY, THE PROVIDER SHALL BE OBLIGATED TO INDEMNIFY INDEMNITIES AS PROVIDED HEREIN ON A PROPORTIONATE BASIS IN ACCORDANCE WITH THE FINAL JUDGMENT, AFTER ALL APPEALS ARE EXHAUSTED, DETERMINING SUCH JOINT OR DERIVATIVE NEGLIGENCE OR LIABILITY.

7.2 THE CITY AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD THE PROVIDER, ITS OFFICERS, AGENTS, SERVANTS AND EMPLOYEES (HEREINAFTER COLLECTIVELY REFERRED TO AS "INDEMNITIES") FROM AND AGAINST SUITS, ACTIONS, CLAIMS, LOSSES, ANY DAMAGE, LIABILITY, AND FROM AND AGAINST ANY COSTS AND EXPENSES, INCLUDING, IN PART, ATTORNEY FEES INCIDENTAL TO THE DEFENSE OF SUCH SUITS, ACTIONS CLAIMS, LOSSES, DAMAGES OR LIABILITY ON ACCOUNT OF INJURY, DISEASE, SICKNESS, INCLUDING DEATH, TO ANY PERSON OR DAMAGE TO PROPERTY INCLUDING, IN PART, THE LOSS OF USE RESULTING THEREFROM, ARISING FROM ANY NEGLIGENT ACT, ERROR OR OMISSION OF THE CITY, ITS OFFICERS, EMPLOYEES, SERVANTS, AGENTS OR SUBCONTRACTORS, OR ANYONE ELSE UNDER THE CITY'S DIRECTION AND CONTROL, AND ARISING OUT OF, RESULTING FROM, OR CAUSED BY THE PERFORMANCE OR FAILURE OF PERFORMANCE OF ANY WORK OR SERVICES UNDER THIS AGREEMENT, OR FROM CONDITIONS CREATED BY THE PERFORMANCE OR NON-PERFORMANCE OF SAID WORK OR SERVICES. IN THE EVENT ONE OR MORE OF THE INDEMNITIES IS DETERMINED BY A COURT OF LAW TO BE JOINTLY OR DERIVATIVELY NEGLIGENT OR LIABLE FOR SUCH DAMAGE OR INJURY, THE CITY SHALL BE OBLIGATED TO INDEMNIFY INDEMNITIES AS PROVIDED HEREIN ON A PROPORTIONATE BASIS IN ACCORDANCE WITH THE FINAL JUDGMENT, AFTER ALL APPEALS ARE EXHAUSTED, DETERMINING SUCH JOINT OR DERIVATIVE NEGLIGENCE OR LIABILITY.

7.3 THE PROVIDER IS NOT OBLIGATED TO INDEMNIFY THE CITY IN ANY MANNER WHATSOEVER FOR THE CITY'S OWN NEGLIGENCE.

7.4 NOTHING CONTAINED HEREIN SHALL CONSTITUTE A WAIVER OF GOVERNMENTAL IMMUNITY IN FAVOR OF ANY THIRD PARTY.

7.5 PROVIDER AGREES THAT IT IS AN INDEPENDENT CONTRACTOR AND NOT AN AGENT OF THE CITY, AND THAT PROVIDER IS SUBJECT, AS AN EMPLOYER, TO ALL APPLICABLE UNEMPLOYMENT COMPENSATION STATUTES, SO FAR AS TO RELIEVE THE CITY OF ANY RESPONSIBILITY OR LIABILITY FROM TREATING PROVIDER'S EMPLOYEES AS EMPLOYEES OF CITY FOR THE PURPOSE OF KEEPING RECORDS, MAKING REPORTS OR PAYMENTS OF UNEMPLOYMENT COMPENSATION TAXES OR CONTRIBUTIONS. PROVIDER FURTHER AGREES TO INDEMNIFY AND HOLD CITY HARMLESS AND REIMBURSE IT FOR ANY EXPENSES OR LIABILITY INCURRED UNDER SAID STATUTES IN CONNECTION WITH EMPLOYEES OF PROVIDER.

7.6 PROVIDER SHALL DEFEND AND INDEMNIFY INDEMNITIES AGAINST AND HOLD CITY AND THE PREMISES HARMLESS FROM ANY AND ALL CLAIMS, SUITS OR LIENS BASED UPON OR ALLEGED TO BE BASED UPON THE NON-PAYMENT OF LABOR, TOOLS, MATERIALS, EQUIPMENT, SUPPLIES, TRANSPORTATION AND MANAGEMENT COSTS INCURRED BY PROVIDER IN PERFORMING THIS AGREEMENT.

ARTICLE 8: INSURANCE

8.1 Workers Compensation Insurance

The Provider shall provide and maintain Workers' Compensation with statutory limits.

8.2 Automotive Insurance

Provider shall provide and maintain in full force and effect during the time of this Agreement, auto insurance (including, but not limited to, insurance covering the operation of owned and non-owned automobiles, trucks and other vehicles) protecting Provider and City as an additional insured with limits not less than 250/500/100,000 or as amended by statute.

8.3 General Liability Insurance

Provider shall provide general liability insurance. Such insurance covering personal and bodily injuries or death shall be in the sum of not less than two hundred fifty thousand dollars (\$250,000.00) per occurrence and five hundred thousand dollars (\$500,000.00) aggregate. Insurance covering damages to property shall be in the sum of not less than one hundred thousand dollars (\$100,000.00). The general liability insurance must name the City as an additional insured.

8.4 Professional Liability Errors and Omissions Insurance

Provider shall also provide and maintain Professional Liability Errors and Omissions Insurance coverage to protect Provider and City from any liability arising out of the performance of professional services, if any, under this Agreement. Such coverage shall be in the sum of not less than three hundred thousand dollars (\$300,000.00) per occurrence and five hundred thousand dollars (\$500,000.00) aggregate.

8.5 Certificate of Insurance

A signed Certificate of Insurance, satisfactory to City, showing compliance with the requirements of this Article shall be furnished to City before any services are performed. Such Certificate shall provide thirty (30) days written notice to City prior to the cancellation or modification of any insurance referred to therein.

The project name and bid/contract number shall be listed on the certificate.

ARTICLE 9: DEFAULT

In the event Provider fails to comply or becomes disabled and unable to comply with the provisions of this Agreement as to the quality or character of the service or time of performance, and the failure is not corrected within thirty (30) days after written notice by City to Provider, City may, at its sole discretion without prejudice to any other right or remedy.

- (a) Terminate this Agreement and be relieved of the payment of any further consideration to Provider except for all work determined by City to be satisfactorily completed prior to termination. Payment for work satisfactorily completed shall be for actual costs, including reasonable salaries and travel expenses of Provider to and from meetings called by City at which Provider is required to attend, but shall not include and loss of profit of Provider. In the event such termination, City may proceed to complete the services in any manner deemed proper by the City, either by the use of its own forces or by resubmitting to others. Provider agrees that any costs incurred to complete the services herein provided for may be deducted and paid by the owner out of such monies as may be due or that may thereafter become due to Provider under and by virtue of this Agreement.
- (b) City may, without terminating this Agreement or taking over the services, furnish the necessary materials, equipment, supplies and/or help necessary to remedy the situation, at the expense of Provider.

ARTICLE 10: MISCELLANEOUS

10.1 Reuse of Documents:

All documents including Maps, Plans and Specifications provided or furnished by the Provider pursuant to this Agreement are instruments of service; and Provider shall retain ownership and property interest therein whether or not the work is completed. The City may make and retain copies of any plans or specifications provided under this Agreement for the use by City and others; such documents are not intended or suitable for reuse by City or others on extension of the Project or on any other Project. Any such reuse without written approval or adaptation by the Provider for the specific purpose intended will be at the City's sole risk and without liability to the Provider.

10.2 Entire Agreement.

This Agreement constitutes the sole and only Agreement of the parties and supersedes any prior understandings or written or oral agreements between the parties with respect to this subject matter.

10.3 Assignment.

Neither this Agreement nor any duties or obligations under it shall be assignable by PROVIDOR without the prior written consent of City. In the event of an assignment by Provider to which the City has consented, the assignee or the assignee's legal representative shall agree in writing with the City to personally assume, perform, and be bound by all the covenants, obligations, and agreements contained in this Agreement.

10.4 Adjustments in Services/Amendment.

This Agreement may be amended by the mutual written agreement of the parties. Provider shall not make any claims for extra services, additional services or changes in the services without a written agreement with City prior to the performance of such services.

10.5 Governing law.

The validity of this Agreement and any of its terms or provisions, as well as the rights and duties of the parties, shall be governed by the laws of the State of Texas; and venue for any action concerning this Agreement shall be in Dallas County, Texas.

10.6 Notices.

All notices required by the Agreement shall be in writing and addressed to the following, or such other party or address as either party designates in writing, by certified mail, postage prepaid or by hand delivery:

City of Lancaster

Opal Mauldin Robertson, City Manager

PO Box 940

Lancaster, TX 75146

972-218-1300

orobertson@lancaster-tx.com

Alliance Geotechnical Group

Robert P. Nance, President

3228 Halifax Street

Dallas, TX 75247

972-448-8893

robertpnance@aggengr.com

10.7 Legal construction.

In the event any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not effect any other provisions and the Agreement shall be construed as if such invalid, illegal, or unenforceable provision had never been contained in this Agreement.

10.8 Successors and Assigns.

- (a) The City and Provider each is hereby bound and the partners, successors, executors, administrators, legal representatives and assigns of City and Provider are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators, legal representatives and assigns of such other party in respect of all covenants and obligations of this Agreement.
- (b) Neither the City nor the Provider may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, sublet

transfer is mandated by law or the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

- (c) Nothing in this Agreement shall be construed to create, impose or give rise to any duty owed by the Provider to any Provider, subcontractor, supplier, other person or entity, or to any surety for or employee of any of them, or give any rights in or benefits under this Agreement to anyone other than the City and the Provider.

10.9 Conflict.

If a conflict exists between this Agreement, and Exhibit, the Request for Proposal ("RFP"), and/or the Response, then such conflicts shall be resolved as follows:

- (a) If a conflict exists between this Agreement and an Exhibit, the RFP, or the Response, then this Agreement shall control.
- (b) If a conflict exists between the Response and an Exhibit, the Exhibit shall control.
- (c) If a conflict exists between the Response and the RFP, the RFP shall control.

10.10 Severability

Any provision or part of the Agreement held to be void or unenforceable under any law or regulation shall be deemed stricken and all remaining provisions shall continue to be valid and binding upon the City and the Provider, who agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.11 Captions

The captions used in this Agreement are for convenience only and shall not affect in any way the meaning or interpretations of the provisions set forth herein.

10.12 Counterparts

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original and constitute one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on this the ____ day of December, 2012.

CITY OF LANCASTER

ALLIANCE GEOTECHNICAL GROUP

Opal Mauldin Robertson, City Manager

ATTEST:

ATTEST:

Dolle K. Downe, City Secretary

Exhibit A: Specifications
Exhibit C: Fee Schedule

The City of Lancaster, Texas ("City") is seeking Qualifications from prospective qualified firms for geotechnical engineering and materials testing services related to the future construction of City streets, TXDOT pass-thru funded highway projects, Airport projects, and Water/Wastewater projects. It is anticipated that the resultant contract will be in effect for approximately five years.

The City is issuing this RFQ in accordance with applicable laws that allow an agreement with a private entity that displays demonstrated competence and qualifications to perform the services for the City.

An evaluation committee ("Committee") will evaluate the submitted qualifications. Based on these evaluations, the City may select the most competent and qualified applicant to negotiate a contract for geotechnical engineering and materials testing for various City projects. During the evaluation process, the Committee and the City reserve the right, where it may serve the City's best interest, to request additional information or clarifications from submitting firms or to allow corrections of errors or omissions. At the City's discretion, firms submitting qualifications may be requested to make oral presentations as part of the evaluation process.

The City reserves the right to terminate this process and to cancel or modify this solicitation process at any time. In no event will the City or any of its respective agents, representatives, consultants, directors, officers, or employees be liable for, or otherwise obligated to reimburse, the costs incurred in preparation of this RFQ, or any other related costs. The prospective firms shall be fully responsible for all costs incurred in the preparation and/or presentation of the RFQ submittals. The RFQ submittals will become the property of the City.

SCOPE OF SERVICES

The types of services to be performed by the chosen firm include the following, but may be expanded depending upon individual project needs.

- Concrete Mix Designs
- Mortar Mix Designs
- Asphalt Mix Designs
- Soil Additive (cement, fly ash, lime) Mix Designs
- Sieve Analysis
- Compressive strength testing of concrete cylinders and/or cores
- Density of in-place materials
- Sampling concrete for temperature, slump, air content and unit weight
- Moisture-Density relationships
- Gradation, specific gravity, extraction and stability of asphalt
- Wet Ball Mill test (swell tests; lime/cement treated sub-grade material gradation and depth test; soils analysis.

The firm selected for these projects should be prepared to execute its responsibilities with the understanding that the City will utilize the TXDOT Guide Schedule of Sampling and Testing for all testing related to city projects. The City of Lancaster will develop, in consultation with the chosen firm, a sampling and testing schedule for City-owned projects using various TXDOT, AASHTO and ASTM methods and schedules. Firms submitting qualifications should be prepared to furnish all equipment materials, supplies and incidentals as required to perform the engineering work as specified.

SUBMITTAL REQUIREMENTS

In order to participate, vendors must first register as a vendor with the City's E-Procurement System. Once registered, vendors can log in and submit responses electronically. To register, view current opportunities, or participate in a bid, please visit: www.lancaster-tx.com/bids.

The City of Lancaster requires comprehensive responses to every section. To facilitate the review of the responses, Firms shall follow the described proposal format. The intent of the proposal format requirements is to expedite review and evaluation. It is not the intent to constrain Firms with regard to content, but to assure that the specific requirements set forth in this RFP are addressed in a uniform manner amenable to review and evaluation.

The following items shall be submitted electronically. To complete this process, save each attachment by attachment number and attach in the e-procurement system tab titled "response attachments". Each attachment can be a maximum of 25MB in size.

Attachment 1: Executive Summary (Maximum of two pages)

- A summary letter acknowledging the firms understanding of the requirements, the person authorized to represent the consultant in negotiations and authorized to execute the contract.

Attachment 2: Project Approach

- Discussion of sampling methods, practices and procedures
- Description of Work review practices and quality assurance program
- Presentation of unique ideas or concerns related to the Project

Attachment 3: Project Organization

- Lead Firm (or firms in the case of a joint venture)
 - Corporate name(s)
 - Responsible corporate officer(s)
 - Office location(s) where the majority of the work will be accomplished
 - General description and technical capabilities of the firm(s)
- Sub-consultants (entities that will be responsible for 2% or more of billable work)
 - Corporate name(s)
 - Responsible corporate officer(s)
 - Office location(s)
 - Specialty discipline capabilities of the firm(s)
- Project organizational structure
- Key personnel, including roles and responsibilities (Professional credentials that demonstrate competencies directly related to the Project should be highlighted).

Attachment 4: Project Schedule

- Schedule for all work elements associated with the Project
- Assumptions made for scheduling, sampling methods, practices and procedures
- Proposed Schedule control methods

Attachment 5: Personnel Effort

- List of proposed Project personnel by task and function, for the work elements associated with the Project
- Proposed cost control methods

Attachment 6: Technical Resources

- Description of the analytical software and data management systems that would be used to accomplish any work assigned.

Attachment 7: Experience and References

- Description of not more than five (5) projects similar to the RFQ Scope of Work completed within the last five (5) years, including cost factors. (Non-related project experience will not be considered in the selection project).
- Name, address, email, and telephone number for each of the project references

Attachment 8: Financial Statements

- Audited financial statement(s) for lead firm (or firms in the case of a joint venture). This attachment is considered confidential and will not be released to the public.

Attachment 9: Litigation Summary

- Summary of current or past project-necessitated litigation pursued by or brought against your firm in the previous 5 years

Any additional information may be submitted in a separate document marked "Appendix."

In addition to the above, the proposing firm must complete and upload the forms attached to the RFQ.

In making its final determination, the City may schedule one-on-one interviews with the firms, if necessary.

The City reserves the right to request further documentation or information, and to discuss an RFQ submittal for any purpose in order to answer questions or to provide clarification.

The City reserves the right to reject any and all RFQ submittals and to conduct studies and other investigations, as necessary, to evaluate the RFQ submittal and complete interviews with the firms, as part of the evaluation phase.

Your RFQ submittal may not be changed, amended or modified after such time as the City declares, in writing, that a particular stage or phase of its review of the responses has been completed or closed.

EVALUATION CRITERIA

In evaluating the RFQ submittals, the City is particularly interested in firms demonstrating competent, timely, functional and cost effective methods to provide the required geotechnical engineering and materials testing services required by the City. The City expects the RFQ submittal to provide adequate information about the firm's organizational structure and all designated key personnel who will be involved in any potential project. The firm must include in their RFQ submittal specific project related detailed summaries and an overall project development plan presenting their strategy on delivering the best project with sufficient information to evaluate the "most qualified and competent" firms.

The City of Lancaster will evaluate the solicitation response in accordance with the selection criteria and will rank the firms on the basis of the submittals. A total of 100 points has been established. Qualifications will be evaluated based on the evaluation criterion as established below:

Submittal Requirements 15 Points

- Clarity and organization of response
- References
- Forms
- Attachments uploaded correctly

Team Qualifications 30 Points

- Key personnel capabilities and qualifications
- Expertise within the Project Approach
- Ability to project maintain schedules and budgets
- Obligations that pose a potential conflict of interest

Project Resources 20 Points

- Staffing size and availability
- Analytical software and data management systems
- Financial resources

Project Approach 25 Points

- Proposed Project work methods
- Familiarity with the key issues related to the Project
- Thoroughness of response

Litigation 10 Points

- Litigation with the City of Lancaster
- Other litigation
- Previous performance on City of Lancaster Projects



- GEOTECHNICAL ENGINEERING
- ENVIRONMENTAL CONSULTING
- CONSTRUCTION MATERIALS ENGINEERING AND TESTING

December 5, 2012

Ms. Dawn Berry, Purchasing Agent
City of Lancaster
P.O. Box 940
Lancaster, Texas 75146

Phn: (972) 218-1329

Re: Construction Materials Testing for the
City of Lancaster
AGG Proposal No: P12-1203C

Dear Ms. Berry:

Alliance Geotechnical Group (AGG) is pleased to confirm our firm's interest in providing construction materials inspection and testing services for the City of Lancaster projects. A schedule of unit fees for this project is attached. Actual charges will be based on the contractors/client scheduling.

After reviewing our fee schedule if you have any questions, please contact the undersigned at (972) 444-8889. If acceptable, please sign below and fax back to our office as our Authorization to Proceed. We look forward to the opportunity of working with you on this project.

Respectfully submitted,

ALLIANCE GEOTECHNICAL GROUP

Perry Kakara, S.E.T.
CME Department Manager

Aaron J. Allen, P.E.
CME Division Engineer

Robert P. Nance
President

Approved by: _____
Signature

Date: _____

CITY OF LANCASTER FEE SCHEDULE

<u>CONSTRUCTION TESTING SERVICES</u>	<u>Unit Price</u>
<u>Earthwork Services</u>	
Moisture/Density Relations (ASTM D698)	\$ 165.00 Each
Moisture/Density Relations (ASTM D1557)	185.00 Each
Moisture/Density Relations (TEX 113-E)	225.00 Each
Moisture/Density Relations (TEX 114-E)	185.00 Each
Relative Density (ASTM 4253)	225.00 Each
Triaxial Compression for Disturbed Soils and Base Materials (TEX 117-E)	1450.00 Each
Atterberg Limits	55.00 Each
Lime Series Determination (5 point method)(PI Method)	275.00 Each
Lime Series, Ph Method	150.00 each
Soluble Sulfate Test for Paving Subgrade (TxDOT Method)	105.00 Each
Lime Field Gradations (3 test min)	15.00 Each
Lime Depth (3 test min)	15.00 Each
Lime PI Verification	55.00 Each
Free Swell Testing	85.00 Each
Percent Passing a #200.00 Sieve	30.00 Each
In-Place Density Test* (ASTM D-6938) (3 test min)	15.00 Each
Aggregate Gradation	75.00 Each
<u>Cast-In-Place Concrete Services</u>	
Concrete Mix Design Review (as needed)	\$ 150.00 Each
Concrete Test Cylinders (4 Cylinders per set)	18.00 Each
Flexural Strength	40.00 Each
<u>Masonry Inspection and Testing</u>	
Non-Shrink Grout Compression Test Cylinder	\$ 18.00 Each
Mortar Test Cubes	18.00 Each
Masonry Prisms for each Masonry Type	105.00 Each
<u>Asphalt Services</u>	
Extraction and Gradation (By Ignition Oven)	\$ 175.00 Each
Laboratory Molding and Density (3 Specimens/test)	120.00 Set
Laboratory Molding & Stability (3 Specimens/test)	315.00 Set
Theoretical Maximum Specific Gravity	85.00 Each
Nuclear Gauge Usage Fee (Full Time Technician) (No Charge for Ind. Test)	75.00 Day
Core Density Test (Plus Technician Time for Coring if needed)	45.00 Each
Hamburg Wheel Track	\$600.00 Each

Coring Services

2.0" Core (vertical) per inch plus technician time in field	\$ 8.50 Inch
4.0" Core (Vertical) per inch plus technician time in field	12.50 Inch
6.0" Core (Vertical) per inch plus technician time in field	15.50 Inch
4.0" Core (Horizontal) per inch plus scaffolding cost plus technician time in field	17.50 Inch
6.0" Core (Horizontal) per inch plus scaffolding cost plus technician time in field	19.50 Inch
Compressive Strength test (Concrete Cores)	30.00 Inch

MISCELLANEOUS LABORATORY TESTS

Specific Gravity of Coarse and Fine Aggregate	\$90.00 Each
Unit Weight Determination of Aggregates	15.00 Each
Sand Equivalent Test	105.00 Each
L.A. Abrasion	205.00 Each
Sulfate Soundness of Aggregates	325.00 Each
TxDOT Wet Ball Mill of Flexible Base	195.00 Each
Lime Specimen Compression Test (3 min per set)	45.00 each

ADDITIONAL SERVICES

Concrete Penetrating Radar	\$125.00 Hour
High Speed Roadway Surface Profiling Mobilization	\$100.00 Hour
High Speed Roadway Surface Profiling	\$200.00 Hour
Concrete Batch Plant Inspection Services	\$55.00 Hour
Reinforced Concrete Inspection Services	\$55.00 Hour
Concrete Pipe for Storm Drainage Inspection Services	\$75.00 Hour
Subgrade Preparation Services	\$55.00 Hour
Asphaltic Concrete Inspection Services	\$55.00 Hour
Ductile Iron or PVC Pipe for Water or Wastewater Line Inspection Services	\$75.00 Hour

Personnel and Vehicle Services

Senior Principal	\$ 165.00 Hour
Principal	125.00 Hour
Senior Project Manager	110.00 Hour
Geotechnical Project Manager	95.00 Hour
Project Manager	75.00 Hour
Certified Technician to perform concrete field testing	47.50 Hour
Nuclear Gauge Certified Technician to perform soils density testing	47.50 Hour
Senior Engineering Technician to perform reinforcing steel, density testing, or drilled pier observations	47.50 Hour
Senior Engineering Technician to perform concrete reinforcing steel, field density testing, or drilled pier observations	47.50 Hour
Pier Observations	47.50 Hour
Structural Steel Bolted Connection Inspections (Min. 5 hours)	65.00 Hour
Visual Inspection of Structural Steel by CWI (Min. 5 hours/trip)	65.00 Hour
Non-Destructive Structural Steel Testing by CWI (min 5 hours/trip)	65.00 Hour
Vehicle Charge	40.00 Trip

NOTES:

1. Overtime rates of 1.5 times the regular hourly rate will be charged for hours worked over eight (8) hours per day Monday thru Friday or any time **before 7:00 a.m. or after 5:00 p.m.** Service performed on Saturdays and Sundays will be billed at 1.5 times the regular hourly rate. Services performed on recognized holidays will be billed at 2.0 times the regular hourly rate.
2. All laboratory test fees are F.O.B. our laboratory; additional charge for sample pickup may apply.
3. All hourly rates will be billed at a 2 hour minimum charge at the applicable rate, portal-to-portal.
4. Additional test not specified in this proposal will be quoted upon request.
5. This proposal does not include any technician stand-by, non-readiness charges, and/or trips or re-tests of the previous failing tests.
6. An additional charge may be applied for structural steel fab shop inspections outside of the DFW Metroplex. for overnight travel a per diem of \$125.00 per day will be charged.

	TOTAL POSSIBLE POINTS							
	25	75						100
Initial Evaluation Scores	Initial Review Score	Dawn	Larry	Dipak	Paul	Allen	Average	Total Points
Alliance Geotechnical Group	23.00	75.00	62.00	75.00	75.00	66.00	70.60	93.60
HVJ Associates, Inc.	23.00	75.00	61.00	72.00	75.00	66.00	69.80	92.80
Alpha Testing, Inc.	22.50	75.00	60.00	73.00	75.00	67.00	70.00	92.50
GME Consulting Services	23.00	71.00	40.00	71.00	75.00	57.00	62.80	85.80
Terracon Consultants, Inc.	19.25	68.00	43.00	73.00	75.00	54.00	62.60	81.85
Mas-Tek Engineering	18.75	70.00	44.00	72.00	75.00	47.00	61.60	80.35
TSIT	23.00	63.00	36.00	69.00	53.00	62.00	56.60	79.60
Henley-Johnston & Associates	13.50	63.00	59.00	72.00	59.00	63.00	63.20	76.70

Interview Scores	Dawn	Paul	Allen	Average
Alliance Geotechnical Group	100.00	100.00	93.00	97.67
Terracon Consultants, Inc.	98.00	96.00	90.00	94.67
TSIT	100.00	87.00	91.00	92.67
Henley-Johnston & Associates	100.00	94.00	81.00	91.67
Alpha Testing, Inc.	98.00	85.00	83.00	88.67
HVJ Associates, Inc.	88.00	70.00	89.00	82.33
GME Consulting Services	99.00	84.00	60.00	81.00
Mas-Tek Engineering	93.00	69.00	80.00	80.67

||

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 9

Conduct a public hearing and consider an ordinance amending Ordinance No. 2006-04-13, the Lancaster Development Code and Zoning Map of the City of Lancaster, as amended, by granting a change in zoning from LI, Light Industrial, to PD, Planned Development, on approximately 59.04 acres of land in the City of Lancaster, Dallas County, Texas, and more generally located on the north side of Danieldale Road approximately 1,340+ feet west of the intersection of Houston School Road and Danieldale Road.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Quality Development

Background

1. **Location and Size:** The property is generally located at 2931 Danieldale Road. The property under consideration is approximately 59.041 acres of land.
2. **Current Zoning:** The subject property is currently zoned LI, Light Industrial.
3. **Adjacent Properties:**
 - North: LCD – South I-20 Warehouse sub-district, Lancaster Campus District - South Interstate 20 Warehouse sub-district (Southpointe Corporate Center)
 - South: LI, Light Industrial (Swift Transportation Company)
 - East: LI, Light Industrial (undeveloped)
 - West: LI, Light Industrial (Conway Truckload, Inc.)
4. **Comprehensive Plan Compatibility:** The Comprehensive Plan identifies this site as suitable for Motor Freight Terminals/Medium Industrial zoning. This proposal is compatible with the Comprehensive Plan.
5. **Public Notification:** The Public Hearing notice appeared in the Focus Daily Newspaper on October 26, 2012 and property owner notifications were mailed out. Zoning signs were placed on the subject property, satisfying the noticing requirement for this request.

6. Case/Site History:

Date	Body	Action
12/9/09	N/A	Request withdrawn
6/15/10	P&Z	Recommended denial; applicant withdrew prior to City Council
10/5/10	P&Z	Applicant requested postponement until November 2, 2010
11/2/10	P&Z	Postponed to notify all property owners surrounding the subject property
12/7/10	P&Z	Recommended denial; applicant withdrew prior to City Council
6/7/11	P&Z	Recommended denial; CC approval would require supermajority
6/27/11	CC	Denied by City Council
11/6/12	P&Z	Recommended approval

Considerations

This is another request for zoning consideration as a result of mediation hearings and pending litigation.

City Staff and the applicant have mutually agreed to the attached ordinance. In summary, the applicant has defined the proposed land uses and outlined special development regulations for the subject property as a result of zoning, which include materials for the masonry screening wall, including design and dimensions; defining the use of a warehouse in conjunction with the Code of Federal Regulations; defining commercial motor vehicles; as well as more expansive definitions of retail warehouse, distribution center, truck company/motor freight company, and truck terminals. It will exclude noxious uses from the Medium Industrial district, rendering this PD less restrictive than the LI, Light Industrial zoning district. Furthermore, it provides for certain development standards and regulations and it provides for future lot development including landscaping standards, landscaping maintenance for existing and future development and platting/site plan submittals.

- **Operational** - This is a request to re-zone property from Light Industrial to a Planned Development District with an underlying zoning of Medium Industrial to allow for a trucking company use. Due to the number and types of uses allowed within Medium Industrial zoning, the applicant is pursuing a Planned Development District to reduce a number of the uses that would be allowed by right. These uses are: blood plasma donor center; prison/custodial institution; rescue mission or shelter for the homeless; social service provider, not rescue mission or shelter; night club, discotheque, or dance hall; pawn shop; sexually oriented business; towing and impound yard; truck stop with or without fuel and/or accessory services; truck plaza; and salvage or reclamation of products (outdoors). By not allowing these 11 uses, the proposed zoning change would make the subject property more restrictive in allowances than its current zoning.

The subject property consists of two parcels. The western parcel was developed with a trucking company in the 1980's while setting aside the eastern parcel for future expansion of the business. At some time after construction of their existing facility, the City of Lancaster rezoned the area to Light Industrial, making the company a legal n

conforming use. The applicant is attempting to re-establish this use as a conforming business within the City of Lancaster. The subject property and areas surrounding it are the only areas designated on the Future Land Use Plan map as appropriate for Medium Industrial zoning.

- **Legal** – At the September 24, 2012 regular meeting, Council voted to approve the terms and conditions of Planned Development District regulations on approximately 60+ acres of land owned by Con-Way Truckload to provide for development for Medium Industrial (MI) and Light Industrial (LI) uses, development regulations and subdivision, site and concept plan approval, providing for excluded uses, providing for minimum building size on Lot 3; and, authorizing the Council to consider as an ordinance. Councilmember Jaglowski moved to approve the motion as read by the City Attorney for item 16(b), seconded by Councilmember Morris. The vote was cast 5 for, 1 against [Mejia] [Weaver absent].

The City Attorney has prepared the ordinance for the proposed development as a result of mediation negotiations and pending litigation. Following approval of this ordinance, the plaintiff's attorney has agreed to dismissal of the lawsuit.

- **Financial** - There are no financial considerations for this case.
- **Public Information** – There are no public information requirements other than the standard three day notice as provided in the Texas Open Meetings Act.

Options/Alternatives

1. Approve the zoning request.

Recommendation

At the November 6, 2012 regular Planning and Zoning Commission meeting, the P&Z recommended approval of the rezoning request, 2-1 (Vice Chair Prothro dissenting). Staff recommends approval of the ordinance as presented.

Attachments

- Ordinance
- P&Z communication with attachments (November 6, 2012)
- Unapproved P&Z minutes (November 6, 2012)

Submitted by:

Rona Stringfellow-Govan, Managing Director of Public Works and Development Services

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF LANCASTER, TEXAS, AMENDING ORDINANCE NO. 2006-04-13, THE LANCASTER DEVELOPMENT CODE AND ZONING MAP OF THE CITY OF LANCASTER, AS AMENDED, BY GRANTING A CHANGE IN ZONING FROM LI, LIGHT INDUSTRIAL, TO PD, PLANNED DEVELOPMENT, ON APPROXIMATELY 59.04 ACRES OF LAND IN THE CITY OF LANCASTER, DALLAS COUNTY, TEXAS, AND MORE GENERALLY LOCATED ON THE NORTH SIDE OF DAINELDALE ROAD APPROXIMATELY 1,340+ FEET WEST OF THE INTERSECTION OF HOUSTON SCHOOL ROAD AND DAINELDALE ROAD, BEING MORE PARTICULARLY DESCRIBED IN EXHIBITS "A" AND "B", ATTACHED HERETO AND INCORPORATED HEREIN FOR ALL PURPOSES; PROVIDING FOR DEVELOPMENT CONDITIONS WHICH ARE SET FORTH AND INCORPORATED HEREIN; PROVIDING FOR A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND (\$2,000) DOLLARS FOR EACH OFFENSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Lancaster has received a request for a zoning district change; and

WHEREAS, the Planning and Zoning Commission and the City Council of the City of Lancaster, in compliance with the laws of the State of Texas and the Lancaster Development Code with references to the granting of zoning classification changes, have given the requisite notices by publication and otherwise, and have held due hearings and afforded a full and fair hearing to all property owners generally and to all persons interested and situated in the affected area and in the vicinity thereof; and

WHEREAS, the City Council of the City of Lancaster is of the opinion and finds that the Lancaster Development Code and Zoning Map should be amended;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That Ordinance No. 2006-04-13, the Comprehensive Plan and Map of the City of Lancaster, be hereby amended to grant a change in zoning from LI, Light Industrial, to PD, Planned Development, with mixed MI and LI use and to permit a motor freight terminal on approximately 59.04 acres in the City of Lancaster, Dallas County, Texas, generally located on the north side of Daniieldale Road approximately 1,340+ feet

west of the intersection of Houston School Road and Danieldale Road, being more particularly described in Exhibit "A" (Legal Description) and Exhibit "B" (Concept Plan) attached hereto and made a part hereof for all purposes.

SECTION 2. That the property shall be developed and used only in accordance with the following development conditions set forth:

A. General. Unless otherwise stated, this Planned Development District is subject to the City of Lancaster Development Code, Ordinance #2006-04-13 and as amended except as provided in this Ordinance, and shall consist of Lots 1, 2 and 3 as set forth in Exhibit B.

B. Definitions

1. Masonry Screening Wall: shall mean a masonry fence (including tilt wall, pre-cast or concrete block) which is a minimum of six (6) feet in height. Berms in conjunction with a fence can be utilized to meet this height requirement.
2. Warehouse: shall mean a use engaged in storage, wholesale, and distribution of manufactured products, supplies, and equipment, exclusive of bulk storage of hazardous waste as defined in Title 40 Part 261 of the Code of Federal Regulations.
3. Commercial Motor Vehicles: Shall mean a motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:
 - a. Has a gross combination weight rating or gross combination weight of 11,794 kilograms or more (26,001 pounds or more), whichever is greater, inclusive of a towed unit(s) with a gross vehicle weight rating or gross vehicle weight of more than 4,536 kilograms (10,000 pounds), whichever is greater; or
 - b. Has a gross vehicle weight rating or gross vehicle weight of 11,794 or more kilograms (26,001 pounds or more), whichever is greater; or
 - c. Is designed to transport 16 or more passengers, including the driver; or
 - d. Is of any size and is used in the transportation of hazardous materials.

4. Warehouse, retail: shall mean an off-price or wholesale retail/warehouse establishment exceeding seventy thousand (70,000) square feet of gross floor area and offering a full range of general merchandise to the public.
5. Distribution Center: shall mean a primary use where goods are received and/or stored for delivery to the ultimate customer.
6. Truck Company/Motor Freight Company: shall include a facility used for the parking of trucks and storage of trucking containers, up to and including overnight storage.
7. Truck Terminal: shall mean a primary use which is designed to accommodate the simultaneous loading or unloading of five or more trucks and in which loading or unloading of trucks is incidental to the primary function of motor freight shipment.

C. Permitted Uses:

1. In this Planned Development District all of the uses in the MI-Medium and/or LI-Light Industrial zoning districts, as defined by the Lancaster Development Code, as amended, are permitted except the following uses are not permitted within such planned development:
 - a. Blood plasma donor center;
 - b. Prison/custodial institution;
 - c. Rescue mission or shelter for the homeless;
 - d. Social service provider, not rescue mission or shelter;
 - e. Night club, discotheque, or dance hall;
 - f. Pawn shop;
 - g. Sexually oriented business;
 - h. Towing and impound yard;
 - i. Truck stop, with or without fuel and/or accessory services;
 - j. Truck plaza; and,
 - k. Salvage or reclamation of products (outdoors).
2. Notwithstanding any regulation to the contrary, Truck Company/Motor Freight Company, Trucking Transport, Truck Terminal, Warehouse, Warehouse (retail), and Distribution Center are specifically permitted in this Planned Development District.

D. Other Development Standards: This Planned Development District shall be subject to the following development standards:

1. Maximum Density: 1:1 Floor Area Ratio
2. Front Yard Setback: 30 feet from the public right-of-way

3. Rear Yard Setback: None, unless a rear wall contains windows or doors, it shall be 20 feet from residentially zoned property
4. Side Yard Setback: None, unless it is adjacent to a residentially zoned property, in which case shall be 30 feet from the property line.
5. Maximum Building Height: 35 feet

E. Special Development Regulations: The owner/occupant shall incorporate the following special development regulations:

1. Within twelve months of completion of the City's reconstruction of Daniieldale Road the owner/occupant shall provide a Masonry Screening Wall along the west boundary, at the southwest corner of the Property in the location shown on the Concept Plan; such length not to exceed 220 feet.
2. The owner/occupant shall provide landscaping along the Daniieldale Road frontage as follows:
 - a. One 5-gallon shrub shall be planted every six (6) feet on center, exclusive of driveways;
 - b. One 6-inch caliper Large Tree or Ornamental Tree shall be planted every forty (40) feet on center, exclusive of driveways;
 - c. Required plantings of shrubs and trees on Lot 1 shall be installed before the later of: a) within twelve (12) months of the date of this ordinance; or b) within six (6) months of the completion of the widening of Daniieldale Road.
 - d. Required plantings for Lot 3 shall be installed prior to the issuance of a certificate of occupancy for any use on Lot 3;
 - e. In the event the street frontage for Lot 2 is used as a driveway, then no plantings shall be required for Lot 2. In the event Lot 2 is developed as part of Lot 1 or 3, then no plantings are required on Lot 2.
3. Development of a Truck Terminal on Lot 3 shall include a building containing at least 8,000 square feet in floor area (the "Required Building"). The Required Building shall be located no more than 60 feet from the Daniieldale Road northern right-of-way line. Truck parking must be located behind the front façade of the Required Building.
4. There shall be no parking or parking structures within the front yard setback (within thirty feet (30) from the north right-of-way of Daniieldale Road) on Lot 3.

5. Owner/occupant is permitted to provide adequate security by use of barbed or razor wire which may extend above any wall or fencing in order to maintain membership / compliance with Customs-Trade Compliance Against Terrorism (C-TPAT) which is a program led by U.S. Customs and Border Protection (CBP).
6. Perimeter landscaping shall not be required between Lots 2 and 3 and between Lot 1 and Lots 2 and 3, except 100 feet on the shared driveway between Lots 1 and 3.
7. In the event that the owner or occupant of Lot 3 uses metal fabric for a fence, such fence shall be black and/or green coated metal fencing.

F. Existing Development on LOT 1.

1. Any existing development on LOT 1 is hereby deemed conforming in terms of use, structure and development standards.
2. In the event LOT 1 is redeveloped for a use other than a Truck Terminal or Truck Company, then such redevelopment shall conform to the regulations set forth herein and the regulations set forth in the Medium Industrial zoning district of the Lancaster Land Development Code in effect at the time of redevelopment.

G. Landscaping Maintenance. All landscaping shall be irrigated and maintained in a healthy, growing condition subject to weather conditions and other conditions not within the control of the property owner that may affect the healthy, growing condition of landscaping; and as provided in the Lancaster Development Code, as amended.

H. Platting of the Property. The Property may be platted into three lots as identified on the Concept Plan. In the event the Property is platted into three lots as identified on the Concept Plan, a Knox box for emergency cross access shall be provided on the perimeter from Lot 1 to Lot 2 as identified on the Concept Plan, as agreed to by the Fire Chief.

I. Site Plan: Staff approval of a Development Plan and Site Plan package (includes site plan, landscape plan, elevations, preliminary utility and drainage plans and tree survey) is required prior to issuance of a Building Permit for LOTS 2 and 3 and any redevelopment or change of use on LOT 1.”

SECTION 3. Ordinance Number 2006-04-13, the Lancaster Development Code of the City of Lancaster, Texas, as amended, shall remain in full force and effect, save and except as amended by this ordinance.

SECTION 4. If any article, paragraph, subdivision, clause or provision of this ordinance or the Comprehensive Zoning Ordinance, as hereby amended, be adjudged invalid or held unconstitutional for any reason, such judgment or holding shall not affect the validity of this ordinance as a whole or any part or provision thereof, or of the Comprehensive Zoning Ordinance, as amended hereby, other than the part so declared to be invalid or unconstitutional.

SECTION 5. Any person, firm or corporation violating any of the provisions of this ordinance or the Comprehensive Zoning Ordinance of the City of Lancaster, Texas, as amended hereby, shall be deemed guilty of a misdemeanor and, upon conviction in the municipal court of the City of Lancaster, Texas, shall be subject to a fine not to exceed the sum of Two Thousand (\$2,000.00) dollars for each offense, and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 6. This ordinance shall take effect immediately from and after its passage and the publication of the caption as the law and charter in such cases provide.

DULY PASSED by the City Council of the City of Lancaster, Texas, on the 10th day of December 2012.

APPROVED:

MARCUS KNIGHT, MAYOR

ATTEST:

DOLLE K. DOWNE, CITY SECRETARY

APPROVED AS TO FORM:

ROBERT E. HAGER, CITY ATTORNEY
(REH/mpm)

EXHIBIT A
(Legal Description)

**59.041 Acres of property located within the S. B. Runyon Survey, Abstract No. 1199,
Recorded in Volume 99155, Page 60, Dallas County, Texas**



PLANNING & ZONING COMMISSION

Agenda Communication for November 6, 2012

#3

Z11-05(R) Conduct a Public Hearing and Consider an Amendment to the City of Lancaster's Comprehensive Plan's Future Land Use Map and a Rezoning Request from LI – Light Industrial to PD-MI – Planned Development for Medium Industrial uses with conditions to allow a trucking transport facility (motor freight terminal). The property is approximately 59.041 acres of land that is located on the north side of Daniieldale Road approximately 1,340± feet west of the intersection of Houston School Road and Daniieldale Road. The legal description of the property is within the S. B. Runyon Survey, Abstract no. 1199, Recorded in Volume 99155, Page 60, Dallas County, Texas.

Background

1. **Location and Size:** The property is located on the north side of Daniieldale Road, approximately 1,340± feet west of the intersection of Houston School Road and Daniieldale Road. The property is approximately 59.041 acres in size.
2. **Current Zoning:** The subject property is currently zoned LI, Light Industrial.
3. **Adjacent Properties:**
North: LCD – South I-20 Warehouse sub-district, Lancaster Campus District – South Interstate 20 Warehouse sub-district (Southpointe Corporate Center)
South: LI, Light Industrial (Swift Transportation Company)
East: LI, Light Industrial (undeveloped)
West: LI, Light Industrial (Conway Truckload, Inc.)
4. **Comprehensive Plan Compatibility:** The Comprehensive Plan identifies the subject property as suitable for existing Motor Freight Terminals (Medium Industrial). This proposal is compatible with the Comprehensive Plan because it supposes that the property is an existing Motor Freight Terminal within a Medium Industrial zoning district.
5. **Public Notification:** On Friday, October 26, 2012 , a notice for this public hearing appeared in the Focus Daily Newspaper; mailed notifications of this public hearing to all property owners that are within 200 feet of the subject site, and zoning signs were placed on the subject property. Of the thirty-three (33) property owner notifications mailed, none were returned in favor or opposition.

6. Case/Site History:

Date	Body	Action
12/9/09	N/A	Request withdrawn
6/15/10	P&Z	Recommended denial; applicant withdrew prior to City Council
10/5/10	P&Z	Applicant requested postponement until November 2, 2010
11/2/10	P&Z	Postponed to notify all property owners surrounding the subject property
12/7/10	P&Z	Recommended denial; applicant withdrew prior to City Council
6/7/11	P&Z	Recommended denial; approval requires supermajority
6/27/11	CC	Request Denied due to lack of a supermajority

Considerations

The purpose of this rezoning request is to secure the necessary land entitlements for the future development of the subject property which is under the ownership of Conway Truckload Incorporated. The subject property consists of two parcels. Conway Truckload developed the western parcel while setting aside the eastern parcel for future expansion of the business. At some time after construction of their existing facility, the City of Lancaster rezoned the area to Light Industrial, making the company a legal non-conforming use.

The applicant is attempting to re-establish this use as a conforming business within the City of Lancaster. There is currently no property within the city limits of Lancaster zoned Medium Industrial that would allow the current use to be a conforming entity. The subject property and areas surrounding it are the only areas designated on the Future Land Use Plan map as appropriate for Medium Industrial zoning. In addition, the section of Daniieldale Road that fronts the subject property is currently under design to be reconstructed.

The applicant is requesting a Planned Development District (PD) primarily to allow the existing trucking company by right but eliminate other uses within the Medium Industrial category that could be considered inappropriate for the area. The eliminated land uses would be: Blood plasma donor center; Prison/custodial institution; Rescue mission or shelter for the homeless; Social service provider, not rescue mission or shelter; Night club, discotheque, or dance hall; Pawn shop; Sexually oriented business; Towing and impound yard; Truck stop with fuel and accessory services; Salvage or reclamation of products (outdoors). By not allowing these 10 uses, the proposed zoning change would make the subject property more restrictive in allowances than its current zoning.

Additionally, the applicant is proposing to divide the lots up into three tracts of land to allow future expansion as well as for the possible sale of the remaining Tract 3. They are requesting special development regulations to ensure that the zoning regulations meet the unique requirements of this industry and the subject property. Included in those regulations is a request for masonry screening along the west side of the existing facility; the provision of landscaping on all tracts; the provision of a minimum building

square footage; the provision of security fencing that is adequate to maintain their membership/compliance with Customs-Trade Compliance Against Terrorism (C-TPAT) and to disallow a perimeter fence within the internal development. It is of special note that the applicant is requesting that certain landscaping shall not be installed until 12 months after the conclusion of the reconstruction of Daniieldale Road.

Options/Alternatives

- 1) Recommend approval of the rezoning request
- 2) Recommend approval of the rezoning request with modifications and state those modifications.
- 3) Recommend denial of the rezoning request
- 4) Table the rezoning request and direct staff.

Recommendation

Staff recommends **approval** of the rezoning application, as submitted.

Approval Process

Upon recommendation by the Planning and Zoning Commission, the City Council will conduct a public hearing and render a final decision for this item at the December 5, 2012, regular meeting.

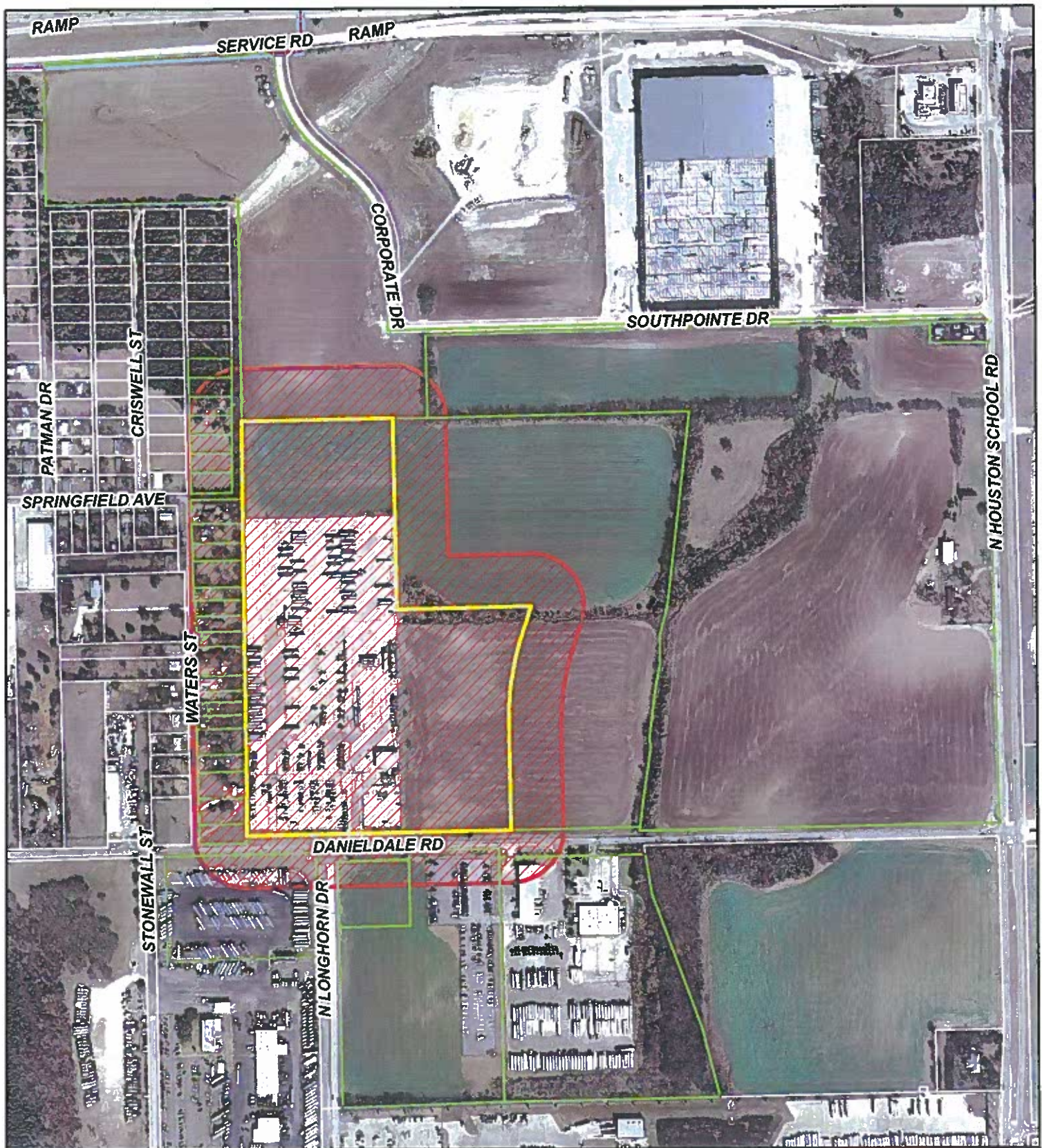
Attachments

- Location Map/200 foot notification map
- Zoning Exhibit (provided by the applicant)
- Draft – PD Ordinance
- Future Land Use Map
- Excerpt – Section 7, Comprehensive Plan (Future Land Use Plan)
- Plate 7-1 Future Land Use Plan Map
- Area map with similar industries

Prepared By and Submitted By:

Rona Stringfellow-Govan, AICP
Managing Director of Public Works and Development Services

Date: November 1, 2012



- Parcels
- Subject Parcel
- Notification Parcels
- 200' Notification Area

0 235 470 940 Feet

City of Lancaster **2935 Daniieldale Rd** **200' Notification Area**

TRACT 11, CASSIDON
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

N 89°37'02" E 720.04'

SECTION

N 89°37'02" E

985.22'

PUBLIC ALLEY

3724 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3726 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3712 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3714 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3716 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3718 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3720 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3722 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3724 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3726 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3728 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3730 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3732 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3734 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3736 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3738 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3740 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3742 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3744 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3746 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3748 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3750 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3752 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3754 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3756 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3758 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3760 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3762 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3764 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3766 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

3768 WATERS STREET
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

58.36 ACRES

TRACT "B"

PROPOSED USE: MI

(SUBJECT TO TEXT
MODIFICATIONS)

(VACANT GRASS COVERED LOT)

LOT 2

(VACANT GRASS COVERED LOT)

LOT 3

EXCERPT TO THE
CITY OF LANSING
FROM THE CITY OF LANSING
PLAT 11, 1911, D.C.B.A.

TRAVELER PUBLIC COMPANY
CITY OF LANSING
PLAT 11, 1911, D.C.B.A.

2022 INDEPENDENT SCHOOL ROAD
ABSTRACT 116
HOLAND PUBLIC LAND CO.
D.C.B.A.

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF LANCASTER, TEXAS, AMENDING ORDINANCE NO. 2006-04-13, THE LANCASTER DEVELOPMENT CODE AND ZONING MAP OF THE CITY OF LANCASTER, AS AMENDED, BY GRANTING A CHANGE IN ZONING FROM LI, LIGHT INDUSTRIAL, TO PD, PLANNED DEVELOPMENT, ON APPROXIMATELY 59.04 ACRES OF LAND IN THE CITY OF LANCASTER, DALLAS COUNTY, TEXAS, AND MORE GENERALLY LOCATED ON THE NORTH SIDE OF DAINELDALE ROAD APPROXIMATELY 1,340+ FEET WEST OF THE INTERSECTION OF HOUSTON SCHOOL ROAD AND DAINELDALE ROAD, BEING MORE PARTICULARLY DESCRIBED IN EXHIBITS "A" AND "B", ATTACHED HERETO AND INCORPORATED HEREIN FOR ALL PURPOSES; PROVIDING FOR DEVELOPMENT CONDITIONS WHICH ARE SET FORTH AND INCORPORATED HEREIN; PROVIDING FOR A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING A PENALTY OF FINE NOT TO EXCEED THE SUM OF TWO THOUSAND (\$2,000) DOLLARS FOR EACH OFFENSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Lancaster has received a request for a zoning district change; and

WHEREAS, the Planning and Zoning Commission and the City Council of the City of Lancaster, in compliance with the laws of the State of Texas and the Lancaster Development Code with references to the granting of zoning classification changes, have given the requisite notices by publication and otherwise, and have held due hearings and afforded a full and fair hearing to all property owners generally and to all persons interested and situated in the affected area and in the vicinity thereof; and

WHEREAS, the City Council of the City of Lancaster is of the opinion and finds that the Lancaster Development Code and Zoning Map should be amended;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:

SECTION 1. That Ordinance No. 2006-04-13, the Comprehensive Plan and Map of the City of Lancaster, be hereby amended to grant a change in zoning from LI, Light Industrial, to PD, Planned Development, with mixed MI and LI use and to permit a motor freight terminal on approximately 59.04 acres in the City of Lancaster, Dallas County, Texas, generally located on the north side of Daniel Dale Road approximately 1,340+ feet

west of the intersection of Houston School Road and Danieldale Road, being more particularly described in Exhibit "A" (Legal Description) and Exhibit "B" (Concept Plan) attached hereto and made a part hereof for all purposes.

SECTION 2. That the property shall be developed and used only in accordance with the following development conditions set forth:

A. General. Unless otherwise stated, this Planned Development District is subject to the City of Lancaster Development Code, Ordinance #2006-04-13 and as amended except as provided in this Ordinance, and shall consist of Lots 1, 2 and 3 as set forth in Exhibit B.

B. Definitions

1. Masonry Screening Wall: shall mean a masonry fence (including tilt wall, pre-cast or concrete block) which is a minimum of six (6) feet in height. Berms in conjunction with a fence can be utilized to meet this height requirement.
2. Warehouse: shall mean a use engaged in storage, wholesale, and distribution of manufactured products, supplies, and equipment, exclusive of bulk storage of hazardous waste as defined in Title 40 Part 261 of the Code of Federal Regulations.
3. Commercial Motor Vehicles: Shall mean a motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:
 - a. Has a gross combination weight rating or gross combination weight of 11,794 kilograms or more (26,001 pounds or more), whichever is greater, inclusive of a towed unit(s) with a gross vehicle weight rating or gross vehicle weight of more than 4,536 kilograms (10,000 pounds), whichever is greater; or
 - b. Has a gross vehicle weight rating or gross vehicle weight of 11,794 or more kilograms (26,001 pounds or more), whichever is greater; or
 - c. Is designed to transport 16 or more passengers, including the driver; or
 - d. Is of any size and is used in the transportation of hazardous materials.

4. Warehouse, retail: shall mean an off-price or wholesale retail/warehouse establishment exceeding seventy thousand (70,000) square feet of gross floor area and offering a full range of general merchandise to the public.
5. Distribution Center: shall mean a primary use where goods are received and/or stored for delivery to the ultimate customer.
6. Truck Company/Motor Freight Company: shall include a facility used for the parking of trucks and storage of trucking containers, up to and including overnight storage.
7. Truck Terminal: shall mean a primary use which is designed to accommodate the simultaneous loading or unloading of five or more trucks and in which loading or unloading of trucks is incidental to the primary function of motor freight shipment. .

C. Permitted Uses:

1. In this Planned Development District all of the uses in the MI-Medium and/or LI-Light Industrial zoning districts, as defined by the Lancaster Development Code, as amended, are permitted except the following uses are not permitted within such planned development:
 - a. Blood plasma donor center;
 - b. Prison/custodial institution;
 - c. Rescue mission or shelter for the homeless;
 - d. Social service provider, not rescue mission or shelter;
 - e. Night club, discotheque, or dance hall;
 - f. Pawn shop;
 - g. Sexually oriented business;
 - h. Towing and impound yard;
 - i. Truck stop, with or without fuel and/or accessory services;
 - j. Truck plaza; and,
 - k. Salvage or reclamation of products (outdoors).
2. Notwithstanding any regulation to the contrary, Truck Company/Motor Freight Company, Trucking Transport, Truck Terminal, Warehouse, Warehouse (retail), and Distribution Center are specifically permitted in this Planned Development District.

D. Other Development Standards: This Planned Development District shall be subject to the following development standards:

1. Maximum Density: 1:1 Floor Area Ratio
2. Front Yard Setback: 30 feet from the public right-of-way
3. Rear Yard Setback: None, unless a rear wall contains windows or doors, it shall be 20 feet from residentially zoned property
4. Side Yard Setback: None, unless it is adjacent to a residentially zoned property, in which case shall be 30 feet from the property line.

5. Maximum Building Height: 35 feet

E. Special Development Regulations: The owner/occupant shall incorporate the following special development regulations:

1. Within twelve months of completion of the City's reconstruction of Daniieldale Road the owner/occupant shall provide a Masonry Screening Wall along the west boundary, at the southwest corner of the Property in the location shown on the Concept Plan; such length not to exceed 220 feet. .
2. The owner/occupant shall provide landscaping along the Daniieldale Road frontage as follows:
 - a. One 5-gallon shrub shall be planted every six (6) feet on center, exclusive of driveways;
 - b. One 6-inch caliper Large Tree or Ornamental Tree shall be planted every forty (40) feet on center, exclusive of driveways;
 - c. Required plantings of shrubs and trees on Lot 1 shall be installed before the later of: a) within twelve (12) months of the date of this ordinance; or b) within six (6) months of the completion of the widening of Daniieldale Road.
 - d. Required plantings for Lot 3 shall be installed prior to the issuance of a certificate of occupancy for any use on Lot 3;
 - e. In the event the street frontage for Lot 2 is used as a driveway, then no plantings shall be required for Lot 2. In the event Lot 2 is developed as part of Lot 1 or 3, then no plantings are required on Lot 2.
3. Development of a Truck Terminal on Lot 3 shall include a building containing at least 8,000 square feet in floor area (the "Required Building"). The Required Building shall be located no more than 60 feet from the Daniieldale Road northern right-of-way line. Truck parking must be located behind the front façade of the Required Building.
4. There shall be no parking or parking structures within the front yard setback (within thirty feet (30) from the north right of way of Daniieldale Road) on Lot 3.
5. Owner/occupant is permitted to provide adequate security by use of barbed or razor wire which may extend above any wall or fencing in order to maintain membership / compliance with Customs-Trade Compliance Against Terrorism (C-TPAT) which is a program led by U.S. Customs and Border Protection (CBP).
6. Perimeter landscaping shall not be required between Lots 2 and 3 and between Lot 1 and Lots 2 and 3, except 100 feet on the shared driveway between Lots 1 and 3.

7. In the event that the owner or occupant of Lot 3 uses metal fabric for a fence, such fence shall be black and/or green coated metal fencing.

F. Existing Development on LOT 1.

1. Any existing development on LOT 1 is hereby deemed conforming in terms of use, structure and development standards.
2. In the event LOT 1 is redeveloped for a use other than a Truck Terminal or Truck Company, then such redevelopment shall conform to the regulations set forth herein and the regulations set forth in the Medium Industrial zoning district of the Lancaster Land Development Code in effect at the time of redevelopment.

G. Landscaping Maintenance. All landscaping shall be irrigated and maintained in a healthy, growing condition subject to weather conditions and other conditions not within the control of the property owner that may affect the healthy, growing condition of landscaping; and as provided in the Lancaster Development Code, as amended.

H. Platting of the Property. The Property may be platted into three lots as identified on the Concept Plan. In the event the Property is platted into three lots as identified on the Concept Plan, a Knox box for emergency cross access shall be provided on the perimeter from Lot 1 to Lot 2 as identified on the Concept Plan, as agreed to by the Fire Chief.

I. Site Plan: Staff approval of a Development Plan and Site Plan package (includes site plan, landscape plan, elevations, preliminary utility and drainage plans and tree survey) is required prior to issuance of a Building Permit for LOTS 2 and 3 and any redevelopment or change of use on LOT 1.”

SECTION 3. Ordinance Number 2006-04-13, the Lancaster Development Code of the City of Lancaster, Texas, as amended, shall remain in full force and effect, save and except as amended by this ordinance.

SECTION 4. If any article, paragraph, subdivision, clause or provision of this ordinance or the Comprehensive Zoning Ordinance, as hereby amended, be adjudged invalid or held unconstitutional for any reason, such judgment or holding shall not affect the validity of this ordinance as a whole or any part or provision thereof, or of the Comprehensive Zoning

Ordinance, as amended hereby, other than the part so declared to be invalid or unconstitutional.

SECTION 5. Any person, firm or corporation violating any of the provisions of this ordinance or the Comprehensive Zoning Ordinance of the City of Lancaster, Texas, as amended hereby, shall be deemed guilty of a misdemeanor and, upon conviction in the municipal court of the City of Lancaster, Texas, shall be subject to a fine not to exceed the sum of Two Thousand (\$2,000.00) dollars for each offense, and each and every day such offense shall continue shall be deemed to constitute a separate offense.

SECTION 6. This ordinance shall take effect immediately from and after its passage and the publication of the caption as the law and charter in such cases provide.

DULY PASSED by the City Council of the City of Lancaster, Texas, on the _____ day of _____, 2012.

APPROVED:

MARCUS KNIGHT, MAYOR

ATTEST:

DOLLE K. DOWNE, CITY SECRETARY

APPROVED AS TO FORM:

ROBERT E. HAGER, CITY ATTORNEY
(REH/mpm)

EXHIBIT A
(Legal Description)

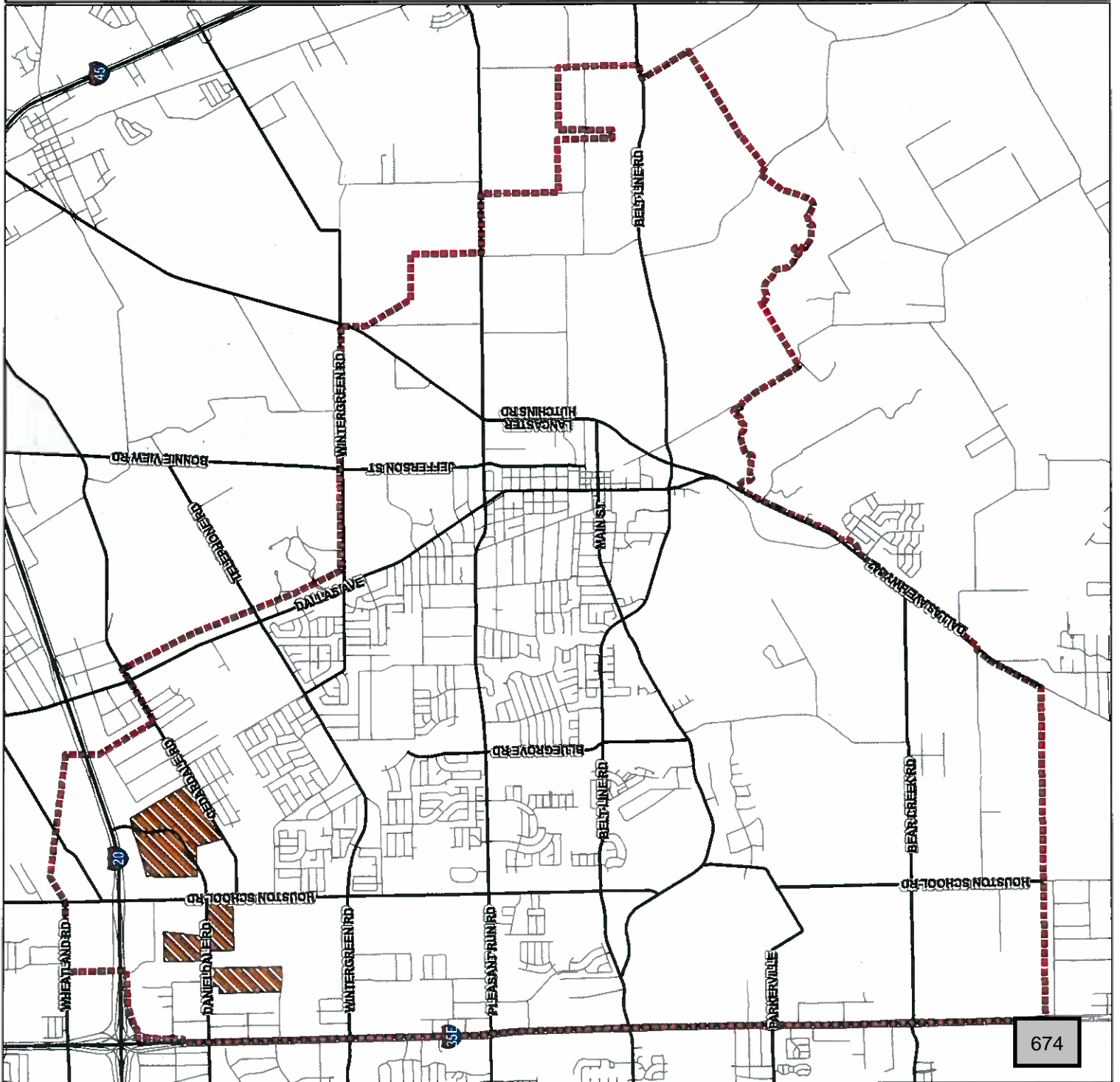
EXHIBIT B
(Concept Plan)

City of Lancaster Future Land Use



Legend

- City Limits
- Future Land Use Zoning
- Motor Freight Terminals



Section 7
FUTURE LAND USE PLAN

City of Lancaster Comprehensive Plan

Light Industrial Area

Four light industrial sites have been designated within Lancaster for the purpose of providing areas for high-tech, manufacturing, industrial-office types of land uses (refer to **Plate 7-1**). The first area is located in the northwestern part of Lancaster, between Interstate Highway 35 and Houston School Road. This particular location has frontage on Daniieldale Road and Wintergreen Road, and is easily accessible to Interstate Highway 35. Additional advantage for this site comes from the thoroughfares that are proposed to pass through it in the future, thereby connecting it directly to both Interstate Highway 35 and Interstate Highway 20 (see the Thoroughfare Plan element for more details). It should be noted that an area of existing trucking-related facility (Truck Terminal) exists. Any additional truck terminal and/or transportation-related uses desiring to locate within Lancaster must be confined to this area designated for motor freight terminal.

The second light industrial area is located in the southern part of the City at the intersection of Bear Creek Road and State Highway 342. If Loop 9 (see **Plate 4-2**) along Bear Creek Road is constructed as planned, this site will become an advantageous location for light industrial uses. A third area, located west of Dallas Avenue (State Highway 342) in the northeastern part of the City, between Cedardale and Telephone Roads, has also been proposed for light industrial use. The fourth site identified for light industrial uses is located at the northeastern border of the City, to the north of Pleasant Run Road and to the east of Jefferson St. with Lancaster-Hutchins Road traversing through the center of the site, and Cornell Rd on the east.

The majority of the new industries locating within smaller cities throughout the state of Texas can be considered *light industrial*, and therefore, it is expected that similar non-polluting industries are likely to locate within the City of Lancaster. The City should consider establishing development standards for those industrial tracts that have frontage along, or are visible from, thoroughfares (e.g., Houston School Road), as well as for those that are adjacent or in close proximity to residential areas. These standards should include:

- ♦ Those similar to any related highway commercial structures;
- ♦ Screening of loading docks and outdoor machinery; and
- ♦ Landscaping and screening of areas visible from adjacent thoroughfares (e.g., street trees/plantings, landscaped edge, berming).

Existing Motor Freight Terminals

This land use designation is primarily proposed in order to allow for motor freight terminals and industrial land uses that are trucking-related, including uses such as transfer terminals. Creating a specific area for these higher intensity uses can help the City benefit from trucking-related industries

without being adversely affected by them. It should be noted that in the context of this Future Land Use Plan, trucking-related industries are those that require the constant and sustained use of heavy-load vehicles (i.e., eighteen-wheeler trucks and trailers). These would not include industries involved in the manufacturing, warehousing, or distribution of goods that require transportation on a regular basis.

Public Use Areas

The Future Land Use Plan does not specify exact locations for public and semi-public uses, such as churches, schools, lodges and fraternal meeting facilities, certain non-profit organizations, and other similar institutions. The public and semi-public uses shown on the Plan are those that exist within the City at the present time. It is anticipated that new public and semi-public uses will seek to locate within Lancaster as the City continues to grow. Future public and semi-public uses should have direct access to a major arterial or collector street. Public land uses should not locate within areas that are highly visible, specifically those along Interstate Highway 35, Interstate Highway 20, and Pleasant Run Road. These locations are more ideally suited for higher intensity land use and should be reserved for businesses that typically require areas regularly experiencing high traffic volumes.

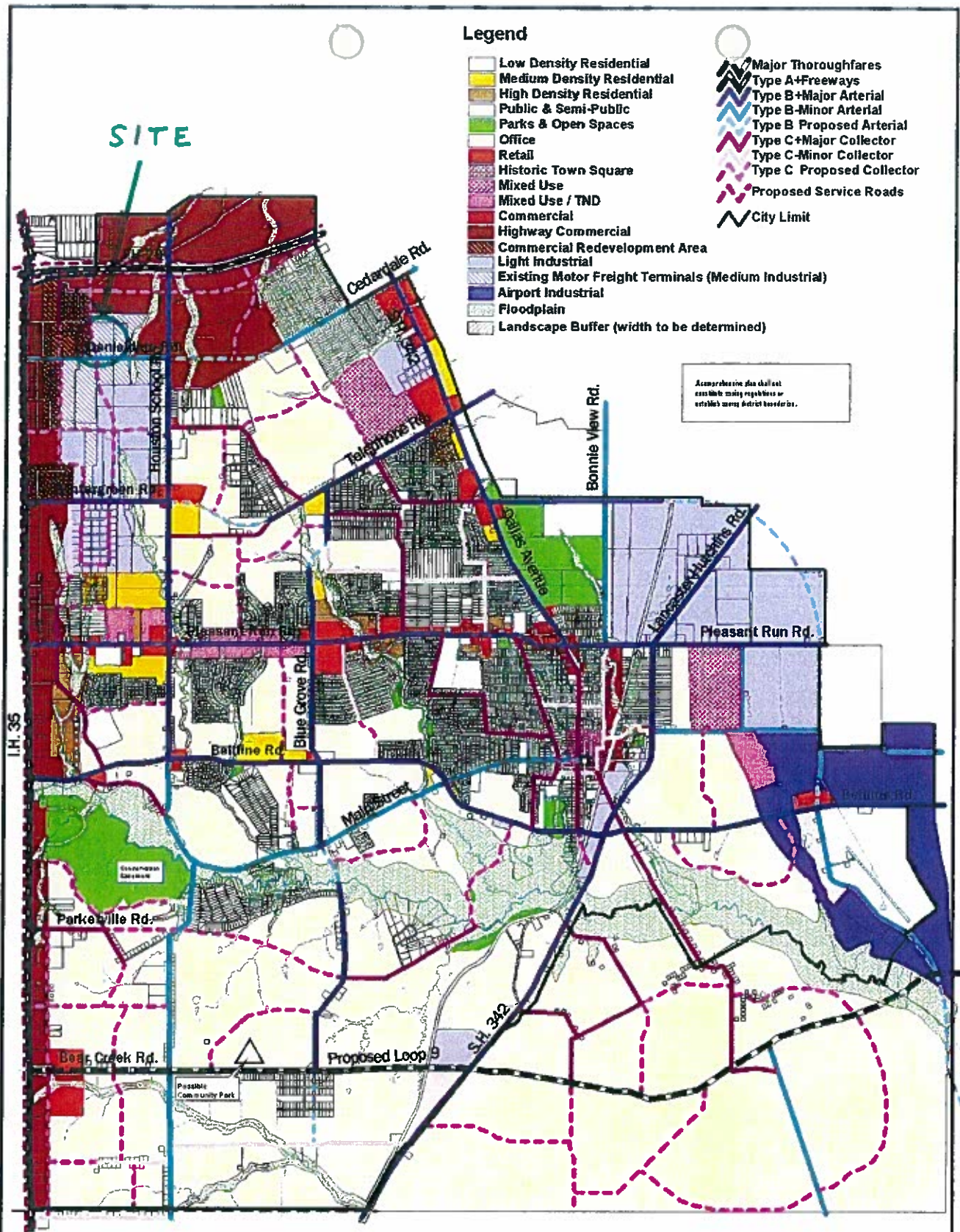
Low Density Residential Areas

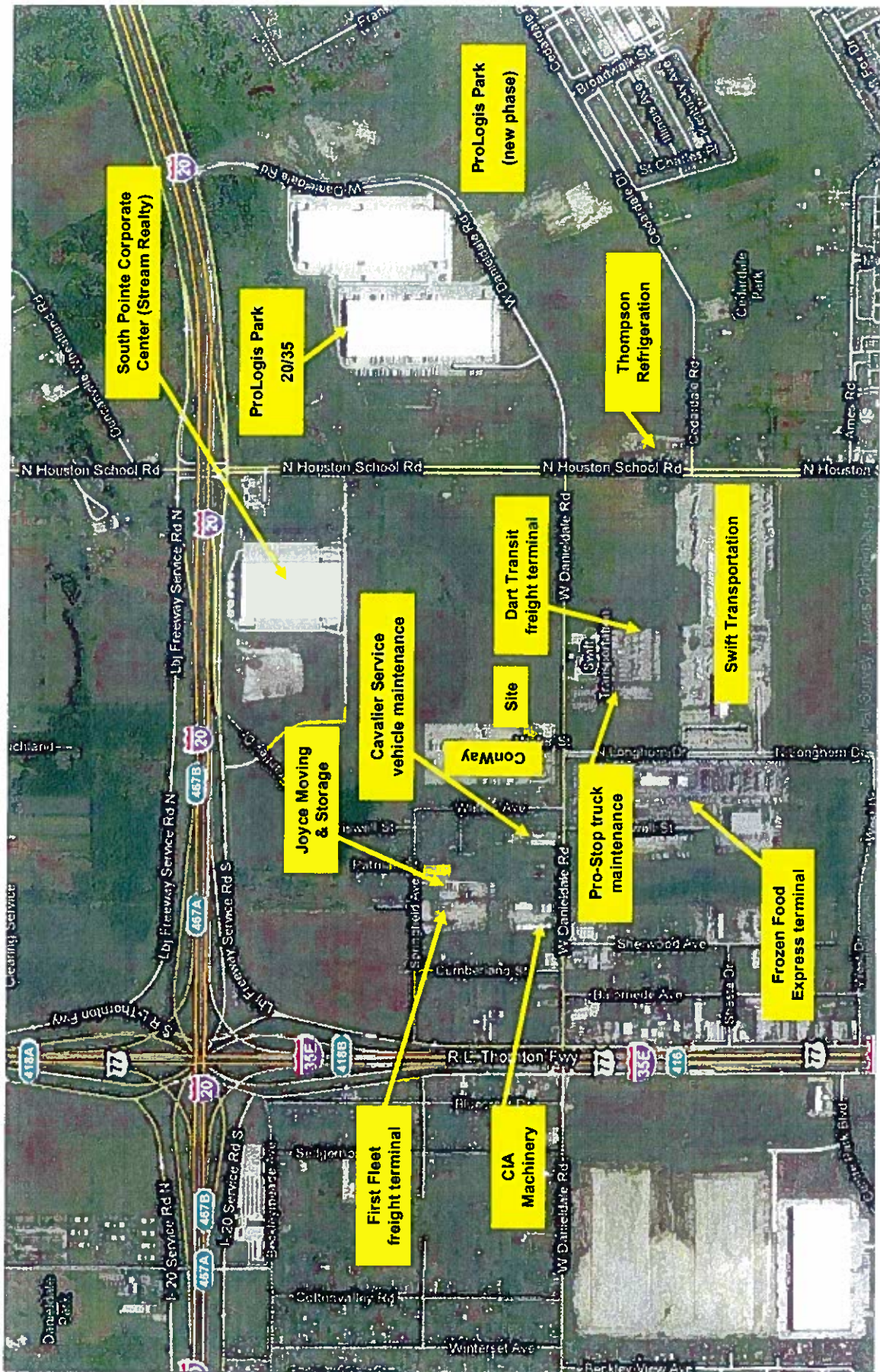
Most of the undeveloped/vacant land area within the corporate limits and the extraterritorial jurisdiction (ETJ) of Lancaster is proposed for low density, single-family residential use. In determining the appropriateness of residential uses, the quality of subdivision design and the overall proposed neighborhood should be considered important factors. Although much land area exists for residential uses, those that are considered to be *easy* tracts to develop, meaning those sites that have accessibility to existing infrastructure, will become increasingly difficult to find. Consequently, the City will need to concentrate on developing and expanding its current infrastructure before allowing residential development in these areas.

Multi-Family (High Density Residential) Areas

Currently, slightly over 19.5 percent of the City's housing stock is of the multi-family type. It is recommended that Lancaster maintain this percentage as a maximum for future multi-family housing mix and, where possible, allow new units throughout the City in accordance with the Future Land Use Plan. It is suggested that the following guidelines be used to determine if larger multi-family complexes are appropriate within a given location:

- ♦ The tract is adjacent to a collector or major thoroughfare;







City of Lancaster Planning Division



TREE CITY USA.

FIRST RECEIVED SAT 11/3/12 3:00 PM

THERE WAS NO NOTICE RECEIVED
BY ME FROM THE OCT 26TH MAILING !!!
NOTICE OF PUBLIC HEARING

TO: Property Owner

RE: Application for a request to Rezone property from LI - Light Industrial to PD-MI
Planned Development Medium Industrial

LOCATION: 2935 Daniieldale Road. A location map depicting the property and the 200-foot
notification area is attached for reference. This notice and the notification area are
required under Chapter 211.007 of the Texas Local Government Code.

**EXPLANATION
OF REQUEST:** The Applicant requests to rezone property from LI - Light Industrial to PD-MI Planned
Development Medium Industrial as the base zoning [Case #Z11-05].

- ☐ I AM IN FAVOR OF THE REQUEST FOR THE FOLLOWING REASONS:
- ☒ I AM OPPOSED TO THE REQUEST FOR THE FOLLOWING REASONS:

COMMENTS:

THERE HAS ALREADY BEEN ENOUGH ADVERSE IMPACT O.
THE ADJACENT RESIDENTIAL PROPERTIES BY ALLOWING THIS AREA
TO BE ZONED LIGHT INDUSTRIAL - TO ALLOW TO BE CHANGED TO PD-MI
WILL ONLY MAKE IT WORSE. IT AFFECTS TOO MANY PEOPLE FOR

SIGNATURE:

ADDRESS:

Gerald Anderson
3536 WATERS ST, LANCASTER TX
THE PROFIT OF ONLY A
FEW INVESTORS AND IS
NOT FAIR TO US

Your written comments are being solicited in the above case. Additional information is available in the
Division of Planning at 700 E. Main Street, Lancaster, Texas 75146. The Planning and Zoning Commission
will hold a public hearing and take action on the above case at their meeting on Tuesday, November 6, 2012,
at 7:00 pm. The City Council will hold a public hearing and take action on the above case at their meeting
Monday, December 5, 2012, at 7:00 pm. Meetings are typically held in the City Council Chambers, City of
Lancaster Municipal Center, 211 N. Henry Street, Lancaster, Texas.

Please legibly respond in ink. If the signature and/or address are missing, your comments will not be
recorded. Your response must be received in the Department of Planning by 5 pm on Monday, November
5th, for your comments to be included in the Planning and Zoning Commission's packet. Responses
received after that time will be forwarded to the Commission at the public hearing.

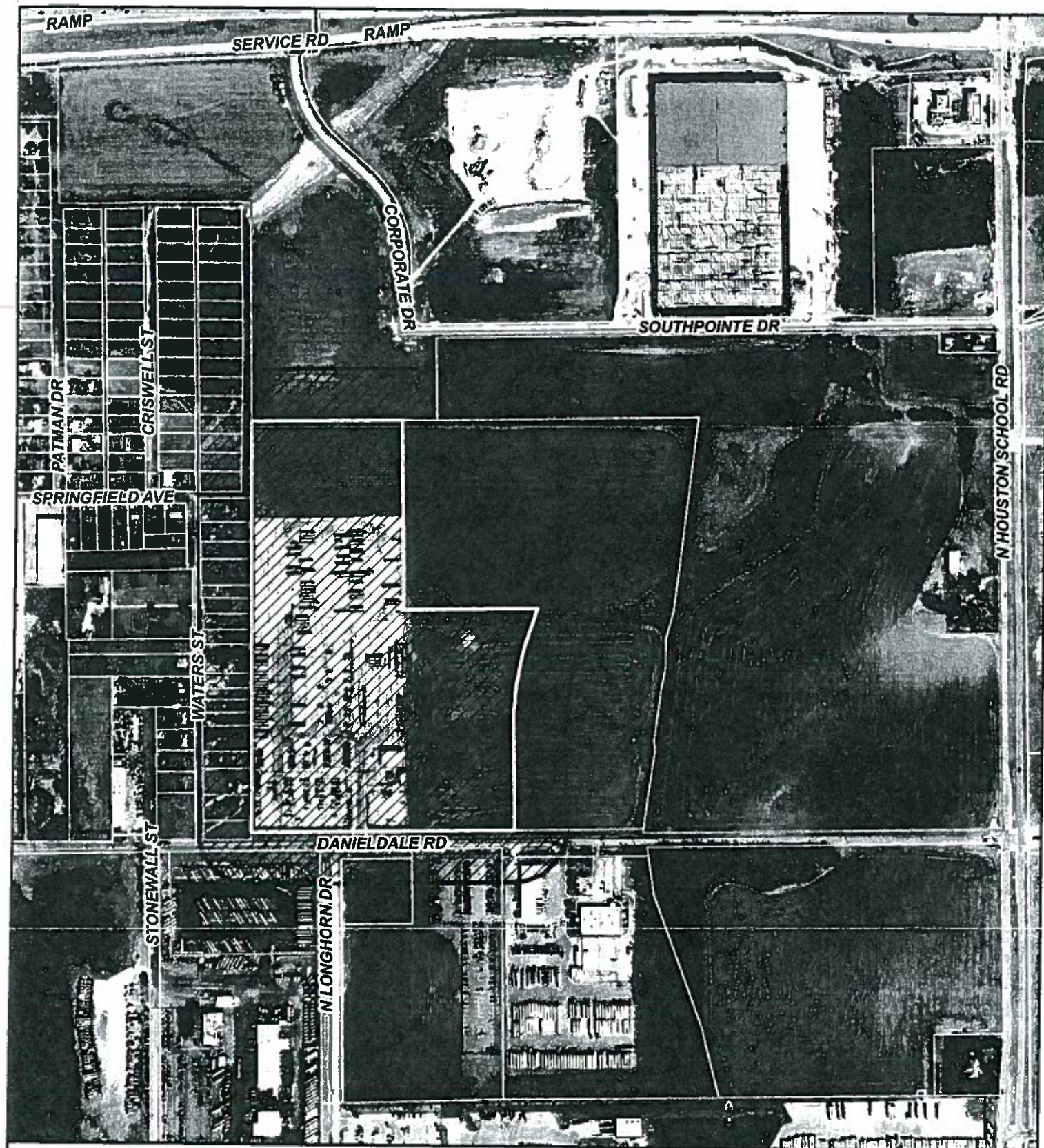
If you have any questions concerning this request,
please contact the
Planning Division
Phone 972-275-1722
FAX 972-275-1822

RETURN BY FAX OR MAIL

City of Lancaster
Planning Division
700 E. Main Street
Lancaster, TX 75146

33 notices were sent out October 26, 2012 and November 1, 2012

THIS WILL ONLY BRING MORE NOISE AND POLLUTION
AND DISTRUCTION TO OUR ROADS IN THE AREA.
PLEASE DONT TRY TO FIX ONE BAD DECISION, WITH STILL ANOTHE
Gerald Dallas Anderson



City of Lancaster
2935 Daniieldale Rd
200' Notification Area



Parcels

Subject Parcel



Notification Parcels



200' Notification Area

0 235 470 940 Feet



**REGULAR MEETING MINUTES
PLANNING & ZONING COMMISSION
CITY OF LANCASTER, TEXAS
TUESDAY, NOVEMBER 6, 2012
UNAPPROVED MINUTES FOR ZONING CHANGE**



CALL TO ORDER:

Chair Wright called the meeting to order at 7:00 p.m. on November 6, 2012.

COMMISSIONERS

**QUINNIE WRIGHT, CHAIR
MARIAN ELKINS - absent
JAMES MITCHELL
LAWRENCE PROTHRO, VICE CHAIR
GENEVIVE ROBINSON**

CITY STAFF

RONA STRINGFELLOW-GOVAN

ROBERT HAGER

**MANAGING DIRECTOR OF PUBLIC
WORKS/DEVELOPMENT SERVICES
CITY ATTORNEY**

PUBLIC HEARING:

1. Z11-05 Conduct a Public Hearing and Consider an Amendment to the City of Lancaster's Comprehensive Plan's Future Land Use Map and a Rezoning Request from LI – Light Industrial to PD MI – Planned Development for Medium Industrial with conditions to allow a trucking transport facility. The property is approximately 59.041 acres of land that is located on the north side of Daniieldale Road approximately 1,340± feet west of the intersection of Houston School Road and Daniieldale Road. The legal description of the property is within the S. B. Runyon Survey, Abstract no. 1199, Recorded in Volume 99155, Page 60, Dallas County, Texas.

Director Rona Stringfellow-Govan gave the staff presentation stating that the purpose of this rezoning request is to secure the necessary land entitlements for the future development of the subject property which is under the ownership of Conway Truckload Incorporated. The subject property consists of two parcels. Conway Truckload developed the western parcel while setting aside the eastern parcel for future expansion of the business. At some time after construction of their existing facility, the City of Lancaster rezoned the area to Light Industrial, making the company a legal non-conforming use.

The applicant is attempting to re-establish this use as a conforming business within the City of Lancaster. There is currently no property within the city limits of Lancaster zoned Medium Industrial that would allow the current use to be a conforming entity. The subject property and areas surrounding it are the only areas designated on the Future Land Use Plan map as appropriate for Medium Industrial zoning. In addition, the section of Daniieldale Road that fronts the subject property is schedule to be expanded and improved beginning in the Fall of 2012.



**REGULAR MEETING MINUTES
PLANNING & ZONING COMMISSION
CITY OF LANCASTER, TEXAS
TUESDAY, NOVEMBER 6, 2012
UNAPPROVED MINUTES FOR ZONING CHANGE**



This request was considered at the June 15, 2010 and December 7, 2010 Planning and Zoning Commission and was recommended for denial on both occasions. The applicant is requesting a Planned Development District (PD) primarily to allow the existing trucking company by right but eliminate other uses within the Medium Industrial category that could be considered inappropriate for the area. The eliminated land uses would be: Blood plasma donor center; Prison/custodial institution; Rescue mission or shelter for the homeless; Social service provider, not rescue mission or shelter; Night club, discotheque, or dance hall; Pawn shop; Sexually oriented business; Towing and impound yard; Truck stop with fuel and accessory services; Salvage or reclamation of products (outdoors). By not allowing these 10 uses, the proposed zoning change would make the subject property more restrictive in allowances than its current zoning.

The applicant's attorney, William Dahlstrom , Jackson Walker Law firm, 901 Main Street, Suite 6000,Dallas, TX 75202 gave a brief presentation about the proposal and stated that the current uses are all trucking related uses and his client would like to continue that use and sell their property to another company that would continue that use.

Vice Chair Prothro asked if the property ever registered their opposition during the citywide rezoning. Mr. Dahlstrom stated that they did not.

Chair Wright opened the public hearing.

IN FAVOR:

None

OPPOSED:

Suzi Weaver, 411 S. Centre indicated her opposition to more trucking in the area.

Gerald Anderson, lives at 315 Centre, but owns property at 3536 Waters Street, Lancaster, Texas indicated that he has numerous environmental concerns related to air, noise and light pollution. He also questioned the reasoning for the expansion and that it is already a detriment to the residents in the area.

Chair Wright entertained a motion to close the public hearing.

**COMMISSIONER MITCHELL MADE THE MOTION TO CLOSE THE PUBLIC HEARING,
SECONDED BY VICE CHAIR PROTHRO.**

AYES: MITCHELL, PROTHRO, WRIGHT

NAYES: NONE



**REGULAR MEETING MINUTES
PLANNING & ZONING COMMISSION
CITY OF LANCASTER, TEXAS
TUESDAY, NOVEMBER 6, 2012
UNAPPROVED MINUTES FOR ZONING CHANGE**



THE MOTION CARRIED 3-0.

Discussion of the Item:
None

Vice Chair Wright entertained a motion for the public hearing item.

A MOTION WAS MADE BY COMMISSIONER MITCHELL TO RECOMMEND APPROVAL OF THE RE-ZONING PROPOSAL FROM LIGHT INDUSTRIAL TO PD-MI – PLANNED DEVELOPMENT FOR MEDIUM INDUSTRIAL, AND SECONDED BY VICE CHAIR PROTHRO.

**AYES: MITCHELL AND WRIGHT
NAYES: PROTHRO**

THE MOTION CARRIED 2-1.

LANCASTER CITY COUNCIL

Agenda Communication

December 10, 2012

Item 10

Consider a resolution authorizing the award of Bid 2011-13 to Northstar Construction, Inc. for construction of the Lancaster Community Park Amphitheater through the Texas Parks and Wildlife Department (TPWD) Grant Project #50-000413 in an amount not to exceed \$325,351.00.

This request supports the City Council 2012-2013 Policy Agenda.

Goal: Quality Development

Background

At the request of State Representative Helen Giddings, the Texas Legislature included a special appropriation (\$200,000) for park development in the City of Lancaster as a part of the annual funding of the 2008 Texas Parks and Wildlife Department (TPWD) Grants Program. In April 2008, City Council authorized Resolution 2008-04-36 of matching grant funds to the Texas Parks and Wildlife Department for an amphitheater in Community Park in an amount not to exceed \$200,000 by the City. The project elements included expansion of the amphitheater, a walking trail with exercise equipment and benches, signs and landscaping. At this time, the amphitheater has not formally been through the naming process. The agreement at the time of the grant award was to call it the Helen Giddings Amphitheater.

On May 28, 2009 the Outdoor Recreation Grant was approved by TPWD. Parks staff negotiated a contract with Halff & Associates for professional services, which included the design of the project. City Council approved the contract with Halff & Associates on December 14, 2009. The Park Advisory Board reviewed the design in February 2010.

The City hosts many outdoor events that are limited by the lack of a permanent stage area or the necessary electrical, seating or other amenities that encourage outdoor performances. Such a facility would enhance citizen enjoyment of local talent and provide opportunities to showcase visual, static and performing arts. The amphitheater will be the venue for the City of Lancaster / City of DeSoto July 4th Celebration. As a result of last year's July 4th event at Community Park, the City of DeSoto requested our city to host the celebration annually and agreed to provide additional resources to assist with the event.

At the April 11, 2011 regular meeting this project was presented to City Council for consideration. At that time Council requested the item be placed on hold and be re-submitted at a later date. Since the issuance of the original bid, pursuant to the lowest

qualified bidder, concrete prices have increased. The vendor was contacted and has agreed to complete the construction under the same terms, conditions, and pricing.

Considerations

- **Operational** – The City of Lancaster will be solely responsible to operate and maintain the facilities constructed.
- **Legal** – This bid was processed in accordance with all local and state purchasing statutes. Bids were posted Nationwide on the State of Texas website and the City's e-procurement system on November 9, 16, and 23, 2010. A pre-bid meeting was held on December 2, 2010 and bids were opened on January 11, 2011. Five bids were received. Two of the bids received were M/WBE certified.
- **Financial** – Funding for the amphitheater will be reimbursable through the TPWD matching (50/50) grant. The matching funds were designated for this project in the 2010 Certificate of Obligation issuance.
- **Public Information** – Bids were posted Nationwide on the State of Texas website and the City's e-procurement system on November 9, 16, and 23, 2010. A pre-bid meeting was held on December 2, 2010 and bids were opened on January 11, 2011.

Options/Alternatives

1. City Council may approve the resolution as presented.
2. City Council may reject the resolution.

Recommendation

Staff recommends approval of the resolution as presented awarding bid 2011-13 to Northstar Construction, Inc. and authorizing the City Manager to execute the agreement.

Attachments

Resolution
Contract
Tab Sheet

Submitted by:

Dawn Berry, Purchasing Agent
Date: December 5, 2012

RESOLUTION NO.

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, AUTHORIZING THE AWARD OF BID 2011-13 TO NORTHSTAR CONSTRUCTION, INC. FOR CONSTRUCTION OF LANCASTER COMMUNITY PARK AMPHITHEATER IN AN AMOUNT NOT TO EXCEED \$325,351.00; AUTHORIZING THE CITY MANAGER TO EXECUTE THE CONTRACT PURSUANT TO APPROVAL; REPEALING ALL RESOLUTIONS IN CONFLICT; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the construction is partially funded through the Texas Parks and Wildlife Department (TPWD) Grant Project #50-000413; and,

WHEREAS, the City Council of the City of Lancaster desires to contract for construction services.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS, THAT:

SECTION 1. The City Council hereby authorizes the award of bid 2011-13 to Northstar Construction, Inc., for the construction of Lancaster Community Park Amphitheater in an amount not to exceed three hundred twenty-five thousand three hundred fifty-one dollars (\$325,351.00) pursuant to the contract attached hereto and incorporated herein by reference as Exhibit "A".

SECTION 2. The City Manager of the City of Lancaster, Texas, is hereby authorized to execute the contract.

SECTION 3. Any prior Resolution of the City Council in conflict with the provisions contained in this Resolution are hereby repealed and revoked.

SECTION 4. Should any part of this Resolution be held to be invalid for any reason, the remainder shall not be affected thereby, and such remaining portions are hereby declared to be severable.

SECTION 5. This Resolution shall take effect immediately from and after its passage, and it is duly resolved.

DULY PASSED AND APPROVED by the City Council of the City of Lancaster, Texas, on this the 10th day of December, 2012.

ATTEST:

APPROVED:

Dolle K. Downe, City Secretary

Marcus E. Knight, Mayor

APPROVED AS TO FORM:

Robert E. Hager, City Attorney

City of Lancaster, Texas

Standard Fixed Price Construction Agreement

This Agreement is made by and between the City of Lancaster, Texas, a home-rule municipality (hereinafter referred to as the "Owner") and Northstar Construction, Inc., (hereinafter referred to as the "Contractor") for construction of Lancaster Community Park Amphitheater (Bid 2011-13), (hereinafter referred to as the "Project"), the Owner and the Contractor hereby agree as follows:

ARTICLE I: CONTRACT & CONTRACT DOCUMENTS

1.1 THE CONTRACT

1.1.1 The Contract between the Owner and the Contractor, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it.

1.2. THE CONTRACT DOCUMENTS

1.2.1 The Contract Documents consist of this Agreement, the Invitation to Bid, Requirements and Instructions to Bidders, the Specifications, the Drawings, the Project Manual, all Change Orders and Field Orders issued hereafter, any other amendments hereto executed by the parties hereafter, together with the following (if any): None

Documents not enumerated in this Paragraph 1.2.1 are not Contract Documents and do not form part of this Contract.

1.3 ENTIRE AGREEMENT

1.3.1 This Contract, together with the Contractor's performance, maintenance, and payment bonds for the Project, all General Conditions, Special Conditions, Plans and Specifications, and Addenda attached thereto, constitute the entire and exclusive agreement between the Owner and the Contractor with reference to the Project. Specifically, but without limitation, this Contract supersedes any bid documents and all prior written or oral communications, representations and negotiations, if any, between the Owner and Contractor not expressly made a part hereof.

1.4 NO PRIVACY WITH OTHERS

1.4.1 Nothing contained in this Contract shall create, or be interpreted to create, privity or any other contractual agreement between the Owner and any person or entity other than the Contractor.

1.5 INTENT AND INTERPRETATION

1.5.1 The intent of this Contract is to require complete, correct and timely execution of the Work. Any Work that may be required, implied or inferred by the Contract Documents, or any one or more of them, as necessary to produce the intended result shall be provided by the Contractor for the Contract Price.

1.5.2 This Contract is intended to be an integral whole and shall be interpreted as internally consistent. What is required by any one Contract Document shall be considered as required by the Contract.

1.5.3 When a word, term or phrase is used in this Contract, it shall be interpreted or construed, first, as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

1.5.4 The words "include", "includes", or "including", as used in this Contract, shall be deemed to be followed by the phrase, "without limitation".

1.5.5 The specification herein of any act, failure, refusal, omission, event, occurrence or condition as constituting a material breach of this Contract shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence or condition shall be deemed not to constitute a material breach of this Contract.

1.5.6 Words or terms used as nouns in this Contract shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.5.7 The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the Shop Drawings, the Product Data, and any Plans and Specifications, and shall give written notice to the Owner of any inconsistency, ambiguity, error or omission which the Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance or the express or implied approval by the Owner or the Architect of the Contract Documents, Shop Drawings, or Product Data shall not relieve the Contractor of the continuing duties imposed hereby, nor shall any such approval be evidence of the Contractor's compliance with this Contract. The Owner has requested the Architect to only prepare documents for the Project, including the Drawings and Specifications for the Project, which are accurate, adequate, consistent, coordinated and sufficient for construction. **However, the owner makes no representation or warranty of any nature whatsoever to the contractor concerning such documents.** By the execution hereof, the Contractor acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and will not rely upon any representation or warranties by the Owner concerning such documents as no such representation or warranties have been or are hereby made. Further, the Contractor represents and warrants that it has had a s

and all responsibility for inadequacies or ambiguities in the plans, drawings or specifications as well as for latent conditions of the site where the work is to be performed.

1.5.8 As between numbers and scaled measurements on the Drawings and in the Design, the numbers shall govern, as between larger scale and smaller scale drawings, the larger scale shall govern.

1.5.9 Neither the organization of any of the Contract Documents into divisions, sections, paragraphs, articles, (or other categories), nor the organization or arrangement of the Design, shall control the Contractor in dividing the Work or in establishing the extent or scope of the Work to be performed by Subcontractors.

1.6 OWNERSHIP OF CONTRACT DOCUMENTS

1.6.1 The Contract Documents, and each of them, shall remain the property of the Owner. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided, however, that in no event shall Contractor use, or permit to be used, any or all of such Contract Documents on other projects without the Owner's prior written authorization.

ARTICLE II: THE WORK

2.1 The Contractor shall perform all of the Work required, implied or reasonably inferable from, this Contract.

2.2 WORK

2.2.1 The term "Work" shall mean whatever is done by or required of the Contractor to perform and complete its duties under this Contract, including the following: construction of the whole or a designated part of the Project; furnishing of any required surety bonds and insurance, and the provision or furnishing of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, permits and licenses required of the Contractor, fuel, heat, light, cooling and all other utilities as required by this Contract. The Work to be performed by the Contractor is generally described as follows:

Bid # 2010-13

Lancaster Community Park Amphitheater

The project consists of the construction of an amphitheater at Community Park

2.2.2 The Contractor shall be responsible for paying for and procuring all materials and labor and furnishing all services necessary or appropriate for the full performance of the Work and the for the full completion of the Project. All materials shall be new and materials and workmanship shall be of good quality. Upon request, the Contractor shall furnish satisfactory proof of the type, kind, and quality of materials.

ARTICLE III: CONTRACT TIME

3.1 TIME AND LIQUIDATED DAMAGES

3.1.1 The Contractor shall commence the Work within 10 days of receipt of a written Notice to Proceed, and shall achieve Substantial Completion of the Work no later than **forty-five (45) working days** from the date specified in the Notice to Proceed. The parties acknowledge that time is of the essence in the performance of the terms of this Contract. The term "calendar days" shall mean any and all days of the week or month, no days being excepted. It is contemplated by the parties that the progress of the Work may be delayed by certain conditions beyond the control of the parties; these delays have been contemplated by the parties and considered in the time allotted for performance specified herein and includes, but is not limited to delays occasioned on account of adverse weather, temporary unavailability of materials, shipment delays, and the presence and potential interference of other contractors who may be performing work at the Project site unrelated to this agreement.

The number of calendar days from the date on which the Work is permitted to proceed, through the date set forth for Substantial Completion, shall constitute the "Contract Time".

3.1.2 The Contractor shall pay the Owner the sum of \$120.00 per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Substantial Completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that Substantial Completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

3.1.3 In the event that the Contractor achieves certification of substantial completion prior to the scheduled completion date, the Owner shall pay to the Contractor the sum of \$0.00 per day for each calendar day that substantial completion is certified in advance of the scheduled completion date.

3.1.4 No claim shall be made by the Contractor to the Owner, and no damages, costs or extra compensation shall be allowed or paid by the Owner to the Contractor for any delay or hindrance from any cause in the progress or completion of the Work or this Contract. The Contractor's sole remedy in the event of any delay or

hindrance shall be to request time extensions by written change orders as provided for hereinafter. Should the Contractor be delayed by an act of the Owner, or should the Owner order a stoppage of the Work for sufficient cause, an extension of time shall be granted by the Owner by written authorization upon written application, which extension shall not be unreasonably denied, to compensate for the delay.

3.1.5 The Owner shall have the authority to suspend the Work wholly or in part for such period or periods of time as it may deem appropriate due to unsuitable conditions considered unfavorable for the proper prosecution of the Work or for the failure of the Contractor to carry out instructions from the Owner or Owner's representative. During any period in which the Work is stopped or during which any of the Work is not actively in progress for any reason, Contractor shall properly protect the site and the Work from damage, loss or harm.

3.2 SUBSTANTIAL COMPLETION

3.2.1 "Substantial Completion" shall mean that stage in the progression of the Work when the Work is sufficiently complete in accordance with this Contract that the Owner can enjoy beneficial use or occupancy of the Work and can utilize the Work for its intended purpose, even though minor miscellaneous work and/or adjustment may be required.

3.3 TIME IS OF THE ESSENCE

3.3.1 All limitations of time set forth in the Contract Documents are of the essence of this Contract.

ARTICLE IV: CONTRACT PRICE

4.1 THE CONTRACT PRICE

4.1.1 The Owner shall pay, and the Contractor shall accept, as full and complete payment for all of the Work required herein, the fixed sum of \$325,351.00.

The sum set forth in this Paragraph 4.1 shall constitute the Contract Price which shall not be modified except by written Change Order as provided in this Contract.

ARTICLE V: PAYMENT OF THE CONTRACT PRICE

5.1 SCHEDULE OF VALUES

5.1.1 Within ten (10) calendar days of the effective date hereof, the Contractor shall submit to the Owner and/or to the Architect a Schedule of Values allocating the Contract Price to the various portions of the Work. The Contractor's Schedule of Values shall be prepared in such form, with such detail, and supported by such data as the Architect or the Owner may require to substantiate its accuracy. The Contractor shall not imbalance the Schedule of Values nor artificially inflate any element thereof. The violation of this provision by the Contractor shall constitute a material breach of this Contract. The Schedule of Values shall be used only as a basis for the Contractor's Applications for Payment and shall only constitute such basis after it has been

acknowledged and accepted in writing by the Architect and the Owner.

5.2 PAYMENT PROCEDURE

5.2.1 The Owner shall pay the Contract Price to the Contractor as provided below.

5.2.2 **PROGRESS PAYMENTS** - Based upon the Contractor's Applications for Payment submitted to the Architect and upon Certificates for Payment subsequently issued to the Owner by the Architect, the Owner shall make progress payments to the Contractor on account of the Contract Price.

5.2.3 On or before the 25th day of each month after commencement of the Work, the Contractor shall submit an Application for Payment for the period ending the 15th day of the month to the Architect in such form and manner, and with such supporting data and content, as the Owner or the Architect may require. Therein, the Contractor may request payment for ninety percent (90%) of that portion of the Contract Price properly allocable to Contract requirements properly provided, labor, materials and equipment properly incorporated in the Work, less the total amount of previous payments received from the Owner. Such Application for Payment shall be signed by the Contractor and shall constitute the Contractor's representation that the Work has progressed to the level for which payment is requested in accordance with the Schedule of Values, that the Work has been properly installed or performed in full compliance with this Contract, and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the Architect will review the Application for Payment and may also review the Work at the Project site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by this Contract. The Architect shall determine and certify to the Owner the amount properly owing to the Contractor. The Owner shall make partial payments on account of the Contract Price to the Contractor within thirty (30) days following the Architect's receipt and approval of each Application for Payment. The amount of each partial payment shall be the amount certified for payment by the Architect less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by this Contract. The Architect's certification of the Contractor's Application for Payment shall not preclude the Owner from the exercise of any of its rights as set forth in Paragraph 5.3 below.

5.2.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which payments have been received from the Owner shall be free and clear of liens, claims, security interest or other encumbrances in favor of the Contractor or any other person or entity whatsoever.

5.2.5 The Contractor shall promptly pay each Subcontractor out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which such Subcontractor is entitled. In the event the Owner becomes informed that the Contractor has not paid a Subcontractor as herein provided, the Owner shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such Subcontractor as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

5.2.6 No progress payment, nor any use or occupancy of the Project by the owner, shall be interpreted to constitute an acceptance of any Work not in strict accordance with this Contract.

5.3 WITHHELD PAYMENT

5.3.1 The Owner may decline to make payment, may withhold funds, and, if necessary, may demand the return of some or all of the amounts previously paid to the Contractor, to protect the Owner from loss because of:

- (a) defective Work not remedied by the Contractor nor, in the opinion of the Owner, likely to be remedied by the Contractor;
- (b) claims of third parties against the Owner or the Owner's property;
- (c) failure by the Contractor to pay Subcontractors or others in a prompt and proper fashion;
- (d) evidence that the balance of the Work cannot be completed in accordance with the Contract for the unpaid balance of the Contract Price,
- (e) evidence that the Work will not be completed in the time required for substantial or final completion;
- (f) persistent failure to carry out the Work in accordance with the Contract;
- (g) damage to the Owner or a third party to whom the Owner is, or may be, liable.

In the event that the Owner makes written demand upon the Contractor for amounts previously paid by the Owner as contemplated in this Subparagraph 5.3.1, the Contractor shall promptly comply with such demand. The Owner shall have no duty to third parties to withhold payment to the Contractor and shall incur no liability for a failure to withhold funds.

5.4 UNEXCUSED FAILURE TO PAY

5.4.1 If within fifteen (15) days after the date established herein for payment to the Contractor by the

Owner, the Owner, without cause or basis hereunder, fails to pay the Contractor any amount then due and payable to the Contractor, then the Contractor may after ten (10) additional days' written notice to the Owner and the Architect, and without prejudice to any other available rights or remedies it may have, stop the Work until payment of those amounts due from the Owner have been received. Late payments shall not accrue interest or other late charges.

5.5 SUBSTANTIAL COMPLETION

5.5.1 When the Contractor believes that the Work is substantially complete, the Contractor shall submit to the Architect a list of items to be completed or corrected. When the Architect on the basis of an inspection determines that the Work is in fact substantially complete, it will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Guarantees required by the Contract shall commence on the date of Substantial Completion of the Work. The Certificate of Substantial Completion shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in such certificate.

Upon Substantial Completion of the Work, and execution by both the Owner and the Contractor of the Certificate of Substantial Completion, the Owner shall pay the Contractor an amount sufficient to increase total payments to the Contractor to one hundred percent (100%) of the Contract Price less three hundred percent (300%) of the reasonable cost as determined by the Owner and the Architect for completing all incomplete Work, correcting and bringing into conformance all defective and nonconforming Work, and handling all unsettled claims.

5.6 COMPLETION AND FINAL PAYMENT

5.6.1 When all of the Work is finally complete and the Contractor is ready for a final inspection, it shall notify the Owner and the Architect thereof in writing. Thereupon, the Architect will make final inspection of the Work and, if the Work is complete in full accordance with this Contract and this Contract has been fully performed, the Architect will promptly issue a final Certificate for Payment certifying to the Owner that the Project is complete and the Contractor is entitled to the remainder of the unpaid Contract Price, less any amount withheld pursuant to this Contract. If the Architect is unable to issue its final Certificate for Payment and is required to repeat its final inspection of the Work, the Contractor shall bear the cost of such repeat final inspection(s) which cost may be deducted by the Owner from the Contractor's final payment.

5.6.1.1 If the Contractor fails to achieve final completion within the time fixed by the Architect in its Certificate of Substantial Completion, the Contractor shall pay the

Owner the sum set forth hereinabove as liquidated damages per day for each and every calendar day of unexcused delay in achieving final completion beyond the date set forth herein for final completion of the Work. Any sums due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Contract. When the Owner reasonably believes that final completion will be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving final completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

5.6.2 The Contractor shall not be entitled to final payment unless and until it submits to the Architect its affidavit that all payrolls, invoices for materials and equipment, and other liabilities connected with the Work for which the Owner, or the Owner's property might be responsible, have been fully paid or otherwise satisfied; releases and waivers of lien from all Subcontractors of the Contractor and of any and all other parties required by the Architect or the Owner; consent of Surety, if any, to final payment. If any third party fails or refuses to provide a release of claim or waiver of lien as required by the Owner, the Contractor shall furnish a bond satisfactory to the Owner to discharge any such lien or indemnify the Owner from liability.

5.6.3 The Owner shall make final payment of all sums due the Contractor within ten (10) days of the Architect's execution of a final Certificate for Payment.

5.6.4 Acceptance of final payment shall constitute a waiver of all claims against the Owner by the Contractor except for those claims previously made in writing against the Owner by the Contractor, pending at the time of final payment, and identified in writing by the Contractor as unsettled at the time of its request for final payment.

5.6.5 Under no circumstance shall Contractor be entitled to receive interest on any payments or monies due Contractor by the Owner, whether the amount on which the interest may accrue is timely, late, wrongfully withheld, or an assessment of damages of any kind.

ARTICLE VI: THE OWNER

6.1 INFORMATION, SERVICES AND THINGS REQUIRED FROM OWNER

6.1.1 The Owner shall furnish to the Contractor, at the time of executing this Contract, any and all written and tangible material in its possession concerning conditions below ground at the site of the Project.

Such written and tangible material is furnished to the Contractor only in order to make complete disclosure of such material and for no other purpose. By furnishing such material, the Owner does not represent, warrant, or guarantee its accuracy either in whole, in part, implicitly or explicitly, or at all, and shall have no liability therefore. The Owner shall also furnish surveys, legal limitations and utility locations (if known), and a legal description of the Project site.

6.1.2 Excluding permits and fees normally the responsibility of the Contractor, the Owner shall obtain all approvals, easements, and the like required for construction and shall pay for necessary assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

6.1.3 The Owner shall furnish the Contractor, free of charge, one copy of the Contract Documents for execution of the Work.

6.2 RIGHT TO STOP WORK

6.2.1 If the Contractor persistently fails or refuses to perform the Work in accordance with this Contract, or if the best interests of the public health, safety or welfare so require, the Owner may order the Contractor to stop the Work, or any described portion thereof, until the cause for stoppage has been corrected, no longer exists, or the Owner orders that Work be resumed. In such event, the Contractor shall immediately obey such order.

6.3 OWNER'S RIGHT TO PERFORM WORK

6.3.1 If the Contractor's Work is stopped by the Owner under Paragraph 6.2, and the Contractor fails within seven (7) days of such stoppage to provide adequate assurance to the Owner that the cause of such stoppage will be eliminated or corrected, then the Owner may, without prejudice to any other rights or remedies the Owner may have against the Contractor, proceed to carry out the subject Work. In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the cost of correcting the subject deficiencies, plus compensation for the Architect's additional services and expenses necessitated thereby, if any. If the unpaid portion of the Contract Price is insufficient to cover the amount due the Owner, the Contractor shall pay the difference to the Owner.

ARTICLE VII: THE CONTRACTOR

7.1 The Contractor is again reminded of its continuing duty set forth in Subparagraph 1.5.7. The Contractor shall perform no part of the Work at any time without adequate Contract Documents or, as appropriate, approved Shop Drawings, Product Data or Samples for such portion of the Work. If the Contractor performs any of the Work knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall bear responsibility for such performance and shall bear the cost of correction.

7.2 The Contractor shall perform the Work strictly in accordance with this Contract.

7.3 The Contractor shall supervise and direct the Work using the Contractor's best skill, effort and attention. The Contractor shall be responsible to the Owner for any and all acts or omissions of the Contractor, its employees and others engaged in the Work on behalf of the Contractor.

7.3.1 The Contractor shall give adequate attention to the faithful prosecution of the Work and the timely completion of this Contract, with authority to determine the manner and means of performing such Work, so long as such methods insure timely completion and proper performance.

7.3.2 The Contractor shall exercise all appropriate means and measures to insure a safe and secure jobsite in order to avoid and prevent injury, damage or loss to persons or property.

7.4 WARRANTY

7.4.1 The Contractor warrants to the Owner that all labor furnished to progress the Work under this Contract will be competent to perform the tasks undertaken, that the product of such labor will yield only first-class results, that materials and equipment furnished will be of good quality and new unless otherwise permitted by this Contract, and that the Work will be of good quality, free from faults and defects and in strict conformance with this Contract. All Work not conforming to these requirements may be considered defective.

7.5 The Contractor shall obtain and pay for all permits, fees and licenses necessary and ordinary for the Work. The Contractor shall comply with all lawful requirements applicable to the Work and shall give and maintain any and all notices required by applicable law pertaining to the Work.

7.6 SUPERVISION

7.6.1 The Contractor shall employ and maintain at the Project site only competent supervisory personnel. Absent written instruction from the Contractor to the contrary, the superintendent shall be deemed the Contractor's authorized representative at the site and shall be authorized to receive and accept any and all communications from the Owner or the Architect.

7.6.2 Key supervisory personnel assigned by the Contractor to this Project are as follows:

NAME	FUNCTION

So long as the individuals named above remain actively employed or retained by the Contractor, they shall

perform the functions indicated next to their names unless the Owner agrees to the contrary in writing. In the event one or more individuals not listed above subsequently assume one or more of those functions listed above, the Contractor shall be bound by the provisions of this Subparagraph 7.6.2 as though such individuals had been listed above.

7.7 The Contractor, within fifteen (15) days of commencing the Work, shall submit to the Owner and the Architect for their information, the Contractor's schedule for completing the Work. The Contractor's schedule shall be revised no less frequently than monthly (unless the parties otherwise agree in writing) and shall be revised to reflect conditions encountered from time to time and shall be related to the entire Project. Each such revision shall be furnished to the Owner and the Architect. Failure by the Contractor to strictly comply with the provisions of this Paragraph 7.7 shall constitute a material breach of this Contract.

7.8 The Contractor shall continuously maintain at the site, for the benefit of the owner and the Architect, one record copy of this Contract marked to record on a current basis changes, selections and modifications made during construction. Additionally, the Contractor shall maintain at the site for the Owner and Architect the approved Shop Drawings, Product Data, Samples and other similar required submittals. Upon final completion of the Work, all of these record documents shall be delivered to the Owner.

7.9 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

7.9.1 Shop Drawings, Product Data, Samples and other submittals from the Contractor do not constitute Contract Documents. Their purpose is merely to demonstrate the manner in which the Contractor intends to implement the Work in conformance with information received from the Contract Documents.

7.9.2 The Contractor shall not perform any portion of the Work requiring submittal and review of Shop Drawings, Product Data or Samples unless and until such submittal shall have been approved by the Architect. Approval by the Architect, however, shall not be evidence that Work installed pursuant thereto conforms with the requirements of this Contract.

7.10 CLEANING THE SITE AND THE PROJECT

7.10.1 The Contractor shall keep the site reasonably clean during performance of the Work. Upon final completion of the Work, the Contractor shall clean the site and the Project and remove all waste, rubbish, temporary structures, and other materials together with all of the Contractor's property therefrom. Contractor shall dispose of all refuse at a Texas Natural Resource Conservation Commission approved landfill. The Contractor shall further restore all property damaged during the prosecution of the Work and shall leave the site in a clean and presentable condition. No additional payment shall be made by the Owner for this work, the compensation having been considered and included in the contract price.

7.11 ACCESS TO WORK AND INSPECTIONS

7.11.1 The Owner and the Architect shall have access to the Work at all times from commencement of the Work through final completion. The Contractor shall take whatever steps necessary to provide access when requested. When reasonably requested by the Owner or the Architect, the Contractor shall perform or cause to be performed such testing as may be necessary or appropriate to insure suitability of the jobsite or the Work's compliance with the Contract requirements.

7.12 INDEMNITY AND DISCLAIMER

7.12.1 OWNER SHALL NOT BE LIABLE OR RESPONSIBLE FOR, AND SHALL BE INDEMNIFIED, DEFENDED, HELD HARMLESS AND RELEASED BY CONTRACTOR FROM AND AGAINST ANY AND ALL SUITS, ACTIONS, LOSSES, DAMAGES, CLAIMS, OR LIABILITY OF ANY CHARACTER, TYPE, OR DESCRIPTION, INCLUDING ALL EXPENSES OF LITIGATION, COURT COSTS, AND ATTORNEY'S FEES FOR INJURY OR DEATH TO ANY PERSON, OR INJURY OR LOSS TO ANY PROPERTY, RECEIVED OR SUSTAINED BY ANY PERSON OR PERSONS, INCLUDING THE CONTRACTOR, OR PROPERTY, ARISING OUT OF, OR OCCASIONED BY, DIRECTLY OR INDIRECTLY, THE PERFORMANCE OF CONTRACTOR UNDER THIS AGREEMENT, INCLUDING CLAIMS AND DAMAGES ARISING IN WHOLE OR IN PART FROM THE NEGLIGENCE OF OWNER, WITHOUT, HOWEVER, WAIVING ANY GOVERNMENTAL IMMUNITY AVAILABLE TO THE OWNER UNDER TEXAS LAW AND WITHOUT WAIVING ANY DEFENSES OF THE PARTIES UNDER TEXAS LAW. THE PROVISIONS OF THIS INDEMNIFICATION ARE SOLELY FOR THE BENEFIT OF THE PARTIES HERETO AND NOT INTENDED TO CREATE OR GRANT ANY RIGHTS, CONTRACTUAL OR OTHERWISE, TO ANY OTHER PERSON OR ENTITY. IT IS THE EXPRESSED INTENT OF THE PARTIES TO THIS AGREEMENT THAT THE INDEMNITY PROVIDED FOR IN THIS CONTRACT IS AN INDEMNITY EXTENDED BY CONTRACTOR TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF THE CONTRACTOR'S AS WELL AS THE OWNER'S NEGLIGENCE, WHETHER SUCH NEGLIGENCE IS THE SOLE OR PARTIAL CAUSE OF ANY SUCH INJURY, DEATH, OR DAMAGE.

7.12.2 The Contractor will secure and maintain Contractual Liability insurance to cover this indemnification agreement that will be primary and non-contributory as to any insurance maintained by the Owner for its own benefit, including self-insurance. In addition, Contractor shall obtain and file with Owner a Standard Certificate of Insurance evidencing the required coverage.

7.12.3 In claims against any person or entity indemnified under this Paragraph 7.12 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 7.12 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

7.13 NONDISCRIMINATION

7.13.1 The Contractor shall not discriminate in any way against any person, employee or job applicant on the basis of race, color, creed, national origin, religion, age, sex, or disability where reasonable accommodations can be effected to enable the person to perform the essential functions of the job. The Contractor shall further insure that the foregoing nondiscrimination requirement shall be made a part and requirement of each subcontract on this Project.

7.14 PREVAILING WAGE RATES

7.14.1 The Contractor shall comply in all respects with all requirements imposed by any laws, ordinances or resolutions applicable to the Project with regard to the minimum prevailing wage rates for all classes of employees, laborers, subcontractors, mechanics, workmen and persons furnishing labor and services to the Project. The City of Lancaster has adopted US Department of Labor's Davis Bacon Wage Determinations as the Prevailing Wage Rate Schedule, available to the Contractor by request, which specifies the classes and wage rates to be paid to all persons. The Contractor shall pay not less than the minimum wage rates established thereby for each class, craft or type of labor, workman, or mechanic employed in the execution of this Contract. The failure of the Contractor to comply with this requirement shall result in the forfeiture to the City of \$10.00 of a sum of not less than Sixty Dollars (\$60.00) for each person per day, or portion thereof, that such person is paid less than the prevailing rate. Upon request by the Owner, Contractor shall make available for inspection and copying its books and records, including but not limited to its payroll records, account information and other documents as may be required by the Owner to insure compliance with this provision.

7.15 JOB SITE SAFETY PRECAUTIONS

7.15.1 The Contractor shall at all times exercise reasonable precautions for the safety of its employees, laborers, subcontractors, mechanics, workmen and others on and near the jobsite and shall comply with all laws, ordinances, regulations, and standards of federal, state and local safety laws and regulations. The Contractor shall provide such machinery guards, safe walk-ways, ladders, bridges, and other safety devices as may be necessary or appropriate to insure a safe and secure jobsite and shall require its subcontractors to comply with this requirement. The Contractor shall immediately comply with any and all safety requirements imposed by the Architect during the progress of the Work.

7.16 WARNING DEVICES AND BARRICADES

7.16.1 The Contractor shall furnish and maintain such warning devices, barricades, lights, signs, pavement markings, and other devices as may be necessary or appropriate or required by the Architect to protect persons or property in, near or adjacent to the jobsite, including . No separate compensation shall be

the Contractor for such measures. Where the Work is being conducted in, upon or near streets, alleys, sidewalks, or other rights-of-way, the Contractor shall insure the placement, maintenance and operation of any and all such warning devices as may be required by the City of Lancaster and shall do so until no longer required by the City. Such devices shall be in compliance with and conform to the manual and specifications for the uniform system of traffic control devices adopted by the Texas Department of Transportation.

7.17 PROTECTION OF UTILITIES & OTHER CONTRACTORS

7.17.1 The Contractor shall use best efforts to leave undisturbed and uninterrupted all utilities and utility services provided to the jobsite or which presently exists at, above or beneath the location where the Work is to be performed. In the event that any utility or utility service is disturbed or damaged during the progress of the Work, the Contractor shall forthwith repair, remedy or restore the utility at Contractor's sole expense.

7.17.2 The Contractor understands and acknowledges that other contractors of the Owner or of other entities may be present at the jobsite performing other work unrelated to the Project. The Contractor shall use best efforts to work around other contractors without impeding the work of others while still adhering to the completion date established herein. In the event that the Contractor's work is or may be delayed by any other person, the Contractor shall immediately give notice thereof to the Architect and shall request a written Change Order in accordance with the procedures set forth by this Contract. The Contractor's failure to provide such notice and to request such Change Order shall constitute a waiver of any and all claims associated therewith.

ARTICLE VIII: CONTRACT ADMINISTRATION

8.1 THE ARCHITECT

8.1.1 When used in this Contract the term "Architect" does not necessarily denote a duly licensed, trained or certified architect; as used herein, the term shall be used interchangeably and shall mean a designated Architect, Engineer, or Contract Administrator (who may not be an architect or engineer) for the Owner, said person to be designated or redesignated by the Owner prior to or at any time during the Work hereunder. The Architect may be an employee of the Owner or may be retained by the Owner as an independent contractor but, in either event, the Architect's duties and authority shall be as set forth hereinafter. The Contractor understands and agrees that it shall abide by the decisions and instructions of the Architect notwithstanding the contractual relationship between the Owner and Architect. All of the Owner's instructions to the Contractor shall be through the Architect.

In the event the Owner should find it necessary or convenient to replace the Architect, the Owner shall retain a replacement Architect and the status of the replacement Architect shall be that of the former Architect.

8.2 ARCHITECT'S ADMINISTRATION

8.2.1 The Architect, unless otherwise directed by the Owner in writing, will perform those duties and discharge those responsibilities allocated to the Architect as set forth in this Contract. The Architect shall be the Owner's representative from the effective date of this Contract until final payment has been made.

8.2.2 The Owner and the Contractor shall communicate with each other in the first instance through the Architect.

8.2.3 The Architect shall be the initial interpreter of the requirements of the drawings and specifications and the judge of the performance thereunder by the Contractor. The Architect shall render written or graphic interpretations necessary for the proper execution or progress of the Work with reasonable promptness on request of the Contractor.

8.2.4 The Architect will review the Contractor's Applications for Payment and will certify to the Owner for payment to the Contractor, those amounts then due the Contractor as provided in this Contract.

8.2.5 The Architect shall have authority to reject Work which is defective or does not conform to the requirements of this Contract. If the Architect deems it necessary or advisable, the Architect shall have authority to require additional inspection or testing of the Work for compliance with Contract requirements.

8.2.6 The Architect will review and approve, or take other appropriate action as necessary, concerning the Contractor's submittals including Shop Drawings, Product Data and Samples. Such review, approval or other action shall be for the sole purpose of determining conformance with the design concept and information given through the Contract Documents.

8.2.7 The Architect will prepare Change Orders and may authorize minor changes in the Work by Field Order as provided elsewhere herein.

8.2.8 The Architect shall, upon written request from the Contractor, conduct inspections to determine the date of Substantial Completion and the date of final completion, will receive and forward to the Owner for the Owner's review and records, written warranties and related documents required by this Contract and will issue a final Certificate for Payment upon compliance with the requirements of this Contract.

8.2.9 The Architect's decisions in matters relating to aesthetic effect shall be final if consistent with the intent of this Contract.

8.3 CLAIMS BY THE CONTRACTOR

8.3.1 The Architect shall determine all claims and matters in dispute between the Contractor and Owner with regard to the execution, progress, or sufficiency of the Work or the interpretation of the Contract Documents, including but not limited to the plans and specifications. Any dispute shall be submitted in writing to the Architect within seven (7) days of the e

occurrence or the first appearance of the condition giving rise to the claim or dispute who shall render a written decision within a reasonable time thereafter. The Architect's decisions shall be final and binding on the parties. In the event that either party objects to the Architect's determination as to any submitted dispute, that party shall submit a written objection to the Architect and the opposing party within ten (10) days of receipt of the Architect's written determination in order to preserve the objection. Failure to so object shall constitute a waiver of the objection for all purposes.

8.3.2 Pending final resolution of any claim of the Contractor, the Contractor shall diligently proceed with performance of this Contract and the Owner shall continue to make payments to the Contractor in accordance with this Contract.

8.3.3 CLAIMS FOR CONCEALED, LATENT OR UNKNOWN CONDITIONS - The Contractor expressly represents that it has been provided with an adequate opportunity to inspect the Project site and thoroughly review the Contract Documents and plans and specifications prior to submission of its bid and the Owner's acceptance of the bid. Subject to the conditions hereof, Contractor assumes full responsibility and risk for any concealed, latent or unknown condition which may affect the Work. No claims for extra work or additional compensation shall be made by Contractor in connection with concealed, latent or unknown conditions except as expressly provided herein. Should concealed, latent or unknown conditions encountered in the performance of the Work (a) below the surface of the ground or (b) in an existing structure be at variance with the conditions indicated by this Contract, or should unknown conditions of an unusual nature differing materially from those ordinarily encountered in the area and generally recognized as inherent in Work of the character provided for in this Contract, be encountered, the Contract Price shall be equitably adjusted by Change Order upon the written notice and claim by either party made within seven (7) days after the first observance of the condition. As a condition precedent to the Owner having any liability to the Contractor for concealed or unknown conditions, the Contractor must give the Owner and the Architect written notice of, and an opportunity to observe, the condition prior to disturbing it. The failure by the Contractor to make the written notice and claim as provided in this Subparagraph shall constitute a waiver by the Contractor of any claim arising out of or relating to such concealed, latent or unknown condition and the Contractor thereby assumes all risks and additional costs associated therewith.

8.3.4 CLAIMS FOR ADDITIONAL COSTS - If the Contractor wishes to make a claim for an increase in the Contract Price, as a condition precedent to any liability of the Owner therefore, the Contractor shall give the Architect written notice of such claim within seven (7) days after the occurrence of the event, or the first appearance of the condition, giving rise to such claim. Such notice shall be given by the Contractor before proceeding to execute any additional or changed Work.

The failure by the Contractor to give such notice and to give such notice prior to executing the Work shall constitute a waiver of any claim for additional compensation.

8.3.4.1 In connection with any claim by the Contractor against the Owner for compensation in excess of the Contract Price, any liability of the Owner for the Contractor's costs shall be strictly limited to direct costs incurred by the Contractor and shall in no event include indirect costs or consequential damages of the Contractor. The Owner shall not be liable to the Contractor for claims of third parties, including Subcontractors. The Owner shall not be liable to the Contractor for any claims based upon delay to the Contractor for any reason whatsoever including any act or neglect on the part of the Owner.

8.3.5 CLAIMS FOR ADDITIONAL TIME - If the Contractor is delayed in progressing any task which at the time of the delay is then critical or which during the delay becomes critical, as the sole result of any act or neglect to act by the Owner or someone acting in the Owner's behalf, or by changes ordered in the Work, unusual delay in transportation, unusually adverse weather conditions not reasonably anticipated, fire or any causes beyond the Contractor's control, then the date for achieving Substantial Completion of the Work shall be extended upon the written notice and claim of the Contractor to the Owner and the Architect, for such reasonable time as the Architect may determine. Any notice and claim for an extension of time by the Contractor shall be made not more than seven (7) days after the occurrence of the event or the first appearance of the condition giving rise to the claim and shall set forth in detail the Contractor's basis for requiring additional time in which to complete the Project. In the event the delay to the Contractor is a continuing one, only one notice and claim for additional time shall be necessary. If the Contractor fails to make such claim as required in this Subparagraph, any claim for an extension of time shall be waived. The procedures and remedies provided by this provision shall be the sole remedy of Contractor and Contractor shall not assert nor be entitled to any additional delays or damages associated therewith.

8.4 FIELD ORDERS

8.4.1 The Architect shall have authority to order minor changes in the Work not involving a change in the Contract Price or in Contract Time and not inconsistent with the intent of the Contract. Such changes shall be effected by Field Order and shall be binding upon the Contractor. The Contractor shall carry out such Field Orders promptly.

8.5 MEDIATION

8.5.1 In the event that a dispute arises under the terms of this Contract, following an adverse determination by the Architect and proper preservation of the issue as required herein, the parties agree to submit to mediation. In such event, the parties shall agree to a designated person to serve as mediator and

each party shall be responsible for payment of one-half of the total mediation fees. The parties shall submit the dispute to mediation as soon as practical and in no event later than one (1) year after the Architect's written decision on the matter. At least one designated representative of each party must attend and participate in good faith in an effort to resolve the matters in dispute.

8.5.2 In no event shall the foregoing provision justify or authorize any delay in the progress of the Work; the parties shall abide by the decision of the Architect in accomplishing the timely completion of the Project.

ARTICLE IX: SUBCONTRACTORS

9.1 DEFINITION

9.1.1 A Subcontractor is an entity which has a direct contract with the Contractor to perform a portion of the Work. No Subcontractor shall be in privity with the Owner.

9.2 AWARD OF SUBCONTRACTS

9.2.1 Upon execution of the Contract, the Contractor shall furnish the Owner, in writing, the names of persons or entities proposed by the Contractor to act as a Subcontractor on the Project. The Owner shall promptly reply to the Contractor, in writing, stating any objections the Owner may have to such proposed Subcontractor. The Contractor shall not enter into a subcontract with a proposed Subcontractor with reference to whom the Owner has made timely objection. The Contractor shall not be required to subcontract with any party to whom the Contractor has objection.

9.2.2 All subcontracts shall afford the Contractor rights against the Subcontractor which correspond to those rights afforded to the Owner against the Contractor herein, including those rights afforded to the Owner by Subparagraph 12.2.1 below. All subcontracts shall incorporate by reference the provisions hereof and shall provide that no claims, causes or demands shall be made by any Subcontractor against the Owner.

9.2.3 The Contractor shall indemnify, defend and hold harmless the Owner from and against any and all claims, demands, causes of action, damage, and liability asserted or made against the Owner by or on behalf of any Subcontractor.

ARTICLE X: CHANGES IN THE WORK

10.1 CHANGES PERMITTED

10.1.1 Changes in the Work within the general scope of this Contract, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Contract, by Change Order or by Field Order.

10.1.2 Changes in the Work shall be performed under applicable provisions of this Contract and the Contractor shall proceed promptly with such changes.

10.2 CHANGE ORDER DEFINED

10.2.1 Change Order shall mean a written order to the Contractor executed by the Owner and the Architect, issued after execution of this Contract, authorizing and directing a change in the Work or an adjustment in the Contract Price or the Contract Time, or any combination thereof. The Contract Price and the Contract Time may be changed only by written Change Order.

10.3 CHANGES IN THE CONTRACT PRICE

10.3.1 Any change in the Contract Price resulting from a Change Order shall be determined as follows: (a) by mutual agreement between the Owner and the Contractor as evidenced by (1) the change in the Contract Price being set forth in the Change Order, (2) such change in the Contract Price, together with any conditions or requirements related thereto, being initialed by both parties and (3) the Contractor's execution of the Change Order, or (b) if no mutual agreement occurs between the Owner and the Contractor, then, as provided in Subparagraph 10.3.2 below.

10.3.2 If no mutual agreement occurs between the Owner and the Contractor as contemplated in Subparagraph 10.3.1 above, the change in the Contract Price, if any, shall then be determined by the Architect on the basis of the reasonable expenditures or savings of those performing, deleting or revising the Work attributable to the change, including, in the case of an increase or decrease in the Contract Price, a reasonable allowance for direct job site overhead and profit. In such case, the Contractor shall present, in such form and with such content as the Owner or the Architect requires an itemized accounting of such expenditures or savings, plus appropriate supporting data for inclusion in a Change Order. Reasonable expenditures or savings shall be limited to the following: reasonable costs of materials, supplies, or equipment including delivery costs, reasonable costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance, reasonable rental costs of machinery and equipment exclusive of hand tools whether rented from the Contractor or others, reasonable costs of premiums for all bonds and insurance, permit fees, and sales, use or other taxes related to the Work, and reasonable cost of direct supervision and jobsite field office overhead directly attributable to the change. In no event shall any expenditure or savings associated with the Contractor's home office or other non-jobsite overhead expense be included in any change in the Contract Price. Pending final determination of reasonable expenditures or savings to the Owner, payments on account shall be made to the Contractor on the Architect's Certificate for Payment.

10.3.3 If unit prices are provided in the Contract, and if the quantities contemplated are so changed in a proposed Change Order that application of such unit prices to the quantities of Work proposed will cause

substantial inequity to the Owner or to the Contractor, the applicable unit prices shall be equitably adjusted.

10.4 MINOR CHANGES

10.4.1 The Architect shall have authority to order minor changes in the Work not involving a change in the Contract Price or an extension of the Contract Time and not inconsistent with the intent of this Contract. Such minor changes shall be made by written Field Order, and shall be binding upon the owner and the Contractor. The Contractor shall promptly carry out such written Field Orders.

10.5 EFFECT OF EXECUTED CHANGE ORDER

10.5.1 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Contract as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out of or resulting from the Work included within or affected by the executed Change Order.

10.6 NOTICE TO SURETY; CONSENT

10.6.1 The Contractor shall notify and obtain the consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval is required by the Contractor's surety or by law. The Contractor's execution of the Change Order shall constitute the Contractor's warranty to the Owner that the surety has been notified of and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

ARTICLE XI: UNCOVERING & CORRECTING WORK

11.1 UNCOVERING WORK

11.1.1 If any of the Work is covered contrary to the Architect's request or to any provisions of this Contract, it shall, if required by the Architect or the Owner, be uncovered for the Architect's inspection and shall be properly replaced at the Contractor's expense without change in the Contract Time.

11.1.2 If any of the Work is covered in a manner not inconsistent with Subparagraph 11.1.1 above, it shall, if required by the Architect or Owner, be uncovered for the Architect's inspection. If such Work conforms strictly with this Contract, costs of uncovering and proper replacement shall by Change Order be charged to the Owner. If such Work does not strictly conform with this Contract, the Contractor shall pay the costs of uncovering and proper replacement.

11.2 CORRECTING WORK

11.2.1 The Contractor shall immediately proceed to correct Work rejected by the Architect as defective or failing to conform to this Contract. The Contractor shall pay all costs and expenses associated with correcting

such rejected Work, including any additional testing and inspections, and reimbursement to the Owner for the Architect's services and expenses made necessary thereby.

11.2.2 If within one (1) year after Substantial Completion of the Work any of the Work is found to be defective or not in accordance with this Contract, the Contractor shall correct it promptly upon receipt of written notice from the Owner. This obligation shall survive final payment by the Owner and termination of this Contract. With respect to Work first performed and completed after Substantial Completion, this one year obligation to specifically correct defective and nonconforming Work shall be extended by the period of time which elapses between Substantial Completion and completion of the subject Work.

11.2.3 Nothing contained in this Paragraph 11.2 shall establish any period of limitation with respect to other obligations which the Contractor has under this Contract. Establishment of the one year time period in Subparagraph 11.2.2 relates only to the duty of the Contractor to specifically correct the Work.

11.3 OWNER MAY ACCEPT DEFECTIVE OR NONCONFORMING WORK

11.3.1 If the Owner chooses to accept defective or nonconforming Work, the Owner may do so. In such event, the Contract Price shall be reduced by the greater of (a) the reasonable cost of removing and correcting the defective or nonconforming Work, and (b) the difference between the fair market value of the Project as constructed and the fair market value of the Project had it not been constructed in such a manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the Owner for its acceptance of defective or nonconforming Work, the Contractor shall, upon written demand from the Owner, pay the Owner such remaining compensation for accepting defective or nonconforming Work.

ARTICLE XII: CONTRACT TERMINATION

12.1 TERMINATION BY THE CONTRACTOR

12.1.1 If the Work is stopped for a period of ninety (90) days by an order of any court or other public authority, or as a result of an act of the Government, through no fault of the Contractor or any person or entity working directly or indirectly for the Contractor, the Contractor may, upon ten (10) days' written notice to the Owner and the Architect, terminate performance under this Contract and recover from the Owner payment for the actual reasonable expenditures of the Contractor (as limited in Subparagraph 10.3.2 above) for all Work executed and for materials, equipment, tools, construction equipment and machinery actually purchased or rented solely for the Work, less any salvage value of any such items.

12.1.2 If the Owner shall persistently or repeatedly fail to perform any material obligation to the Contractor for a period of fifteen (15) days after receiving written notice

from the Contractor of its intent to terminate hereunder, the Contractor may terminate performance under this Contract by written notice to the Architect and the Owner. In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance under this Contract for convenience pursuant to Subparagraph 12.2.1 hereunder.

12.2 TERMINATION BY THE OWNER

12.2.1 FOR CONVENIENCE

12.2.1.1 The Owner may for any reason whatsoever terminate performance under this Contract by the Contractor for convenience. The Owner shall give written notice of such termination to the Contractor specifying when termination becomes effective.

12.2.1.2 The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The Owner may direct the Contractor to assign the Contractor's right, title and interest under terminated orders or subcontracts to the Owner or its designee.

12.2.1.3 The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.

12.2.1.4

(a) The Contractor shall submit a termination claim to the Owner and the Architect specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the Architect. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Owner shall pay the Contractor, an amount derived in accordance with subparagraph (c) below.

(b) The Owner and the Contractor may agree to the compensation, if any, due to the Contractor hereunder.

(c) Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts:

(i) Contract prices for labor, materials, equipment and other services accepted under this Contract;

(ii) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the Work, and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages), provided however, that if it appears that the Contractor would have not profited or would have sustained a loss if the

entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

(iii) Reasonable costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to Subparagraph 12.2.1.2 of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 12.2.1 shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

12.2.2 FOR CAUSE

12.2.2.1 If the Contractor persistently or repeatedly refuses or fails to prosecute the Work in a timely manner, abandons the jobsite and fails to resume work within five (5) days of written notice thereof by the Owner, fails to grant or allow access to the jobsite by the Owner or Architect, fails to supply enough properly skilled workers, supervisory personnel or proper equipment or materials, fails to make prompt payment to Subcontractors or for materials or labor, persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a violation of a material provision of this Contract, then the Owner may by written notice to the Contractor, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

12.2.2.2 If the unpaid balance of the Contract Price does not exceed the cost of finishing the work, including compensation for the Architect's additional services and expenses made necessary thereby, such difference shall be paid by the Contractor to the Owner. This obligation for payment shall survive the termination of the Contract.

12.2.2.3 In the event the employment of the Contractor is terminated by the Owner for cause pursuant to Subparagraph 12.2.2 and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Subparagraph 12.2.1 and the provisions of Subparagraph 12.2.1 shall apply.

ARTICLE XIII: INSURANCE

13.1 CONTRACTOR SHALL MAINTAIN INSURANCE

13.1.1 The Contractor at his own expense shall purchase, maintain and keep in force during the life of this contract, adequate insurance that will protect the Contractor and/or any Additional Insured from

which may arise out of or result from operations under this contract. The insurance required shall provide adequate protections from all claims, whether such operations be by the Contractor or by any Additional Insured or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts of any of them may be liable and from any special hazards, such as blasting, which may be encountered in the performance of this contract in the amounts as shown below in Paragraph 13.2.1.

13.1.2 The Contractor shall not commence work on any Contract in the City of Lancaster until the Contractor has obtained all the insurance required under this paragraph and such insurance has been approved by the City.

13.2 TYPES AND AMOUNTS OF INSURANCE

13.2.1. The Contractor shall furnish and maintain during the life of the contract adequate Insurance in such amounts as follows:

<u>Type of Insurance</u>	<u>Amount</u>
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Worker's Compensation as set forth in the Worker's Compensation Act.

Commercial General Liability

\$1,000,000 Each Accident/Occurrence. The policy shall have no coverage removed by exclusions.

Limit of Insurance per Project or Owner's and Contractor's Protective Liability Insurance for the Project.

Automobile Liability

\$500,000 Combined single limit per occurrence.

13.2 INSTALLATION FLOATER

This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverage's designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under builder's risk insurance.

13.3 Builders Risk

This insurance shall be written in completed value form and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be

less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance.

Equipment Installed under this contract shall be insured under installation floater Insurance when the aggregate value of the equipment exceeds \$10,000.00.

If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the Installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

13.4 ADDITIONAL INSURED / PROJECT INFORMATION

The Owner shall be named as an additional insured on the Commercial General Liability (Public), Policies furnished by the Contractor.

The project name and bid/contract number shall be listed on the certificate.

13.5 WRITTEN NOTIFICATION

Each insurance policy shall contain a provision requiring that thirty (30) days prior to expiration, cancellation, non-renewal or any material change in coverage, a notice there of shall be given by certified mail to the Purchasing Agent, City of Lancaster, PO Box 940, Lancaster, Texas, 75146.

13.6 PREMIUMS AND ASSESSMENTS

Companies issuing the insurance policies shall have no recourse against the City for payment of any premiums or assessments for any deductibles which are at the sole responsibility and risk of the Contractor.

13.7 CERTIFICATE OF INSURANCE

Proof that the insurance is in force shall be furnished to the City of Lancaster on a Standard Certificate of Insurance Form. In the event any insurance policy shown on the Certificate of Insurance has an expiration date that is prior to the completion and final acceptance of the project by the City of Lancaster, the contractor shall furnish the City proof of identical continued coverage no later than thirty (30) days prior to the expiration date shown on the Certificate of Insurance.

13.8 PRIMARY COVERAGE

The coverage's provided herein shall be primary and noncontributory with any other insurance maintained by the City of Lancaster, Texas, for its benefit, including self insurance.

13.9 WORKER'S COMPENSATION INSURANCE COVERAGE

13.9.1 The Contractor shall:

1) provide coverage for its employees providing services on a project, for the duration of the

project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;

2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;

3) provide the governmental entity prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;

4) obtain from each person providing services on a project, and provide to the governmental entity:

(A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

(B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;

7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the Texas Worker's Compensation Commission on the sample notice, without any additional words or changes:

Required Workers' Compensation Coverage

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project,

regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

and

(8) contractually require each person with whom it contracts to provide services on a project, to:

(A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;

(B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;

(C) include in all contracts to provide services on the project the language in subsection (e) (3) of this rule;

(D) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(E) obtain from each other person with whom it contracts, and provide to the Contractor:

(i) a certificate of coverage, prior to the other person beginning work on the project; and

(ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

(F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

(G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

(H) contractually require each other person with whom it contracts, to perform as required by sub-paragraphs (A) - (H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

ARTICLE XIV: MISCELLANEOUS

14.1 LAWS AND ORDINANCES

14.1.1 The Contractor shall at all times and in all respects observe and comply with all federal, state and local laws, ordinances, and regulations applicable to the Project and Work. The Contractor shall further insure that all Subcontractors observe and comply with said laws, ordinances and regulations.

14.2 GOVERNING LAW

14.2.1 The Contract shall be governed by the laws of the State of Texas. Venue for any causes of action arising under the terms or provisions of this Contract or the Work to be performed hereunder shall be in the courts of Dallas County, Texas.

14.3 SUCCESSORS AND ASSIGNS

14.3.1 The Owner and Contractor bind themselves, their successors, assigns and legal representatives to the other party hereto and to successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in this Contract. The Contractor shall not assign this Contract without written consent of the Owner.

14.4 SURETY BONDS

14.4.1 If the Contract Price exceeds the sum of \$25,000.00, the Contractor shall furnish separate performance and payment bonds to the Owner, according to the requirements set out in the bid documents and state statutes to guaranty full and faithful performance of the Contract and the full and final payment of all persons supplying labor or materials to the Project. Each bond required by the bid documents or state statute shall set forth a penal sum in an amount not less than the Contract Price. Each bond furnished by the Contractor shall incorporate by reference the terms of this Contract as fully as though they were set forth verbatim in such bonds. In the event the Contract Price is adjusted by Change Order executed by the Contractor, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount. The performance and payment bonds furnished by the Contractor shall be in form suitable to the Owner and shall be executed by a surety, or sureties, reasonably suitable to the Owner and

authorized to do business in the State of Texas by the State Board of Insurance.

14.4.2 If the Contract Price exceeds the sum of \$25,000.00, the Contractor, upon execution of the Contract and prior to commencement of the Work, shall furnish to the Owner a two-year maintenance bond in the amount of one hundred percent (100%) of the Contract Price covering the guaranty and maintenance prescribed herein, written by an approved surety authorized and duly licensed to conduct business in the State of Texas. The cost of said maintenance bond shall be included in the Contractor's unit bid prices and shall be paid by the Contractor.

14.5 SEVERABILITY

14.5.1 The provisions of this Contract are herein declared to be severable; in the event that any term, provision or part hereof is determined to be invalid, void or unenforceable, such determination shall not affect the validity or enforceability of the remaining terms, provisions and parts, and this Contract shall be read as if the invalid, void or unenforceable portion had not be included herein.

14.6 AMENDMENTS

14.6.1 This Contract may be amended by the parties only by a written agreement duly executed by both parties. The failure of the Owner to object to any nonperformance or nonconforming work or to enforce any provision hereof shall in no event be regarded as or construed to be a waiver, release or modification of any term or provision in this Contract, nor shall such failure to object or enforce stop the Owner from insisting on strict compliance with this Contract or from recovering damages, costs or expenses arising as a result of such nonperformance or nonconforming work.

14.7 NOTICES

14.6.1 All notices required by this Contract shall be presumed received when deposited in the mail properly addressed to the other party or Architect at the address set forth herein or set forth in a written designation of change of address delivered to all parties and the Architect.

EXECUTED in single or multiple originals, this 10th day of December, 2012.

CITY OF LANCASTER

Northstar Construction Inc.

Opal Mauldin-Robertson, City Manager

Type/Print Name and Title

ATTEST:

3210 Joyce Drive
Fort Worth, TX 76116

Dolle K. Downe, City Secretary

City of Lancaster, Texas (Purchasing) Supplier Response

Bid Information

Bid Creator Dawn Berry Purchasing Agent
Email dberry@lanaster-tx.com
Phone (972) 218-1329
Fax (972) 218-3621

Bid Number 2011-13 Addendum 2
Title Lancaster Community Park Amphitheater

Bid Type ITB
Issue Date 11/08/2010
Close Date 1/11/2011 2:00:00 PM CST
Need by Date

Contact Information

Address PO Box 940

Contact Dawn Berry
Purchasing Agent

Department
Building

Floor/Room

Telephone (972) 218-1329
Fax (972) 218-3621
Email dberry@lanaster-tx.com

Ship to Information

Address Community Park
2000 N. Dallas Avenue
Lancaster, TX 75134

Contact
Recreation

Department
Building

Floor/Room

Telephone

Fax

Email

Supplier Information

Company Northstar Construction, Inc.
Address 3210 Joyce Dr.

Fort Worth, TX 76116
Contact Luke Heimlich

Department
Building

Floor/Room

Telephone 1 (817) 244-8885
Fax 1 (817) 244-8886
Email

Submitted 1/11/2011 1:48:02 PM CST
Total \$384,700.00

Signature _____

Supplier Notes

Bid Notes

Although we are legally required to accept paper bids, we strongly request that bidders submit this bid electronically. Please feel free to call us if you require any assistance with the submittal. Detailed instructions can be found on our website at www.lancaster-tx.com/bids. Electronic bidding will eliminate errors, eliminate unnecessary work, and is more friendly to the environment. Your cooperation is appreciated.

Bid Messages

Date	Subject	Message
12/01/10	Reminder	A pre-bid meeting will be held tomorrow at 9:00 AM - 1700 Veteran's Memorial Pkwy. Lancaster, TX 75134.
12/10/10	Question 1	Who is to provide testing the City or Contractor? a. Testing assignments are covered in the specifications under Section 013300.

#	Name	Note	Response
1	Addendum 1	Addendum 1 includes revised drawings and updated specifications (see attachments). Bid line items have been updated to reflect the changes.	(No Response Required)
2	Addendum 1 Acknowledgment	I have read and understand addendum 1.	Agreed
3	Addendum 2	Addendum 2 has been issued to clarify an electrical issue on sheet E1.01.	(No Response Required)
4	Addendum 2 Acknowledgment	I have read and understand addendum 2.	agreed
5	Bid Notes	All questions shall be addressed to Dawn Berry, Purchasing Agent through the electronic procurement system.	(No Response Required)
6	Execution of Contract	Within ten (10) days after acceptance of this Proposal, the undersigned will execute the formal contract and will deliver an approved Surety Bond and such other bonds as required by the Contract Documents for the faithful performance of the Contract. The attached bid security in the amount of 5% is to become the property of the Owner in the event the contract and bond(s) are not executed and delivered within the time above set forth as liquidated damages for the delay and additional work caused thereby.	(No Response Required)
7	Substantial Completion of Work	The bidder agrees to begin construction within ten (10) calendar days after the issuance of the Notice to Proceed with Construction (Work Order), and achieve substantial completion within forty five (45) calendar days after receipt of said notice. Certificate of Acceptance for final completion must be obtained within ninety (90) calendar days after receipt of said notice.	(No Response Required)
8	T&C Acknowledgement	I have read and agree to the terms and conditions of this bid.	Agreed
9	Change Orders	No oral statement of any person shall modify or otherwise change, or affect the terms, conditions, or specifications stated in the resulting contract. All change orders to the contract will be made in writing by the city of Lancaster.	(No Response Required)
10	Bid Acknowledgement	Bidder affirms that they have read and understand all requirements of this proposal. Additionally, the bidder affirms that they are duly authorized to execute this contract and that this company has not prepared this proposal in collusion with any other proposer, and that the contents of this proposal as to prices, terms or conditions of said proposal have not been communicated by the bidder nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this type of business prior to the official opening of this proposal.	Agreed
11	Insurance	Vendor shall provide insurance as listed in the insurance requirements attached.	Understood

21	ROW Permit	The awarded vendor will be required to obtain an ROW permit. Fees are waived for the excavation permit. Permit information can be obtained at at www.lancaster-tx.com or at Public Works Administration. <BLOCKQUOTE>1425 N. Dallas Avenue Lancaster, TX 75134 Hours of operation M-F 8:00 AM - 5:00 PM.	Understood
22	Reciprocal Information 1	The City of Lancaster, as a governmental agency of the State of Texas, may not award a contract for general construction, improvements, services or public works projects or purchases of supplies, materials, or equipment to a non-resident bidder unless the non-resident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a non-resident bidder to obtain a comparable contract in the state in which the non-resident's principal place of business is located (Article 601g v.t.c.s.). Bidder shall answer all the following questions by enclosing the appropriate response or completing the blank provided. <p>*Where is your principal place of business?	Texas
23	Permits	The awarded vendor will be required to obtain all required permits. Permit fees are waived for all City Projects. Permit information can be obtained at at www.lancaster-tx.com or at Building Inspection. <BLOCKQUOTE>700 E. Main Street Lancaster, TX 75146 Hours of operation M-Th 7:00 AM - 5:30 PM.	Understood
24	Reciprocal Information 2	For Businesses not located in Texas, does your state favor resident bidders (bidders in your state) by some dollar increment or percentage?	N/A
25	Reciprocal Information 3	If Yes, What is the dollar increment or percentage?	N/A
26	Completion Date	Please list the number of days to complete this project.	90 Calendar Days
27	County	What county is your principal place of business located?	Tarrant County
28	Laws & Ordinances	The Contractor shall at all times observe and comply with all Federal, State, and local laws, ordinances and regulations which in any manner affect the Contract or the work.	(No Response Required)
29	Payment Terms	1. The City of Lancaster's payment terms are Net 30.	(No Response Required)
30	Work Hours	Working hours are not to begin prior to 7:00 AM or extend past 5:00 PM without prior written approval.	(No Response Required)
31	Road and Lane Closures	Road or lane closures must be approved in writing at least 48 hours prior to closing by the City Engineer.	(No Response Required)
32	Company Ownership	Is your company currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, please explain the impact both in organizational and directional terms.	No
33	Financial Rating	Provide a financial rating of your company and any documentation (e.g. a Dunn & Bradstreet analysis/number), which indicates the financial stability of the company.	Please see attached Financial Statement

43	Conflict of Interest 2	Please provide the name of each employee, official, or contractor of the City of Lancaster who makes purchasing decisions or recommendations regarding the use of funds of the City or corporations listed above and describe the business relationship with your firm.	N/A
44	Conflict of Interest 3	3. Name of City of Lancaster officer with whom the vendor/business has affiliation or business relationship.	N/A
45	Conflict of Interest 3A	Is the City of Lancaster employee or officer named in this section receiving or likely to receive taxable income from the filer of the questionnaire?	No
46	Conflict of Interest 3B	Is the filer of the questionnaire receiving or likely to receive taxable income from or at the direction of the City of Lancaster officer named in this section and the taxable income is not from the City of Lancaster?	No
47	Conflict of Interest 3C	Is the filer of this questionnaire affiliated with a corporation or other business entity that the City of Lancaster employee or officer serves as an officer or director, or hold an ownership of 10 percent or more?	No
48	Conflict of Interest 3D	Describe each affiliation or business relationship.	N/A
49	Website Address	Enter product website information	www.northstar93.com
50	MWBE 1	Is your company M/WBE or HUB certified?	No
51	MWBE 2	If yes, what is your certification number?	
52	MWBE 3	If yes, what agency completed the certification?	
53	MWBE 4	If yes, what is the expiration date of your certification?	
54	Notification	How did you hear about this bid opportunity?	Plan
55	Plan Room - Other	If yes for a plan room or other, please list which plan room or other means of notification.	CDC
56	W9 1	Enter the name as shown on your tax return.	Northstar Construction Incorporated
57	W9 2 Business Name	Enter your business name (DBA) if different from the above.	Northstar Construction Incorporated
58	W9 3	Please select company type.	Corp
59	W9 4	Please list the W9 address.	3210 Joyce Drive, Fort Worth, Texas 76116
60	W9 5	Enter your TIN. The TIN provided must match the name on your invoice. For individuals, this is your social security number (SSN). For other entities, it is your employer identification number (EIN).	752483015

Line Items

#	Qty	UOM	Description	Response
1	1	Each	TOTAL FOR ITEMS 1-25 - BASE BID - SITE PLAN	\$239,782.00

Item Notes:

Supplier Notes:

Item Attributes: Please review the following and respond where necessary

#	Name	Note	Response
1	COMMENTS / EXCEPTIONS	PLEASE LIST ANY COMMENTS OR EXCEPTIONS TO THE BASE BID HERE.	

Package Line Items: If responding to this package, all line items in the package are required

#	Qty	UOM	Description	Response
1.1	1	LS	MOBILIZATION	23,000.00

Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.2	1	LS	SWPPP DESIGN AND MAINTENANCE	3,000.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.3	1	EA	TEMPORARY SIGN	500.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.4	1	LS	SITE DEMOLITION	15,000.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.5	1,000	LF	EROSION CONTROL	2.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.6	20	EA	TREE TRANSPLANTING	340.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.15	13,790	SF	DECOMPOSED GRANITE	2.70
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.16	4	EA	SUNPORTS PAVILION FOOTINGS	1,000.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.17	25	LF	CONCRETE RETAINING WALL "A"	190.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.18	8	LF	CONCRETE RETAINING WALL "B"	135.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.19	273	LF	CONCRETE TERRACE WALLS	60.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.20	1	EA	STAGE EQUIPMENT ENCLOSURE	3,500.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.21	1	EA	TRANSFORMER TA ENCLOSURE	3,200.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

1.22	6	EA	LIGHT POLE FOUNDATIONS	650.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE IN PLACE

Supplier
Notes:

2.3	1	LS	VENDOR RECEPTACLES INCLUDING BRANCH CIRCUITS TO PANEL "A". TESTED AND FULLY FUNCTIONAL.	10,000.00
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Item Notes: AS SHOWN AND SPECIFIED - COMPLETE AND IN PLACE.

Supplier
Notes:

2.4	1	LS	PEDESTRIAN TRAIL LIGHTING INCLUDING BRANCH CIRCUITS TO PANEL "A" AND CONTROLS TESTED AS THE FULLY FUNCTIONAL SYSTEM SPECIFIED.	26,000.00
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Item Notes: AS SHOWN AND SPECIFIED - COMPLETE AND IN PLACE.

Supplier
Notes:

2.5	1	LS	COMPANY SWITCH FOR STAGE POWER INCLUDING FEEDER, EQUIPMENT CABINET AND INSTALLATION.	15,000.00
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Item Notes: AS SHOWN AND SPECIFIED - COMPLETE AND IN PLACE.

Supplier
Notes:

3	1	Each	TOTAL FOR LANDSCAPE PLAN	\$27,077.00
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Item Notes:

Supplier Notes:

Item Attributes: Please review the following and respond where necessary

#	Name	Note	Response
1	COMMENTS / EXCEPTIONS	PLEASE LIST ANY COMMENTS OR EXCEPTIONS FOR LANDSCAPING HERE.	

Package Line Items: If responding to this package, all line items in the package are required

#	Qty	UOM	Description	Response
3.1	86,850	SF	BERMUDA HYDROMULCH	0.08

Item Notes: AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE.

Supplier
Notes:

3.2	20,820	SF	BUFFALO HYDROMULCH	0.10
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE.

Supplier
Notes:

3.3	426	EA	1 GAL GULF MUHLY GRASS	9.50
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE.

Supplier
Notes:

5.3	5	EA	TRASH RECEPTACLE	0.00
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Item Notes: AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE.

Supplier

Notes:

Response Total:	\$384,700.00
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GENERAL SPECIFICATIONS

Working Hours

Working hours are not to begin prior to 7:00 a.m. or extend past 4:00 PM.

SITE INVESTIGATION & EXISTING UTILITIES:

The Contractor shall carefully examine the site and satisfy himself about all conditions, which can in any way affect the work or the cost thereof.

SPECIFICATIONS:

All construction must comply with current City of Lancaster standards and specifications and the North Central Texas Council of Government Standard Specifications with the Lancaster amendments.

PROPOSAL:

The prices bid in the proposal shall be full compensation for all material, labor, superintendence, equipment and incidental items required to complete the project ready for use. The cost of all material, labor, superintendence, equipment and incidental work required to complete the project ready for use must be included in the unit or lump sum prices for the bid items provided in the proposal, and no direct compensation will be made for any other work. In case of error, ambiguity, or lack of clearness the Owner reserves the right to consider the bid in the manner that is most advantageous to the Owner.

ADDENDA:

Bidders desiring further information, or interpretation of the plans or specifications, must make request for such information in writing to the Purchasing Agent, prior to 48 hours before the bid opening. Answers to all such Addenda will be bound with and made a part of the Contract Documents. No other explanation or interpretation will be considered official or binding. Should a bidder find discrepancies in or omissions from the plans, specifications, or other contract documents, or should he be in doubt as to their meaning, he should at once notify the Engineer in order that a Written Addendum may be sent to all bidders. Any Addenda issued prior to 24 hours of the opening of bids will be mailed or delivered to each Contractor contemplating the submission of a proposal on this work. The proposal as submitted by the Contractor is to include any Addenda if such are issued by the Engineer prior to 24 hours of the opening of bids. Verbal changes in the work, made prior to submission of bids will not be binding.

SPECIFICATIONS/CONTRACT DOCUMENTS:

Titles to divisions and paragraphs in these Contract Documents are introduced merely for convenience and are not to be taken as part of the Specifications and are, furthermore, not to be taken as a correct and complete segregation of the several units of material and labor. No responsibility, either direct or implied, is assumed by the Engineer/Owner for omissions or duplications by the Contractor or his Sub-Contractor, due to real or alleged error in arrangement of matter in these Contract Documents.

CONFLICTS BETWEEN SPECIFICATIONS AND PROPOSAL:

In the event of conflicts between methods of measurement and payments for the various items of work between the Proposal and the Specifications, the Proposal shall prevail.

CLEAN-UP:

The Contractor shall, at all times, keep the site free from accumulation of waste material, debris, or rubbish caused by his employees or work. At the completion of the work, he shall remove from

site all his tools, surplus materials, debris, and shall leave the site and his work "broom clean", or its equivalent at his expense, unless otherwise noted on the drawings or specified herein.

TESTING:

Testing will be done as outlined by the plans and specifications and/or the North Central Texas Council of Government Standard Specifications for Public Works Construction as adopted by the City of Lancaster.

BARRICADES, WARNING AND DETOUR SIGNS:

The contractor shall not close a street to traffic or interfere with traffic movement on a street without first notifying the City Engineer and securing permission to do so. When any street or any section of a street is closed, or traffic flow is restricted, the Contractor shall furnish and maintain barricades, warning and directing signs, lights and red flags along the entire street within the limits of the project in accordance with the Texas Manual of Uniform Traffic Control Devices. All lights shall be kept burning between the hours of sunset and sunrise.

All expense incurred for furnishing and maintaining flagmen, barricades, warning and directing signs, flags and lights and any incidentals necessary for the proper direction, safety and convenience of traffic during the contract period shall be borne by the Contractor.

Flagmen shall be provided when deemed necessary by the Director of Public Works or his representative.

PRE-CONSTRUCTION CONFERENCE:

A pre-construction conference will be scheduled with awarded vendor within ten (10) of receipt of the notice to proceed. Work should not be started prior to this meeting.

All public utility companies, contractors and sub-contractors, along with any and all Municipal Departments will be in attendance so that work coordination will occur. Contractor will submit sequence of work for the project at this time.

SANITARY FACILITIES:

The Contractor shall build and maintain sanitary facilities at a location satisfactory to the Owner, for use by the employees of the Contractor, and by the Engineer. They shall be well ventilated, but provide concealment, and shall be kept scrupulously clean at all times by the Contractor. The facilities shall be removed and the site restored to its original condition upon completion of the work. All such facilities shall conform to the requirements of State and local health authorities, ordinances and laws.

"Porta Can" or other similar facilities, which may be rented from commercial concerns, will be acceptable.

CONSTRUCTION WATER:

Vendors are required to submit an application/deposit for use of City water with the Utility Billing department, prior to starting work.

The Contractor shall not operate any fire hydrants without the knowledge and permission of the City or their representative. The Contractor will not operate any existing valves in the City of Lancaster.

AS BUILT PLANS:

The Contractor will be furnished one set of plans on which he shall indicate all changes made during construction. All notes and comments necessary to give a clear conception of exactly how all items were constructed including location shall be shown. This set of plans shall be reviewed with the Engineer/Owners representative at the completion of the project. The Engineer will make changes to the plans (if any) and then submit one blue-line copy (stamped As-Built) to the Owner.

review. If the Owner approves this copy, then the Engineer shall submit one (1) full size set of mylars stamped As-Built plans along with a copy of the drawings in a DWG or DGN format and one set of drawings in a PDF format to the City Engineer.

GRASS WORK:

All areas disturbed during construction will be seeded or sodded. Any of these areas located within an existing residential neighborhood will be sodded with the same type of grass that was existing before construction began. Sodding, seeding and fertilizing shall be done in accordance with the North Central Texas Council of Governments Standard Specifications for Public Works Construction.

Seeded and sodded areas shall be fertilized with a 16-8-8 (N-P-K) meeting the requirements of the NCTCOG specifications. Application rate of fertilizer shall be as recommended by manufacturer of fertilizer.

The Contractor shall maintain sodded and seeded areas for a two (2) month period following planting or until the grass has an established minimum height of two inches.

No direct payment will be made for sodding, seeding, fertilizer or for water required by the specifications, unless shown on the plans and/or specifications.

HOLD HARMLESS AGREEMENT:

Prior to any commencing work or storing materials on private property, the Contractor shall arrange for permission to do the work or storage from each property owner. The Contractor shall be responsible for obtaining a "Hold Harmless Agreement" for the City with each property owner. This should be in writing and one copy given to the City for their files.

EXCAVATION:

No classification will be made for any materials to be excavated under this contract, regardless of the type of material encountered or the methods and equipment required to complete the excavation. No extra compensation will be allowed for encountering different types of material on this project.

The estimated quantities of excavation and fill are shown on the drawing and/or the proposal. Payment for excavation, loading, hauling, sprinkling, manipulation and compacting this material will be bid in accordance with the proposal.

All fill embankment shall be compacted to not less than 95% of test method Tex 113E at optimum moisture content (plus four points).

Any trench under existing or proposed roadways and/or alley sections will be either sand backfilled up to within two (2) feet of the top of the subgrade and the remaining two (2) feet will be compacted to 95% of test method Tex 113E in one (1) foot lifts at optimum moisture content (plus four points) using the native material, if suitable, or the entire trench will be compacted to 95% of test method Tex 113E in one (1) foot lifts at optimum moisture content (plus four points) using the native material.

The excess excavation material resulting in this project shall be disposed of by the Contractor (at his expense) at sites approved by the City.

CUTTING AND TESTING OF CONCRETE PAVEMENT CORES:

The Contractor shall have a 4 inch diameter core cut and tested by a certified laboratory to determine the thickness of pavement as actually placed. Cores shall be cut after the concrete is a minimum of 28 days old. Cores, as specified or directed, will not be paid for directly but should be considered subsidiary to other bid items unless otherwise shown on the plans and specifications. If the concrete pavement's strength is deficient, then 6 inch core cuts shall be tested according to the City of Lancaster General Design Standards.

RELOCATION OF FIRE HYDRANTS:

All fire hydrants (whether shown on the plans as new, to be relocated, or reset) shall be new fire hydrants. Existing fire hydrants labeled to be relocated or reset shall be salvaged and delivered to the City Service Center.

Relocated fire hydrants are to be paid for per each hydrant to include all incidental items required by the specifications, the relocation on the companion valve, excavation, backfill, additional pipe and fitting, as required.

PAYMENT FOR OVERTIME CHARGES:

The Contractor will be responsible for payment of overtime charges for the Construction Inspector before 7:30 a.m. and after 4:30 p.m. (Monday through Friday) and on Saturdays. The charges will be at a rate of \$47.00 per hour (minimum two (2) hours). This will be paid in full before final acceptance of the project.

REMOVE EXISTING PIPE & DRAINAGE STRUCTURES:

Existing storm drainage pipe removed but no relayed shall become the property of the Contractor and removed from the site by the Contractor unless otherwise shown on the plans. There shall be no separate pay item for removal of any drainage structure or pipe, unless otherwise listed in the proposal.

REPAIR OF UTILITY CUTS:

Where parts of existing pavement must be removed to permit installation of storm sewer and/or other utility lines, the exact limits of such breakouts shall be per the City of Lancaster General Design Standards.

PREPARE RIGHT-OF-WAY:

This item shall consist of preparing right-of-way for construction operations by the removal and disposal of all obstructions from the right-of-way and from designated easements. Such obstructions shall be considered to include remains of houses not completely removed by others, foundations, floor slabs, concrete brick, lumber, plaster, septic tanks, basements, abandoned utility pipes or conduits, underground service station tanks, equipment or other foundations, fences, retaining walls, and other debris.

It is the intent of this specification to provide for the removal and disposal of all obstructions and objectionable materials not specifically provided for elsewhere in the plans and specifications.

SHOP DRAWINGS:

The Contractor shall submit six sets of all shop and/or construction drawings. These shall be approved by the City Engineer prior to any work being undertaken.

WATER JETTING BACKFILL:

All trench backfill that does not require density control shall be water jetted until settlement ceases. Water jetting IS NOT a separate pay item. The cost thereof shall be included in the price bid for pipe complete in place.

The water shall be applied under pressure when jetting backfill. The tank truck hauling the water shall be equipped with a pressure pump capable of delivering water through a two (2") inch pipe at a minimum of thirty (30 p.s.i.) pounds per square inch pressure. All water jetting of backfill will be to the satisfaction of the Director of Public Works or his representative.

CLEARANCE FROM OTHER PIPES:

The following Special Specification as adopted by the TCEQ for Public Wasteworks projects will be complied with on this project.

Location of Mains

When new water mains and new sanitary sewers are installed, they shall be installed no closer to each other than nine feet.

Where this cannot be achieved, the sanitary sewer shall be constructed of pressure type pipe with watertight joints as used in water main construction for the nine foot clearance. Unless sewer manholes are made watertight the edge of the manhole shall be located at least nine feet from the water lines.

When new water mains are installed where existing sanitary sewers are located, and when the requirements, as outlined above, cannot be met because of physical conditions, extra precautions shall be taken by centering the water mains so that the pipe joints are at a maximum distance from the sewer line, by encasing the sewer line with concrete, and by installing the water main above the sewer line whenever possible.

No physical connection shall be made between a drinking water supply, public or private, and the sewer or any appurtenance. Any facilities for permitting discharge of drinking water into the sewer or any appurtenance thereof shall be constructed so as to prevent any possibility of sewage entering the drinking water system.

No sewer lines carrying domestic or industrial wastes shall cross suction mains to pumping equipment. Water lines shall not be installed closer than 10 feet to septic tank drain fields.

PROTECTION OF TREES, PLANTS, AND SOIL:

Any trees or other landscape features scarred or damaged by the Contractor's operations shall be restored or replaced at the Contractor's expense. Trimming or pruning to facilitate the work will be permitted only by experienced workmen in an approved manner. Pruned limbs of 1" (one inch) diameter or larger, shall be thoroughly treated as soon as possible with a tree wound dressing. Contractor is to notify property Owner before pruning begins. The Contractor shall take all precautions required to prevent soil erosion during the construction. If excessive erosion occurs, the Contractor shall take immediate measure to prevent further erosion and restore the disturbed surface with topsoil at completion of the work.

SUBSURFACE EXPLORATION:

Subsurface exploration, to ascertain the nature of the soils at the project site, including the amount of rock, if any, is to be the responsibility of any and all prospective bidders.

Whether prospective bidders perform this subsurface exploration jointly or independently, it shall be left to the discretion of such prospective bidders. Subsurface exploration shall not be attempted without the approval of the Engineer.

Any test hole data supplied by the Owner or Engineer is for information only.

TRAFFIC CONTROL:

Contractor must provide to the office of the Director of Public Works, a traffic control plan complying with the Texas Manual of Uniform Traffic Control Devices, signed and sealed by a Texas Registered Professional Engineer. The traffic control plan must be submitted prior to contractor starting work.

The traffic control devices must be installed in conformance with the submitted traffic control plan before the contractor will be allowed to begin work within City Right-Of-Way.

GENERAL CONDITIONS

1. CONTRACT DOCUMENTS:

It is understood and agreed that the Advertisement for Bids, Instructions to Bidders, Proposal, Proposal Data, Contract Agreement, Owner's Purchase Order, Owner's Resolution, Performance Bond, Payment Bond, Maintenance Bond, General Conditions, Special Conditions, Specifications, Council of Governments Standard Specifications for Public Works, 3rd Edition as amended, Drawings, Addenda, and Change Orders issued by the Owner, specifications, and engineering data furnished by the Contractor and accepted by the Owner, are contract documents. Additionally, any other written instruments, correspondence, etc., bound in the volume of the contract documents at the time of execution by the Owner and Contractor shall be "contract documents" whether specifically designated as such or otherwise.

It is the intent of the contract documents that they be read as a whole and that all portions of the contract be interpreted so as to give meaning to their terms. In the event of any conflict in the contract documents, handwritten provisions shall prevail over typewritten and typewritten provisions shall prevail over preprinted matter. Additionally, the following order of precedence shall govern among the various contract documents, with the first listed having precedence over any documents listed thereafter.

- Scope of Work
- Contract Agreement
- Owners Resolution
- Addenda to Contract Conditions and Specifications "and Plans"
- Special Conditions
- General Conditions
- Technical Specifications
- Contract Conditions
- Contract Drawings
- All other Contract Documents
- General Design Standards
- North Central Texas Council of Governments Standard Specifications for Public Works

The City reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their work, and where required, shall properly connect and coordinate his work with theirs.

1.1 NO PREJUDICE AGAINST OWNER:

It is understood and agreed by Contractor that Owner has independently prepared most of the Contract Documents and Contractor agrees that, notwithstanding any doctrine of law to the contrary, no presumption and/or prejudice against Owner shall be presumed against Owner (nor construed in favor of Contractor) by any court of competent jurisdiction in its interpretation of the Contract Documents.

2. DEFINITIONS:

Words, phrases, or other expressions used in these contract documents shall have meanings as follows:

- a. "Contract", "contract", or "contract documents" shall include the items enumerated above under CONTRACT DOCUMENTS.
- b. "Owner", "Agency", or "Inspector" shall mean the City of Lancaster, named

designated in the Contract Agreement. All notices, letters, and other communication directed to the Owner shall be addressed and delivered to:

City of Lancaster, Purchasing, PO Box 940, Lancaster, Texas 75146

- c. "Contractor" shall mean the corporation, company, partnership, firm, or individual named and designated in the Contract Agreement, who has entered into this contract for the performance of the work covered thereby, and its, his, or their duly authorized representatives or its successors to the contract.
- d. "Subcontractor" shall mean and refer only to a corporation, partnership, or individual having a direct contract with the Contractor for performing work covered by these contract documents, or its successors to the contract.
- e. "Date of contract", or equivalent words, shall mean the date written on the Owner's Resolution, or the Owner's Purchase Order if a Resolution is not required, which shall also be the date written in the first paragraph of the Contract Agreement.
- f. "Day" or "days", unless herein otherwise expressly defined, shall mean a calendar day or days of 24 hours each.
- g. "The work" shall mean the equipment, supplies, materials, labor, and services to be furnished under the contract and the carrying out of all obligations imposed by the contract documents.
- h. "Drawings" or "plans" shall mean all (a) drawings furnished by the Owner or Engineer as a basis for proposals, (b) supplementary drawings furnished by the Owner to clarify and to define in greater detail the intent of the contract drawings and specifications, (c) drawings submitted by the successful bidder with his proposal, provided such drawings are acceptable to the Owner, (d) drawings furnished by the Owner to the Contractor during the progress of the work, and (e) engineering data and drawings submitted by the Contractor during the progress of work.
- i. Whenever in these contract documents the words "as ordered", "as directed", "as required", "as permitted", "as allowed", or words or phrases of like import are used, it shall be understood that the order, direction, requirements, permission, or allowance of the Owner is intended only to the extent of judging compliance with the terms of the contract; none of these terms shall imply that the Owner has any authority or responsibility for supervision of the Contractor's forces or construction operations, such supervision and the sole responsibility therefore being strictly reserved for the Contractor.
- j. Similarly the words "approved", "reasonable", "suitable", "acceptable", "proper", "satisfactory", or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgment of the Owner, to the extent provided in "i" above.
- k. Whenever in these contract documents the expression "it is understood and agreed" or an expression of like import is used, such expression shall mean the mutual understanding and agreement of the parties executing the Contract Agreement.
- l. "Official Acceptance" shall mean the Owner's written acceptance of all work performed under this Contract.

3. CONTRACTOR'S PRELIMINARY OBLIGATION:

It is the responsibility of the bidder to deliver his proposal at the proper time and to the proper place. The proposal shall be delivered in a sealed envelope with the appropriate job name

the outside. The mere fact that a proposal was dispatched by mail, express, or otherwise, will not be considered. **The bidder must have his proposal in the hands of the proper official before closing time. Bids received after the advertised closing time will not be considered and will be returned unopened.**

The Contractor, as successful bidder, shall furnish the required payment, performance and maintenance bond each in the amount of 100% of the contract price, a valid power-of-attorney proving the agent has the authority to execute the bonds for the surety, and certificates of insurance and an executed contract, within (10) days of notice of award. A certified copy of the Board Resolution authorizing said persons to sign and bind the firm must be included with each copy of the Contract. If such Contractor fails to enter into a contract or execute bonds as herein provided, the City may annul the award and award the contract to the bidder whose proposal was next most acceptable and the Contractor shall execute contract and bond as herein provided. The bidder to whom the first award was made shall then forfeit the bid security submitted with his proposal.

The official form of contract will be executed in seven copies. Two executed copies of the contract will be returned to the Contractor after the contracts and bonds have been approved and executed by the Owner. In addition to the two executed copies of the official contract, the Contractor will be furnished without charge three "field copies" of the plans and specifications and contract documents. Additional sets may be obtained from the engineer at the cost of reproduction.

These additional plans are to be stamped approved by the Owner before they can be used on the project.

4. **LEGAL ADDRESSES:**

All notices, letters, and other communications to the Contractor will be mailed or delivered to either the contractor's business address listed in the Proposal or the contractor's office in the vicinity of the work, with delivery to either of these addresses being deemed as delivery to the Contractor. The addresses of the Owner appearing on page 3 are hereby designated as the place to which all notices, letters, and other communication to the Owner shall be mailed or delivered. Either party may change his address at any time by an instrument in writing delivered to the Owner and to the other party.

5. **SCOPE AND INTENT OF CONTRACT DOCUMENTS:**

The specifications are intended to supplement but not necessarily duplicate each other. Any work exhibited in the one and not the other shall be executed as if it had been set forth in both, so that the work will be constructed according to the complete design as determined by the Owner.

Should anything necessary for a clear understanding of the work be omitted from the specifications and drawings, or should the requirements appear to be in conflict, the Contractor shall secure written instructions from the Owner before proceeding with the work affected thereby. It is understood and agreed that the work shall be performed accordingly to the true intent of the contract documents.

Owner disclaims to Contractor any express or implied warranties that the specifications and drawings included in the Contract Documents are accurate and sufficient for purpose of completing the work according to the terms of this Agreement.

6. **INDEPENDENT CONTRACTOR:**

The relationship of the Contractor to the Owner shall be that of an independent Contractor. Owner and Contractor agree that the negotiation, preparation and execution of the Contract Documents were negotiated, prepared, and executed as part of an arms-length transac

and that no duty of good faith and fair dealing exists between Owner and Contractor, now, in the future, nor at any time in the past. The Owner shall not have the right to control the day to day activities of how the Contractor performs the work, being interested only in the results to be achieved.

7. ASSIGNMENT AND SUBCONTRACTING:

The Contractor shall not assign or subcontract the work or any part thereof, without the previous written consent of the Owner, nor shall he assign, by power of attorney or otherwise, any of the money payable under this contract unless written consent of the Owner has been obtained. No right under this contract, nor claim for any money due or to become due hereunder shall be asserted against the Owner, or person acting for the Owner, by reason of any so called assignment of this contract or any part thereof, unless such assignment has been authorized by the written consent of the Owner. In case the Contractor is permitted to assign moneys due or to become due under this contract, the instrument of assignment shall contain a clause subordinating the claim of the assignee to all prior liens for services rendered or materials supplied for the performance of the work.

Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, his subcontract shall be immediately terminated by the Contractor upon notice from the Owner. The Contractor shall be as of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him. Nothing contained in this contract shall create any contractual relationship between any subcontractor and the Owner.

It is the intent of these specifications that the Contractor shall perform the majority of the work with his own forces and under the management of his own organization. Only subcontractors who have been listed in the proposal and who are accepted by the Owner as provided in the General Conditions may subcontract specific portions of the work. All subcontractors shall be directly responsible to the Contractor and shall be under his general supervision. All work performed under subcontracts shall be subject to the same contract provisions as the work performed by the contractor's own forces.

This Contract is considered personal between the Contractor and Owner therefore, any sale of more than 50% ownership of Contractor shall be considered as an assignment.

8. ORAL STATEMENTS:

It is understood and agreed that the written terms and provisions of this agreement shall supersede all oral statements of representatives of the Owner, and oral statements shall not be effective or be construed as being a part of the contract.

9. REFERENCE STANDARDS AND LAWS AND REGULATIONS:

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative standard adopted and published at the date of taking bids, unless specifically stated otherwise.

The Contractor shall keep itself fully informed of, and shall observe and comply with, all laws, ordinances, and regulations which, in any manner, affect those engaged or employed on any work, or the materials and equipment used in any work or in any way affect the performance of any work, and of all orders and decrees of bodies or tribunals having jurisdiction or authority over work performed under the contract. If any discrepancy or inconsistency should be discovered between the contract and any such law, ordinance, regulation, order or decree, the Contractor shall immediately report the same in writing to the Owner. The Contractor shall be responsible for the compliance with the above provisions by subcontractors of all tiers.

Except as otherwise specified, the Contractor shall procure any pay for all permits and inspections and shall furnish any bonds, security or deposits required to permit performance of its work hereunder.

- (a) OSHA: all work and job site conditions shall, at all times, adhere to the requirements of the latest provisions of the Occupational Safety and Health Act.
- (b) REQUIREMENTS AND CODES: Wherever references are made in the contract to requirements or codes in accordance with which work is to be performed or tested, the addition or revision of the requirements or codes current on the date of this contract shall apply, unless otherwise expressly set forth. Unless otherwise specified, reference to such requirements or codes is solely for technical information.

This contract shall be governed by the laws of the State of Texas and by such federal laws as may be applicable.

The parties agree that all claims, disputes, and other matters in question between the Contractor and the Owner arising out of or pertaining to the contract documents or the breach thereof, shall, except as otherwise expressly provided, be decided solely in the Courts of the State of Texas, in the County of Dallas.

Interest, if any, allowable on the claims of either party shall be at the current rate for judgments in the Courts of the State of Texas.

10. CONTRACTOR TO CHECK DRAWINGS AND SCHEDULES:

The Contractor shall check all dimensions, elevations, and quantities indicated on the drawings and schedules furnished to him by the Owner. The Contractor shall notify the Owner of any discrepancy between the drawings and the conditions at the site, or any error or omission in drawings, or in the layout as given by stakes points, or instructions, which he may discover in the course of work. The Contractor will not be allowed to take advantage of any error or omission in the drawings or contract documents. Full instructions will be furnished by the Owner should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

11. FIGURED DIMENSIONS TO GOVERN:

Dimensions and elevations indicated on the drawings shall be accurately followed even though different from scaled measurements. No work indicated on the drawings, the dimensions of which are not indicated, shall be executed until necessary dimensions have been obtained from the Owner.

12. NO WAIVER OF RIGHTS:

Neither the inspection by the Owner or any of their officials, employees, or agents, nor any order by the Owner for payment of money, or any payment for, or acceptance of, the whole or any part of the work by the Owner, nor any extension of time, nor any possession taken by the Owner or its employees, nor any action of the Owner shall operate as a waiver of any provision of this contract, or of any power herein reserved to the Owner, or of any right to damages herein, provided nor shall any waiver of any breach in this contract be held to be a waiver of any other or subsequent breach.

13. CONTRACTOR'S SUPERINTENDENT AND EMPLOYEES:

The Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized, and financed to perform such work.

The Contractor shall act as an independent contractor maintaining complete control over employees and all of its subcontractors. The Contractor shall perform all work in an or

and workmanlike manner, enforce strict discipline and order among its employees and assure strict discipline and order by its subcontractors.

Before starting work, the Contractor shall designate a competent, authorized representative to represent and act with full authority for the contract and shall inform the Owner in writing of the name, address, telephone number (day and night) of such representative, and of any change in such designation. This representative shall have authority to make binding and enforceable decisions in the name of the Contractor and to accept service of all notices which the Owner desires to serve or which are required by this contract to be served on the Contractor. As an alternate, such written notices may be mailed directly to the address of that party shown on the face of the Contract Agreement form. Such representative shall be present or be duly represented at the site of work at all times when work is actually in progress and, during period when work is suspended, arrangements acceptable to the Owner shall be made for any emergency work which may be required. The Contractor's authorized representative shall be supported by competent assistants, as necessary, and the authorized representative and its assistants shall be satisfactory to the Owner. All requirements, instructions, and other communications given to the Contractor's authorized representative by the Owner shall be as binding as if given to the Contractor.

The Contractor shall employ only fully experienced and properly qualified persons to perform any work. The Contractor shall be responsible for maintaining satisfactory conduct of its employees. The Contractor's site representative shall stay on the project until final completion of the work in accordance with the contract documents.

14. ENGINEERING INSPECTION:

The Owner may appoint such inspectors, as the Owner deems proper to inspect the materials furnished and the work performed for compliance with the drawings and specifications. The Contractor shall furnish all reasonable assistance required by the Owner, or inspectors, for the proper inspection of the work. Should the Contractor object to any interpretation of the contract by any inspector, the Contractor may make written appeal to the Owner for a decision, but the Owner's decision shall be final.

Inspectors shall have the authority to reject work, which is unsatisfactory, faulty, or defective or does not conform to the requirements of the drawings and specifications. Inspection shall not relieve the Contractor from any obligation to construct the work strictly in accordance with the drawings and specifications. Work not so constructed shall be removed and replaced by the Contractor at his own expense.

15. RIGHT OF OWNER TO TERMINATE CONTRACT:

If the work to be done under this contract is abandoned by the Contractor; or if this contract is assigned by him without the written consent of the Owner; or if the Contractor is adjudged bankrupt, or files for voluntary bankruptcy; or if a general assignment of his assets is made for the benefit of his creditors; or if a receiver is appointed for the Contractor of any of his property or if at any time in writing to the Owner determines that the performance of the work under this contract is being unnecessarily delayed, that the Contractor is violating any of the conditions of this contract, or that he is executing the same in bad faith or otherwise not in accordance with the terms of said contract; or if the work is not substantially completed within the time named for its completion or within the time to which such completion date may be extended; then the Owner may serve written notice upon the Contractor and his surety of the Owner's intention to terminate this contract. Unless within five (5) days after the serving of such notice, a satisfactory arrangement is made for continuance, this contract shall terminate. In the event of such termination, the surety shall have the right to take over and complete the work, provided that if the surety does not commence performance within 30 days, the Owner may take and prosecute the work to completion, by contract or otherwise. The Contractor and his

shall be liable to the Owner for all excess cost sustained by the Owner by reason of such prosecution and completion. The Owner may take possession of, and utilize in completing the work, all materials, equipment, tools, and plant on the site of the work, including such materials, etc., as may have been placed on the site by or at the direction of the Contractor.

The Owner may, at its option, terminate the performance of the work in accordance with this section, in whole, or from time to time in part, at any time by written notice thereof the Contractor, whether or not the Contractor is in default. Upon any such termination, Contractor shall waive any claims for damages, including loss of anticipated profits, on account thereof, but as the sole right and remedy of the Contractor, the Owner shall pay Contractor in accordance with subparagraph (b) below, provided, however, that those provisions of the contract documents which by their very nature survive final acceptance under the contract documents shall remain in full force and effect after such termination.

- (a) Upon receipt of any such notice, the Contractor shall, unless the notice requires otherwise:
 - (1) Immediately discontinue work on the date and to the extent specified in the notice;
 - (2) Place no further order or subcontracts for materials, services, or facilities, other than as may be necessary or required for completion of work under the contract that is not terminated;
 - (3) Promptly make every reasonable effort to obtain cancellation upon terms satisfactory to the Owner of all order and subcontracts to the extent they relate to the performance of work terminated, or assign to the Owner those orders and subcontracts, and revoke agreements specified in such notice; and
 - (4) Assist the Owner, as specifically requested in writing, in the maintenance, protection and disposition of property acquired by the Owner under the contract.
- (b) Upon any such termination, the Owner will pay the Contractor an amount determined in accordance with the following (without duplication of any item):
 - (1) All amounts due and not previously paid to the Contractor for work completed in accordance with the contract prior to such notice, and for work thereafter completed as specified in such notice;
 - (2) The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as provided in subparagraph (a) (3) above;
 - (3) The reasonable cost incurred pursuant to subparagraph (a) (4) above;
 - (4) Any other reasonable costs incidental to such termination of work.

The foregoing amounts will include a reasonable sum, under all of the circumstances, as profit for all work satisfactorily performed by the Contractor.

15.1 TERMINATION FOR CONVENIENCE:

Owner hereby reserves the right to terminate this Agreement without regard to fault or breach upon written notice to Contractor, effective immediately unless otherwise provided in said notice to Contractor, effective immediately unless otherwise provided in said notice. In the event of such termination, Owner shall pay as the sole amount due to Contractor in connection with the work (i) all sums due for Work performed to date including allowing profit and overhead (except retainage sums shall not be paid prior to thirty (30) days following the date of termination); and (ii) reasonable cost of termination. Such sums will be due and payable on the same conditions as set forth in this Agreement for final payment to the extent applicable. Upon receipt of such payment, the parties hereto shall have no further obligations to

other except for Contractor's obligations to perform corrective and/or warranty work and to indemnify Owner as provided for in this Agreement. It is understood and agreed that no profit, fee or other compensation shall be due or payable for unperformed work. Contractor agrees that each subcontract and purchase order issued by it will reserve for Contractor the same right of termination provided by this Section 15.1 and Contractor further agrees to require that comparable provisions be included in all lower tier subcontracts and purchase orders.

Upon a determination by any court or body that termination of Contractor, or its successor in interest, was wrongful, such termination will be deemed converted to a termination for convenience and Contractor's remedy for wrongful termination is limited to the recovery of the payments permitted for termination for convenience as set forth above.

The rights and remedies of Owner and Contractor under this Agreement shall be non-exclusive, and shall be in addition to all the other remedies available to such parties at law or in equity, subject, however, in the case of Contractor, to the limitation contained above and other pertinent provisions of this Agreement.

16. EQUAL OPPORTUNITY:

The Contractor is aware of, and is fully informed of, the Contractor's obligations under Executive Order 11246, and, where applicable, shall comply with the requirements of such order and all orders, rules and regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR Section 60-1.4, and the clause therein entitled "Equal Opportunity Clause" which, by this reference, is incorporated herein.

The Contractor is aware of, and is fully informed of, the Contractor's responsibilities under Executive Order No. 11701, "List of Job Openings for Veterans" and, where applicable, shall comply with the requirements of such order, and all orders, rules and regulations promulgated thereunder unless exempted therefrom.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR 60-250 et seq. and the clause therein entitled "Affirmative Action Obligations of the Contractors and Subcontractors for Disabled Veterans and Veterans of the Vietnam Era" which, by this reference is incorporated herein.

The Contractor certifies those segregated facilities, including, but not limited to, washrooms, work areas, locker rooms, are not, and will not, be maintained or provided for the Contractor's employees. Where applicable, the Contractor shall obtain similar certification from any of its subcontractors, vendors, or suppliers performing work under this contract.

The Contractor is aware of, and is fully informed of, the Contractor's responsibilities under the Rehabilitation Act of 1973, and, where applicable, shall comply with the provisions of the Act, and the regulations promulgated thereunder unless exempted there from.

Without limitation of the foregoing, the Contractor's attention is directed to 41 CFR Section 60-741 and the clause entitled "Affirmative Action Obligations of the Contractors and Subcontractors for Handicapped Workers" which, by this reference, is incorporated herein. Contractor must also comply with the rules and regulations as established by the Americans with Disabilities Act of 1990.

17. BEGINNING, PROGRESS, AND COMPLETION OF THE WORK; LIQUIDATED DAMAGES:

The time of completion is of the essence of this contract. Unless otherwise specified in these contract documents or advised by written order of the Owner, the Contractor shall begin work within 10 days after the date of contract.

The Owner and Contractor, recognizing that calculation of damages caused by Contractor's failure to complete within the contract time are difficult to assess, hereby agree that liquidated damages shall be assessed Contractor at the rate of \$120.00 per calendar day for each day Contractor is late in completing.

It is understood that the foregoing constitutes an agreement as to minimum amount of damages only for failure to complete the work within the specified time. Should the Owner suffer damages over and above the amount specified above for any failure or negligence on the Contractor's part, other than failure to complete the work within the specified time, the Owner may recover such additional amount.

A detailed construction schedule and monthly payment schedule shall be prepared by the Contractor and submitted to the Owner for review within ten (10) days of the effective beginning date of the Contract, or prior to the commencement of construction, whichever occurs first. The schedule shall contain the various activities required to perform the work and the dates the activities will be started and completed in order to complete the work in accordance with the specified schedule requirements. The Contractor is responsible for determining the sequence and time estimates of the detailed construction activities. However, the Owner reserves the right to require the Contractor to modify any portion of the schedule the Owner determines to be impractical or unreasonable; as required to coordinate the Contractor's activities with those of other Contractors, if any, engaged in work for the Owner on the site; to avoid undue interference with the Owner's operations; and to assure completion of the work by the date or dates stipulated. Upon acceptance by the Owner of the Contractor's detailed construction schedule, the Contractor will be responsible for maintaining such schedule.

If at any time the Contractor's work is behind schedule, he shall immediately put into effect definite procedures for getting the work back on schedule. The procedures shall be subject to review and modification by the Owner. The Contractor will not be allowed extra compensation for costs (whether for costs for materials used and/or labor to be paid) incurred by him because of Contractor's accelerated operations required to maintain the schedule.

17.1 EXTENSION OF TIME FOR DELAY:

In the event the progress of the work is delayed or interrupted by occurrences or events which entitle Contractor to an extension of time pursuant to the terms of this Agreement, then the work completion date shall be extended for a period equal to the length of such delay if within seven (7) days after the commencement of any such delay, contractor delivers to Owner a written notice of such delay stating the nature thereof and within seven (7) days following the expiration of any such delay provides a written request for extension of the work completion date by reason of such delay and such request is approved by Owner, which approval shall not be unreasonably withheld. Failure to deliver any such notice or request within the required period shall constitute an irrevocable waiver of any extension of the previously scheduled work completion date by reason of the cause in respect of which such notice and request were required to make only one such request with respect thereto. No extension of the previously scheduled work completion date (or right on the part of Contractor to secure any such extension) pursuant to this Section shall prejudice any right Owner may have under this Agreement, or otherwise, to terminate this Agreement.

Extension of time shall be Contractor's sole remedy for any such delay (except for Contractor's right to terminate this Agreement pursuant to the terms and provisions hereinafter set forth), unless the same shall have been caused by acts constituting intentional interference by Owner with Contractor's performance of the work and where to the extent that such acts continue after Contractor's notice to Owner of such interference. Owner's exercise of any of its rights to order changes in the work pursuant to this contract, regardless of the extent of number of

changes, or Owner's exercise of any of its remedies of suspension of the work, or requirement or correction or re-execution of any defective work, shall not under any circumstances be construed as intentional interference with Contractor's performance of the work.

18. HINDRANCES AND DELAYS:

The Contractor expressly agrees that the period of time named in Part 1 of the specifications to complete all work includes allowance for all hindrances and delays incident to the work. The Contractor further agrees that no claims shall be made for hindrances and delays from any cause during the performance of the work, except as specifically provided for in the articles SUSPENSION OF WORK and EXTENSIONS OF TIME in these General Conditions.

18.1 RESEQUENCING OR ACCELERATION:

In the event Contractor shall fall behind schedule at any time, for any reason, Owner shall be entitled to direct acceleration or resequencing of the work to bring the work back on schedule. In the event Contractor determines that the previously scheduled work completion date cannot be met by resequencing the work, then Contractor shall immediately provide to Owner, and in any event within seven (7) days after the date of receipt of any request by Owner for resequencing or acceleration, a plan to complete the work in the shortest possible time. No approval by the Owner of any plan for resequencing or acceleration of the work submitted by Contractor pursuant to this paragraph shall constitute a waiver by Owner of any damages or losses which Owner may suffer by reason of such resequencing or the failure of Contractor to meet the declared new scheduled completion date.

Owner shall additionally be entitled to direct the acceleration or resequencing of the work in order to achieve completion prior to the declared new scheduled completion date and Contractor shall be reimbursed by Owner for the amount of labor overtime actually incurred in respect thereto and shall be entitled to an increase adjustment the contract price to the extent of the labor portion of overtime so incurred.

19. SUSPENSION OF WORK:

The Owner reserves the right to suspend and reinstate execution of the whole or any part of the work without invalidating the provisions of the contract. Orders for suspension or reinstatement of work will be issued by the Owner to the Contractor in writing. The time for completion of the work will be extended for a period equal to the time lost by reason of the suspension.

The Owner will pay extra costs and expenses, which are caused by work suspensions ordered by the Owner, to the Contractor.

20. EXTENSIONS OF TIME:

Should the Contractor be delayed in the final completion of the work by any act or neglect of the Owner, or of any employee of either, or by any other Contractor employed by the Owner, or by strike, fire, regulatory agencies or other cause outside of the control of the Contractor and which, in the opinion of the Owner, could have been neither anticipated nor avoided, then an extension of time sufficient to compensate for the delay, as determined by the Owner, will be granted by the Owner; provided that the Contractor gives the Owner notice in writing within 10 days of the cause of delay in each case and demonstrates that he has used all reasonable means to minimize the delay.

Extensions of time will not be granted for delays caused by unfavorable weather, unsuitable ground conditions, inadequate construction force, or the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure delivery when needed.

Failure of Owner furnished equipment and materials to arrive as scheduled, or failure of

construction Contractors to meet their schedule, shall not be justification for an extension of time, except where such failure causes, in the opinion of the Owner, an actual delay in the Contractor's work.

21. EXTRA OR CHANGE ORDER WORK:

If a modification increases the amount of the work, and the added work or any part thereof is a type and character which can properly and fairly be classified under one or more unit price items of the Proposal listed in the Scope of Work section of this contract, then the added work or part thereof shall be paid for according to the amount actually done and at the applicable unit price. Otherwise, such work shall be paid for as hereinafter provided.

Claims for extra work will not be paid unless the work covered by such claims was authorized in writing by the Owner. The Contractor shall not have the right to prosecute or maintain an action in court to recover for extra work unless the claim is based upon a written order from the Owner. Payments for extra work will be based on agreed lump sums or on agreed unit prices as listed in the Scope of Work section of the contract whenever the Owner and the Contractor agree upon such prices before the extra work is started; otherwise, payments for extra work will be based on actual field cost plus the specified percentage allowance.

For the purpose of determining whether proposed extra work will be authorized, or for determining the payment method for extra work, the Contractor shall submit to the Owner, upon request, detailed cost estimate for proposed extra work. The Change Order Request shall indicate itemized quantities and charges for all elements of direct cost. Charges for the Contractor's subcontractor's extra profit, extra general superintendence, extra field office expense, and extra overheads shall be indicated as a percentage addition to the total estimated net cost. Unless otherwise agreed upon by the Contractor and the Owner, such percentage additions shall be 15 percent for the extra work performed by the Contractor's own forces or 20 percent for extra work performed by a subcontractor.

Further, the Change Order Request shall also include a suitable breakdown by trades and work classifications, Contractor's estimate of the changes in the cost of the work attributable to the changes set forth in such Change Order Request, a proposed adjustment to the scheduled completion date resulting from such Change Order Request, and any proposed adjustments of time and costs related to unchanged work resulting from such Change Order Request. If Owner approves in writing such estimate by Contractor, such Change Order Request and such estimate shall constitute a Change Order, and the cost of the contract price and previously scheduled work completion date shall be adjusted as set forth in such estimate. Change Orders shall not cause any modification to Contractor's fee except as specifically set forth herein, it being understood and agreed that Contractor will receive no fee based on the increased cost of the work resulting from Change Orders unless the new work requested is beyond the scope of the work, and then only to the extent thereof pursuant to the terms of this contract. Contractor shall include in each subcontract a limitation on the amount of profit and overhead, which subcontractors can include in Change Orders, which limitation will be subject to the approval of Owner. Agreement on any Change Order shall constitute a final settlement on all items covered therein, subject to performance thereof and payment therefore pursuant to the terms of this Agreement.

When payment for extra work is based on actual field cost, the Contractor will be paid the actual field cost plus an allowance of 15 percent if the extra work is performed by the Contractor's own forces or 20 percent if the extra work is performed by a subcontractor. The allowance will be paid as full compensation for the Contractor's and subcontractors extra profit, extra general superintendence, extra field office expense, extra overheads, and all other elements of extra cost not defined herein as actual field cost.

The actual field cost shall include only those extra costs for labor and materials expend

direct performance of the extra work. The form in which actual field cost records are kept, the construction methods, and the type and quantity of equipment used shall be acceptable to the Owner.

Construction equipment which the Contractor has on the job site and which is of a type and size suitable for use in performing the extra work shall be used. The hourly rental charges for equipment shall not exceed one-half of one percent of the latest applicable Associated Equipment Distributors published monthly rental rates and shall apply to only the actual time the equipment is used in performing the extra work.

When extra work requires the use of equipment, which the Contractor does not have on the job site, the Contractor shall obtain the occurrence of the Owner before renting or otherwise acquiring additional equipment. The rental charges for the additional equipment shall not exceed the latest applicable Associated Equipment Distributors published rental rates.

21.1 DECREASED WORK

If a modification decreases the amount of work to be done, such decrease shall not constitute the basis for a claim for damages or anticipated profits on work affected by such decrease. Where the value of omitted work is not covered by applicable unit prices, the Owner shall determine on an equitable basis the amount of (a) credit due the Owner for contract work not done as a result of an authorized change, (b) allowance to the Contractor for any actual loss incurred in connection with the purchase, delivery, and subsequent disposal of materials or equipment required for use on the work as planned and which could not be used in any part of the work as actually built, and (c) any other adjustment of the contract amount where the method to be used in making such adjustment is not clearly defined in the contract documents.

Unless otherwise agreed upon by the Owner and the Contractor, the credit due the Owner for reductions in the amount of work to be done shall be the estimated field cost of the deleted work plus an overhead allowance of:

Ten percent of the estimated field cost if the work was to have been done by the Contractor's own forces, or;

Fifteen percent of the estimated field cost if the work was to be done by a subcontractor.

Field cost referred to above shall include the category of costs listed as actual field costs, items (a) to (f) inclusive of the article entitled EXTRA WORK.

22. PROTECTION OF WORK AND PROPERTY:

The Contractor shall be responsible for and shall bear any and all risk of loss of, or damage to work in progress, all materials delivered to the site, and all materials, tools, and equipment until completion and final acceptance of the work to be performed under this contract.

The Contractor shall promptly take all precautions which are necessary and adequate against any conditions created during the progress of the Contractor's activities hereunder which involve a risk of bodily harm to persons or a risk of damage to any property. Contractor shall continuously inspect all work, materials and equipment to discover and determine, and shall be solely responsible for discovery, determination and correction of any conditions which involve a risk of bodily harm to persons or damage to property.

The Contractor shall comply with all applicable safety laws, standards, codes and regulations in the jurisdiction where the work is being performed specifically but without limiting the generality of the foregoing and regardless of any exemptions provided by law, with all rules, regulations and standards adopted pursuant to the Occupational Safety and Health

1970.

The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of work which is not to be removed and which does not unreasonably interface with the construction work. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. The Contractor will protect from damage all existing improvements, utilities, roads, and bridges at or near the site of work and will repair or restore any damage to such facilities resulting from failure to comply with the requirements of this contract of the failure to exercise reasonable care in the performance of the work. Under no circumstances will county or township roads and bridges be subject to greater than normal highway truck loadings.

The Contractor shall provide and maintain such temporary work as is required for the protection of the public and those employed in or about the work site, including all signs, guards, barricades, night lights and any other temporary protection as may be necessary. Contractor shall provide and maintain such temporary work as is required for protection of finished work, including building paper, boxing, planking, protective coating, and such other protection as may be deemed necessary by the Owner. All such work shall be returned to original condition by the Contractor on completion of the contract.

Whenever necessary to maintain proper temperatures for performance of work, or to protect or to close in work in place, Contractor shall provide and maintain temporary enclosures as directed by the Owner for all openings or exterior surfaces that are not enclosed with finishing materials.

The Contractor shall protect all the work including buildings, structures, equipment, excavations, trenches, etc. from water damage including damage by rainwater, ground water, backing-up of drains, downspouts of sewers and shall construct and maintain all necessary drainage and do all pumping required to protect or to perform the work. Contractor shall provide protection to any equipment in place, as required to prevent damage by moisture. Contractor, in general, shall at all times carefully protect the work, materials, and equipment against damage from the weather, and comply with the directions of the Owner in order to avoid any adverse effect on the project from weather conditions.

The Contractor assumes all liability for its failure to comply with the provisions of this Article. The Contractor shall include this Article in its entirety in all subcontracts for any work at the project site.

Upon the failure of the Contractor or its subcontractors to comply with any of the requirements of the Article, the Owner shall have the authority to stop any operations of the Contractor or its subcontractors affected by such failure until such failure is remedied. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for increased costs or damages by the Contractor or its subcontractors.

23. **SAFETY:**

The Contractor shall at all times conduct all operations under the Contractor in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall promptly take all precautions, which are necessary and adequate against any conditions, which involve a risk of bodily harm to persons or a risk of damage to any property. The Contractor shall continuously inspect all work, materials and equipment to discover and determine any such conditions and shall be solely responsible for discovery, determination and correction of any such conditions. The Contractor shall designate an employee as safety supervisor who is acceptable to the Owner.

The Contractor shall comply with all applicable laws, regulations and standards. Contractor shall coordinate with other Contractors and subcontractors on safety matters

shall promptly comply with any specific safety directions given to the Contractor by the Owner.

The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazard, promulgating safety regulations and notifying the Owner and users of adjacent properties and utilities.

The Contractor shall maintain a Safety Program with detail commensurate with the work to be performed. Such review shall not relieve the Contractor of its responsibility for safety, nor shall it be construed as limiting in any manner the Contractor's obligation to undertake any action which may be necessary or required to establish and maintain safe working conditions at the site.

The Contractor shall maintain accurate accident and injury reports.

The Contractor shall hold regular scheduled meetings to instruct its personnel on safety practices. The Contractor shall furnish safety equipment and enforce the use of such equipment by its employees.

All equipment furnished and installed on this project shall be manufactured and installed in accordance with the applicable parts of the Williams-Steiger Occupational Safety and Health Act of 1970, and its subsequent amendments and revisions. All work shall be performed in accordance with the regulations and requirements of the above noted Act, revisions and amendments.

24. TAXES, PERMITS AND LICENSES:

The Contractor shall obtain and pay for all licenses, permits, and inspections required for the work.

The Contractor shall pay all appropriate sales taxes, excluding materials permanently retained by the City of Lancaster franchise taxes, income taxes, gross receipts taxes, and other business or occupation taxes imposed upon the Contractor.

25. PATENTS:

Royalties and fees for patents covering materials, articles, apparatus, devices, equipment, or processes used in the work, shall be included in the contract amount. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he shall be liable for any damages or claims for patent infringements. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted against the Owner for alleged infringement of any patents involved in the work and, in case of an award of damages, the Contractor shall pay such award. Final payment to the Contractor by the Owner will not be made while any such suit or claim remains unsettled.

In the event the Contractor is found to have infringed a patent, the Contractor shall either replace the part or process with a non-infringing part or process approved by the Owner, or secure the right to use the infringing part or process. Either choice shall be at the Contractor's expense.

26. MATERIALS AND EQUIPMENT:

Unless specifically provided otherwise in each case, all materials and equipment furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused, and undamaged when installed or otherwise incorporated in the work. No such material or equipment shall be used by the Contractor for any purpose other than that intended or specified, unless such use is specifically authorized by the Owner in each case.

27. GUARANTEE:

Contractor shall guarantee that all products are in accordance with the manufacture's guarantees, warranties, or Policies. Any replacement of defective material or materials will be made in accordance with such guarantee or warranty policies but, in any case, responsibility ends with the replacement of the defective part or parts, and no responsibility will be assumed for unauthorized repair or replacement of said equipment. Nor any expense will be incurred due to failure of said equipment excepting replacement of its defective part or parts by the manufacturer and in accordance with said manufacturer's policies.

Contractors warranty against defects in material and workmanship shall extend two years from the date of final payment.

28. **DEFENSE OF SUITS:**

In case any action in court is brought against the Owner, or any officer or agent of the Owner, for the failure, omission, or neglect of the Contractor to perform any of the covenants, acts, matters, or things by this contract undertaken; or for injury or damage caused by the alleged negligence of the Contractor or his subcontractors or his or their agents, or in connection with any claim based on lawful demands of subcontractors, workmen, materials, or suppliers the Contractor shall indemnify and save harmless the Owner and his officers and agents, from all losses, damages, costs, expenses, judgments, or decrees arising out of such action.

29. **PATENT INDEMNITY:**

The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified. But, if the Contractor has reason to believe that the design, process, or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner.

30. **INDEMNITY AND RELEASE:**

The Contractor is solely responsible for and shall defend, indemnify, and hold Owner (or any of Owner's representatives or employees), free and harmless from and against any and all claims, liabilities, demands, losses, damages, costs or expense to all persons (including but not limited to reasonable attorneys' fees) arising out of resulting from or occurring in connection with the performance of the work that is (i) attributable to any bodily or personal injury, sickness, diseases or death of any person or any damage or injury to or destruction of real or personal property (other than the work itself) including the loss of use thereof, and (ii) caused in whole or in part by any negligent, strict liability or other act or omission of contractor, any subcontractor or supplier, their respective agents or employees or any other party for whom any of them may be liable regardless of whether such is caused in part by the negligent, strict liability or other act or omission of a party or parties indemnified hereunder.

Said indemnity and hold harmless agreement shall also apply to claims arising from accidents to contractor, its agents or employees, whether occasioned by contractor or its employees, the owner or his employees, or by any other person or persons.

The foregoing indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

31. **FINAL PAYMENT AND RELEASE:**

Acceptance by the Contractor of last payment shall be a release to the Owner and every officer and agent thereof, from all claims and liability hereunder for anything done or furnished for, or relating to the work, or for any act or neglect of the Owner or of any person relating

affecting the work.

32. INSPECTION:

The Owner shall have the right, without extra charge therefore; to inspect all materials and equipment supplied under this contract at any time, including the place of manufacture, either during performance of the work, on final inspection, or during any applicable warranty period. The Owner or its designated representative shall have the right to reject equipment, materials and work not complying with the requirements of this contract. The Owner shall notify the Contractor in writing that such equipment, material or work is rejected. Thereupon, rejected work shall be satisfactorily corrected, rejected equipment shall be satisfactorily repaired or replaced with satisfactory equipment, and rejected material shall be satisfactorily replaced with satisfactory material, all in accordance with the contract, and the Contractor shall promptly segregate and remove rejected materials and equipment from the premises. All such correcting, repairing, replacing, and removing shall be by and at the expense of the Contractor.

The Owner will perform inspections in such a manner so as not to delay the work unreasonably, and the Contractor shall perform its work in such a manner as not to delay inspection unreasonably.

33. FINAL INSPECTION:

When the work has been completed and at a time mutually agreeable to the Owner and Contractor, the Owner will make a final inspection of the work as to the acceptability and completeness of the work.

34. CLAIMS FOR LABOR AND MATERIALS:

The Contractor shall pay all subcontractors and other persons furnishing labor or materials for the work from the contract amount. The Contractor is aware of, and is fully informed of the Contractor's responsibility under article 601f V.T.C.S. pertaining to payments for goods and services contracted for by State agencies or political subdivisions, applies to construction contracts. The Contractor shall be responsible for payment to vendors and subcontractors in accordance with Chapter 2251, Texas Government Code. No third party shall have any contractual privity with the Owner. The Contractor shall indemnify and save harmless the Owner from all claims for labor and materials furnished under this contract. When requested by the Owner, the Contractor shall submit satisfactory evidence that all persons, firms, or corporations who have done work or furnished materials under this contract, for which the Owner may become legally liable, have been fully paid or satisfactorily secured. In case such evidence is not furnished or is not satisfactory, an amount will be retained money due the Contractor which in addition to any other sums that may be retained will be sufficient, in the opinion of the Owner, to liquidate all such claims. Such sum will be retained until the claims as aforesaid are fully settled or satisfactorily secured.

Before final acceptance of the work by the Owner, the Contractor shall submit to the Owner in duplicate a notarized affidavit stating that all subcontractors, vendors, persons, or firms who have furnished labor or materials for the work have been fully paid and that all taxes have been paid. A statement from the surety shall also be submitted consenting to the making of the final payment.

35. ESTIMATES AND PAYMENTS:

On or about the first day of each month the Contractor shall make an estimate of the value of the work completed and of unused materials stored on the site. The Contractor and the Owner shall review the estimate prior to submitting the formal invoice to the Owner. The estimated cost of repairing, replacing, or rebuilding any part of the work or replacing ma

which do not conform to the drawings and specifications will be deducted from the estimated value by the Owner.

The Contractor shall furnish to the Owner such detailed information as he may request to aid in the preparation of monthly estimates. After each estimate has been found acceptable, the Owner will process and pay such invoices within 30 days to the Contractor 90% (100% less 10% retainage) of the estimated value less any previous payments. The Contractor shall be responsible for payment to vendors and subcontractors in accordance with article Chapter 2251, Texas Government Code.

Payments for materials stored on the site shall be based only upon the actual costs of such materials to the Contractor and shall not include any overhead or profit to the Contractor.

After official acceptance of the work, the Owner will prepare a final estimate of the work done under this contract. Preparation of the final estimate will not be made until the affidavit and statement required in the article entitled CLAIMS FOR LABOR AND MATERIALS have been received. The Owner will, within 30 days thereafter, pay the entire balance due after deducting all amounts to be retained under any provision of this contract.

Payments to the contractor involving federal funding will require the contractor to submit a copy of the current wage rate for that project with each request for payment.

36.1 PAYMENTS:

Payments may be withheld by Owner for (1) defective work not remedied, (2) claims filed by third parties, (3) failure of the Contractor to make payments properly to subcontractors or for labor, materials or equipment, (4) reasonable evidence that the work cannot be completed for the unpaid balance of the contract price, (5) damage to the Owner or another contractor, (6) reasonable evidence that the work will not be completed by the scheduled work completion date and that the unpaid balance of the contract price would not be adequate to cover actual or liquidated damages for the anticipated delay, (7) persistent failure to carry out the work in accordance with the Contract Documents or (8) statutory retainage as described in Chapter 53 of the Texas Property Code.

37. LIENS:

Neither the Contractor, nor any of his subcontractors, workers or suppliers shall have the right of lien against the work performed under this contract, or any property of the Owner to secure payment for labor and materials.

38. STATE LAW:

This contract is performable in the State of Texas and shall be governed by the laws of the State of Texas. Venue on any suit hereunder shall be in Dallas County, Texas.

INSURANCE REQUIREMENTS - CONSTRUCTION

CONTRACTOR SHALL MAINTAIN INSURANCE

- 1.1 The Contractor at his own expense shall purchase, maintain and keep in force during the life of this contract, adequate insurance that will protect the Contractor and/or any Additional Insured from claims which may arise out of or result from operations under this contract. The insurance required shall provide adequate protections from all claims, whether such operations be by the Contractor or by any Additional Insured or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts of any of them may be liable and from any special hazards, such as blasting, which may be encountered in the performance of this contract in the amounts as shown below in Paragraph 13.2.1.
- 1.2 The Contractor shall not commence work on any Contract in the City of Lancaster until the Contractor has obtained all the insurance required under this paragraph and such insurance has been approved by the City.

TYPES AND AMOUNTS OF INSURANCE

The Contractor shall furnish and maintain during the life of the contract adequate Insurance in such amounts as follows:

<u>Type of Insurance</u>	<u>Amount</u>
a. Worker's Compensation as set forth in the Worker's Compensation Act.	
b. Commercial General Liability	
	\$1,000,000 Each Accident/Occurrence. The policy shall have no coverage removed by exclusions.
	Limit of Insurance per Project or Owner's and Contractor's Protective Liability Insurance for the Project.
c. Automobile Liability	
	\$500,000 Combined single limit per occurrence.
d. Installation Floater	
	This insurance shall protect the Contractor and the Owner from all insurable risks of physical loss or damage to materials and equipment not otherwise covered under builder's risk insurance, while in warehouse or storage areas, during installation, during testing, and after the work is completed. Installation floater insurance shall be of the "all risks" type, with coverage's designed for the circumstances which may occur in the particular work included in this contract. The coverage shall be for an amount not less than the insurable value of the work at completion, less the value of the materials and equipment insured under builder's risk insurance. The value shall include the aggregate value of the Owner furnished equipment and materials to be erected or installed by the Contractor not otherwise insured under builder's risk insurance.
e. Builders Risk	
	This insurance shall be written in completed value form and shall protect the Contractor and the Owner against risks of damage to buildings, structures, and materials and equipment not otherwise covered under installation floater insurance, from the perils of fire and lightning, the perils included in the standard extended coverage endorsement, and the perils of vandalism and malicious mischief. The amount of such insurance shall not be less than the insurable value of the work at completion less the value of the materials and equipment insured under installation floater insurance.

materials and equipment insured under installation floater insurance.

Equipment installed under this contract shall be insured under installation floater insurance when the aggregate value of the equipment exceeds \$10,000.00.

If the work does not include the construction of building structures, builder's risk insurance may be omitted providing the installation floater insurance fully covers all work.

Builder's risk insurance shall provide for losses to be payable to the Contractor and the Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.

1.3 ADDITIONAL INSURED / PROJECT INFORMATION

The Owner shall be named as an additional insured on the Commercial General Liability (Public), Policies furnished by the Contractor.

The project name and bid/contract number shall be listed on the certificate.

1.4 WRITTEN NOTIFICATION

Each insurance policy shall contain a provision requiring that thirty (30) days prior to expiration, cancellation, non-renewal or any material change in coverage, a notice there of shall be given by certified mail to the Purchasing Agent, City of Lancaster, PO Box 940, Lancaster, Texas, 75146.

1.5 PREMIUMS AND ASSESSMENTS

Companies issuing the insurance policies shall have no recourse against the City for payment of any premiums or assessments for any deductibles which are at the sole responsibility and risk of the Contractor.

1.6 CERTIFICATE OF INSURANCE

Proof that the insurance is in force shall be furnished to the City of Lancaster on a Standard Certificate of Insurance Form. In the event any insurance policy shown on the Certificate of Insurance has an expiration date that is prior to the completion and final acceptance of the project by the City of Lancaster, the contractor shall furnish the City proof of identical continued coverage no later than thirty (30) days prior to the expiration date shown on the Certificate of Insurance.

1.7 PRIMARY COVERAGE

The coverage's provided herein shall be primary and noncontributory with any other insurance maintained by the City of Lancaster, Texas, for its benefit, including self insurance.

1.8 WORKER'S COMPENSATION INSURANCE COVERAGE

The Contractor shall:

- 1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
- 2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;
- 3) provide the governmental entity prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;
- 4) obtain from each person providing services on a project, and provide to the governmental entity:

- (A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- 5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - 6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;
 - 7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the Texas Worker's Compensation Commission on the sample notice, without any additional words or changes:

Required Workers' Compensation Coverage

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

and

- (8) contractually require each person with whom it contracts to provide services on a project, to:
 - (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in subsection (e) (3) of this rule;
 - (D) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (E) obtain from each other person with whom it contracts, and provide to the Contractor:

- (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
- (H) contractually require each other person with whom it contracts, to perform as required by sub-paragraphs (A) - (H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

PREVAILING WAGE RATES FOR CONSTRUCTION

The minimum wages to be paid to various classes of laborers and mechanics will be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on the project of a character similar to the contract work in the City of Lancaster.

Prevailing wage rates are determined by Davis-Bacon and other related Acts and may be found in the Code of Federal Regulations 29 CFR 1.5 and are published in the Federal Register. It is the responsibility of the contractor to ensure items bid (wages) in this contract are current to the published rates. See section 36 of the General Conditions for related requirements.

Rate may be viewed at: <http://www.access.gpo.gov/davisbacon/index.html>

- **Select Texas and Dallas County.**

Except for work on legal holidays, the "general prevailing rate of per diem wage" for the various crafts of type of workers of mechanics is the product of (a) the number of hours worked per day, except for overtime hours, times (b) the above respective Rate Per Hour.

For legal holidays, the "general prevailing rate of per diem wage" for the various crafts or type of mechanics is the product of (a) one and one-half times the above respective Rate Per Hour times (b) the number of hours worked on the legal holiday.

The "general prevailing rate for overtime work" for the crafts or type of workers or mechanics is one and one-half times the above the respective Rate Per Hour.

Under the provisions of Chapter 2258 Texas Government Code, the Contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded. Ten Dollars (\$10.00) for each laborer, worker or mechanic employed, for each calendar day, or portion thereof, such laborer, worker or mechanic is paid less than the said stipulated rates for any work under the contract, by him, or by any subcontractor under him.

Under the provisions of Chapter 61 (Payment of Wages) Texas Labor Code, the Contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, Ten Dollars (\$10.00) for each laborer, worker or mechanic employed, for each calendar day, or portion thereof, such laborer, worker or mechanic is paid less than the said stipulated rates for any work under the contract, by him, or by any subcontractor under him.

GENERAL TERMS & CONDITIONS

ACCESSIBILITY

The city of Lancaster Municipal Building is wheelchair accessible. For accommodations or sign interpretive services needed for pre-bid meetings or bid openings, please contact the City Secretary's Office 48 hours in advance at (972) 218-1112.

ADDENDA

Any interpretations, corrections or changes to this invitation to bid and specifications will be made by addenda. Sole issuing authority of addenda shall be vested in the city of Lancaster Purchasing Agent. Addenda will be mailed to all who are known to have received a copy of this bid.

ASSIGNMENT OF BID/CONTRACT

The successful bidder may not assign their rights and duties under and award without the written consent of the City's Purchasing Agent. Such consent shall not relieve the assignor of liability in event of default by their assignee.

AWARD

The City reserves the right to award any combination of the sections as is deemed in the best interest of the City. The City also reserves the right to not award one or all sections.

BID CONSIDERATION / TABULATION

After bids are opened and publicly read, the bids will be tabulated for comparison on the basis of the bid prices and quantities (lowest responsible vendor) or by the best value. Until final award of the Contract, the city reserves the right to reject any or all bids, to waive technicalities, and to re-advertise for new bids, or proposed to do the work otherwise in the best interests of the City.

The following items will be considered when an award is based on best value:

- ☞ The purchase price;
- ☞ The reputation of the bidder and of the bidder's goods or services;
- ☞ The quality of the bidders' goods or services;
- ☞ The extent to which the goods or services meet the municipality's needs;
- ☞ The bidder's past relationship with the municipality;
- ☞ The impact on the ability of the municipality to comply with laws and rules relating to contracting with historically underutilized businesses and nonprofit organizations employing persons with disabilities;
- ☞ The total long-term cost to the municipality to acquire the bidder's goods or services; and
- ☞ Any relevant criteria specifically listed in the request for bids or proposals.

BID SUBMISSION

Any paper submission received after stated due date and time will be returned unopened. If proposals are sent by mail to the Purchasing Agent, the proposer shall be responsible for actual delivery of the proposal to the Purchasing Agent before the advertised date and hour for opening of proposals.

If mail is delayed by the postal service, courier service, or in the internal mail system of the city of Lancaster beyond the date and hour set for the proposal opening, proposals thus delayed will not be considered and will be returned unopened.

BRAND NAMES

If items for which bids have been called for have been identified by a "brand name or equal" description, such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory. Bids offering "equal" products will be considered for award if such products are clearly identified in the bids and are determined by the Purchasing Agent and requesting Department to be equal in all material respects to the brand name products referenced. **Unless the bidder clearly indicates in their bid that they are offering an "equal product", their bid shall be considered as offering a brand name product referenced in the Proposal Schedule.**

CANCELLATION OF BIDS

Bids may be cancelled with 30 days written notice with good cause.

CHANGES OR ALTERATIONS

No part of this bid may be changed/alterd in any way. Vendors must submit written requests to change any specifications/conditions with their proposal. ***Changes made with out submission of a written request to this bid will result in disqualification.***

CONFLICT OF INTEREST

No public official shall have interest in this contract, in accordance with Vernon's Texas Codes Annotated, Local government Code Title 5. Subtitle C, chapter 171.

DEFAULT

In case of default of the successful bidder, the city of Lancaster may procure the articles from other sources and hold the bidder responsible for any excess cost occasioned thereby.

DELIVERY

The City reserves the right to demand bond or penalty to guarantee delivery by the date indicated. If order is given and the Bidder fails to furnish the materials by the guaranteed date, the City reserves the right to cancel the order without liability on its part. All prices are to be F.O.B. Lancaster, Texas all freight prepaid.

DELIVERY DATE

Delivery date is an important factor to the City and may be required to be a part of each bid. The city of Lancaster considers delivery time to be that period elapsing from the time the individual order is placed until that order or work is received by the City at the specified delivery location. Failure of the bidder to meet guaranteed delivery dates or service performance could affect future City orders.

Whenever the Contractor encounters any difficulty which is delaying or threatens to delay timely performance (including actual or potential labor disputes), the Contractor shall immediately give notice thereof in writing to the Purchasing Agent, stating all relevant information. Such notice shall not in any way constitute a basis for an extension of the delivery or performance schedule or be construed as a waiver by the City of any rights or remedies to which it is entitled by law or pursuant to provisions herein. If the delay is unforeseen, the city has the right to extend delivery time if reason appears valid. Failure to give such notice, however, may be grounds for denial of any request for an extension of the delivery or performance schedule because of such delivery.

DISCRIMINATION

The undersigned, in submitting this proposal, represents that they are an equal opportunity employer, and will not discriminate with regard to race, religion, color, national origin, age or sex in the performance of this contract.

ETHICS

The bidder shall not offer or accept gifts of any value nor enter into any business arrangement with any employee, official or agent of the city of Lancaster.

EXCEPTIONS / SUBSTITUTIONS

All bids meeting the intent of this invitation to bid will be considered for award. Bidders taking exception to the specifications, or offering substitutions, shall state these exceptions in the section provided or by attachment as part of the bid. In the absence of such, a list shall indicate that the Bidder has not taken exceptions and shall hold the Bidder responsible to perform in strict accordance with the specifications of the invitation. The city of Lancaster reserves the right to accept any and all or none of the exceptions(s) / substitutions(s) deemed to be in the best interest of the City.

FUNDING

The city operates on a fiscal year that ends on September 30th. Because state law mandates that a municipality may not commit funds beyond a fiscal year, this bid is subject to cancellation if funds for this commodity are not approved in the next fiscal year.

INDEMNIFICATION

In case any action in court is brought against the Owner, or any officer or agent of the Owner, for the failure, omission, or neglect of the vendor to perform any of the covenants, acts, matters, or things by this contract undertaken; or for injury or damage caused by the alleged negligence of the vendor or his subcontractors or his or their agents, or in connection with any claim based on lawful demands of subcontractors, workmen, material men, or suppliers the vendor shall indemnify and save harmless the Owner and his officers and agents, from all losses, damages, costs, expenses, judgments, or decrees arising out of such action.

INSURANCE

Deductibles, of any type, are the responsibility of the vendor/contractor

MISCELLANEOUS

Except as to any supplies or components which the specifications provide need not be new, all supplies and components to be provided under this contract shall be new (not used or reconditioned, and not of such age or so deteriorated as to impair their usefulness or safety), of current production and of the most suitable grade for the purpose intended. If at any time

the performance of this contract the Contractor believes that the furnishing of supplies or components which are not new is necessary or desirable, they shall notify the Purchasing Agent immediately, in writing, including the reasons therefore and proposing any consideration which will flow to the City if authorization to use supplies or components is granted.

The city of Lancaster supports a recycling program. Recycled materials are acceptable and will be considered for award. The City desires to use recycled products when a comparable material/product is available. If your company distributes products made of recycled materials please submit an alternate bid for the items requested. All recycled products should meet the minimum standards established in the bid specifications provided. State any exceptions: costs, warranties and percentage of recycle materials used in the manufacture of the material/product. The City will determine the acceptability of the materials/product bid as an alternate.

The City will consider special vendor pricing on discounts in exchange for City's willingness to participate in new product testing or promotion including ability of vendor to bring other potential customers to city job sites to demonstrate product. The amount of product discount in exchange for these services should be clearly stated in the bid document. Any promotional strategies should be discussed with the Purchasing Agent and approved by the appropriate City Official(s) before submission of the bid.

PATENTS / COPYRIGHTS

The successful bidder agrees to protect the City of Lancaster from claims involving infringement of patents and/or copyrights.

PAYMENT TERMS & CONDITIONS

All bids shall specify terms and conditions of payment, which will be considered as part of, but not control, the award of bid. City review, inspection, and processing procedures ordinarily require thirty (30) days after receipt of invoice, materials or service. Bids which call for payment before 30 days from receipt of invoice, or cash discounts given on such payment, will be considered only if in the opinion of the Purchasing Agent the review, inspection and processing procedures can be completed as to the specific purchases within the specified time.

It is the intention of the city of Lancaster to make payment on completed orders within thirty (30) days of receiving invoicing unless unusual circumstances arise. Invoices shall be fully documented as to labor, materials and equipment provided. Orders will be placed by the Purchasing Department and must be given a Purchase Order Number to be valid. No payments shall be made on invoices not listing a Purchase Order Number. No partial payment will be made.

PROVISIONAL CLAUSES

The city of Lancaster will not enter into any contract where the cost is provisional upon such clauses as are known as "escalator" or "cost-plus" clauses.

REJECTION OF BIDS

The City reserves the right to reject any or all bids or to waive technicalities at its option when in the best interests of said City.

Bids will be considered irregular if they show any omissions, alteration of form, additions, or conditions not called for, unauthorized alternate bids or irregularities of any kind. However, the City reserves the right to waive any irregularities and to make the award in the best interests of the City.

The City reserves the right to reject any or all bids, and all bids submitted are subject to this reservation. Bids may be rejected, among other reasons, for any of the following specific reasons:

- Bids received after the time limit for receiving bids as stated in the advertisement.
- Proposal containing any irregularities.
- Unbalanced value of any items.

Bidders may be disqualified and their bids not considered, among other reasons, for any of the following specific reasons:

- Reason for believing collusion exists among the Bidders.
- Reasonable grounds for believing that any Bidder is interested in more than one Proposal for the work contemplated.
- The Bidder being interested in any litigation against the City.
- The Bidder being in arrears on any existing contract or having defaulted on a previous contract.
- Lack of competency as revealed by a financial statement, experience and equipment, questionnaires, etc.
- Uncompleted work, which in the judgment of the City will prevent or hinder the prompt completion of additional work if awarded.

REQUEST FOR NON-CONSIDERATION

Bids deposited with the City cannot be withdrawn prior to the time set for opening bids. Request for non-consideration of bids must be made in writing to the Purchasing Agent and received by the City prior to the time set for opening bids. After other bids are opened and publicly read, the Proposal for which non-consideration is properly requested may be returned unopened. The Proposal may not be withdrawn after the bids have been opened, and the Bidder, in submitting the same, warrants and

guarantees that this bid has been carefully reviewed and checked and that it is in all things true and accurate and free of mistakes and that such bid will not and cannot be withdrawn because of any mistake committed by the Bidder.

SALES TAX

The total for each bid submitted must include any applicable taxes. Although the City is exempt from most City, State, or Federal taxes, this is not true in all cases. It is suggested that taxes, if any, be separately identified, itemized, and stated on each bid. The City cannot determine for the bidder whether or not the bid is taxable to the City. The bidder through the bidder's attorney or tax consultant must make such determination. Bills submitted for taxes after the bids are awarded will not be honored.

TERMINATION OF CONTRACT

This contract shall remain in effect until the contract expires, delivery and acceptance of products and/or performance of services ordered or terminated by either party with a thirty (30) day written notice prior to any cancellation. The successful bidder must state the reasons for such cancellation. The city of Lancaster reserves the right to award canceled contract to the next lowest and best bidder as it deems to be in the best interest of the City.

TERMINATION FOR DEFAULT

The city of Lancaster reserves the right to enforce the performance of this contract in any manner prescribed by law or deemed to be in the best interest of the City in the event of breach or default of this contract. The City of Lancaster reserves the right to terminate the contract immediately in the event the successful bidder fails to:

1. Meet schedules;
2. Defaults in the payment of any fees; or
3. Otherwise perform in accordance with these specifications.

Breach of contract or default authorizes the city of Lancaster to exercise any or all of the following rights:

1. The City may take possession of the assigned premises and any fees accrued or becoming due to date;
2. The city may take possession of all goods, fixtures and materials of successful bidder and may foreclose its lien against such personal property, applying the proceeds toward fees due or thereafter becoming due. The City shall give the successful bidder written notice of such default; and in the event said default is not remedied to the satisfaction and approval of the City within two (2) working days of receipt of such notice by the successful bidder, default will be declared and all the successful bidder's rights shall terminate.

Bidder, in submitting this bid, agrees that the City of Lancaster shall not be liable to prosecution for damages in the event that the City declares the bidder in default.

VENUE

This agreement will be governed and construed according to the laws of the State of Texas and performable in the city of Lancaster.

WAGES

Successful bidder shall pay or cause to be paid, without cost or expense to the city of Lancaster, all Social Security, Unemployment and Federal Income Withholding Taxes of all such employees and all such employees shall be paid wages and benefits as required by Federal and/or State Law.

WARRANTY

Successful bidder shall warrant that all items/ services shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title. A copy of the warranty for each item being bid must be enclosed.

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we
Northstar Construction, Inc., 3210 Joyce Drive, Fort Worth, TX 76116
as Principal, hereinafter called the Principal, and
Travelers Casualty and Surety Company of America
1301 E. Collins Blvd., Suite 340
Richardson, Texas, 75080

(Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of Connecticut
as Surety, hereinafter called the Surety, are held and firmly bound unto
CITY OF LANCASTER

(Here insert full name and address or legal title of Owner)

as Obligor, hereinafter called the Obligor, in the sum of

*** FIVE PERCENT OF BID AMOUNT ***

Dollars (5%)

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the Principal has submitted a bid for
LANCASTER COMMUNITY PARK AMPHITHEATRE

(Here insert full name, address and description of project)

NOW, THEREFORE, if the Obligor, shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligor,
in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with
good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in
the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the
Principal shall pay to the Obligor, the difference not to exceed the penalty hereof between the amount specified in said bid and the
larger amount for which the Obligor, may in good faith contract with another party to perform the Work covered by said bid, the
obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this 11th day of January, 2011

Dwight Canaday
(Witness)

Northstar Construction, Inc.
(Principal)

Michael A. Heimlich
(Title)



Travelers Casualty and Surety Company of
America

(Surety) (Seal)

David Mean
(Witness)

Julie Smith
(Title) Attorney-in-Fact



POWER OF ATTORNEY

Farmington Casualty Company
 Fidelity and Guaranty Insurance Company
 Fidelity and Guaranty Insurance Underwriters, Inc.
 St. Paul Fire and Marine Insurance Company
 St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
 Travelers Casualty and Surety Company
 Travelers Casualty and Surety Company of America
 United States Fidelity and Guaranty Company

Attorney-In Fact No. 221373

Certificate No. 003362745

KNOW ALL MEN BY THESE PRESENTS: That St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Steve Deal, Staci Gross, and Julie Smith

of the City of Wichita Falls, State of Texas, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 30th day of November, 2009.

Farmington Casualty Company
 Fidelity and Guaranty Insurance Company
 Fidelity and Guaranty Insurance Underwriters, Inc.
 St. Paul Fire and Marine Insurance Company
 St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
 Travelers Casualty and Surety Company
 Travelers Casualty and Surety Company of America
 United States Fidelity and Guaranty Company



State of Connecticut
 City of Hartford ss.

By: George W. Thompson

George W. Thompson, Senior Vice President

On this the 30th day of November, 2009, before me personally appeared George W. Thompson, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.
 My Commission expires the 30th day of June, 2011.



Marie C. Tetreault
 Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

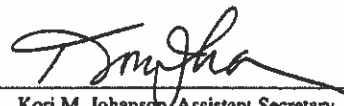
FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kori M. Johanson, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 11th day of January, 20 11.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER


Kori M. Johanson, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

**SPECIFICATIONS,
BIDDING, AND
CONTRACT DOCUMENTS**

FOR

LANCASTER COMMUNITY PARK AMPHITHEATER

Halff Associates Project No. 27305

FOR THE

CITY OF LANCASTER, TEXAS

EABPRJ #B0812988

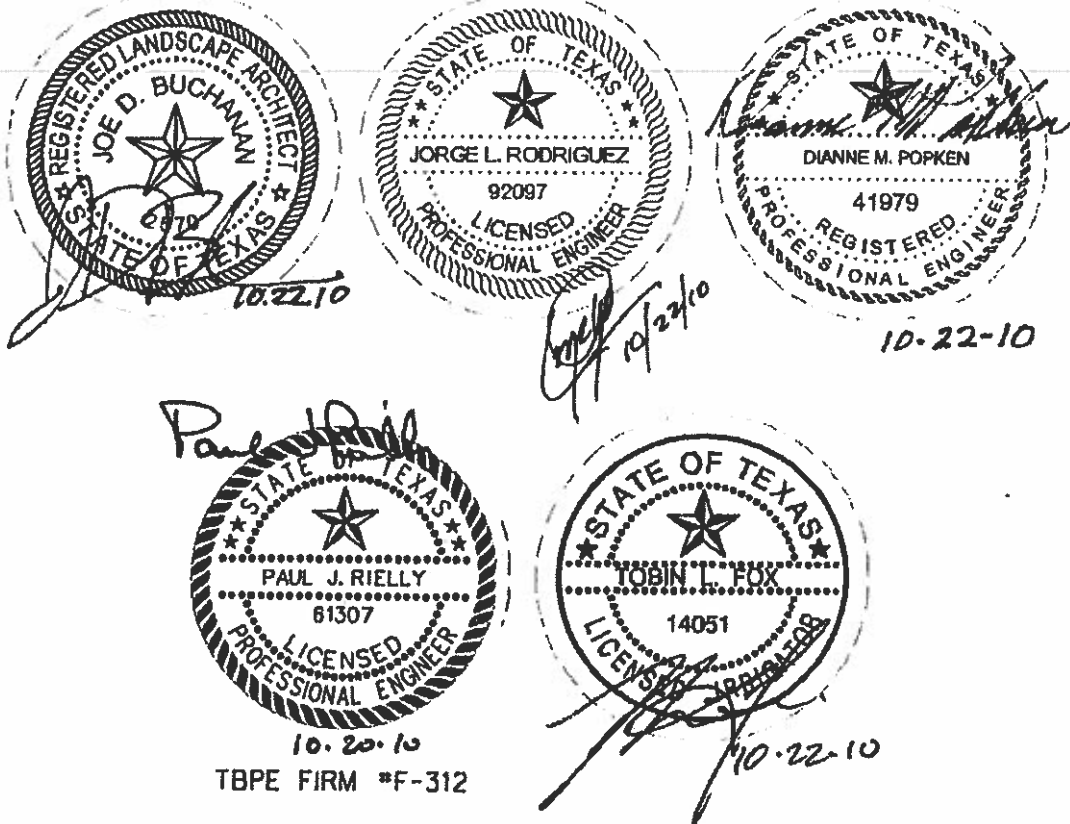
TPWD #50-000413



**October 22, 2010
Halff Associates, Inc. – TBPE Reg. No. F-312
1201 North Bowser Drive
Richardson, Texas 75081
214-346-6200 Fax 214-739-0095**

SECTION 000107

CERTIFICATION
HALFF ASSOCIATES INC.
TBPE FIRM #F-312



The Texas Board of Architectural Examiners, P.O. Box 12337, Austin, Texas 78711-2337 or 333 Guadalupe, suite 2-350, Austin, Texas 78701-3942, (512) 305-9000, has jurisdiction over individuals licensed under the Landscape Architects Registration Law, Texas Civil Statutes, Article 249c, and the Architects Registration Law, Article 249a, Vernon's Texas Civil Statutes.

LANCASTER COMMUNITY PARK AMPHITHEATER
22 OCTOBER, 2010
AVO 27305

CERTIFICATION
000107 - 1

**City of Lancaster Community Park Amphitheater
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GENERAL REQUIREMENTS



Lancaster Community Park Amphitheater

A Project of The City of Lancaster, Texas
211 N. Henry St.
Lancaster, TX 75146

PROPOSAL FORM

Bid Opening Date and Time: 2:00 pm, Tuesday, December 14th, 2010
To: City of Lancaster, County of Dallas, State of Texas
For: Lancaster Community Park Amphitheater
Project No. 27305

Pursuant to the foregoing "Notice for Bidders", the undersigned bidder, having thoroughly examined the contract documents, including plans, specifications, the site of the project, with an understanding of the amount of work to be done and the prevailing conditions, hereby proposes to do all the work, furnish all labor, equipment, and material (except as specified to be furnished by the City), that is necessary to fully complete all of the work as provided in the plans and contract documents and subject to the inspection and approval of the City of Lancaster, Texas, and binds himself upon acceptance of this Proposal to execute a contract and furnish an approved Performance Bond, Payment Bond, Maintenance Bond, and such other bonds, if any, as may be required by the contract documents for the performing and completing of said work. Contractor proposes to do the work within the time stated and for the following sums:

ITEM NO.	DESCRIPTION WITH BID PRICE WRITTEN IN WORDS	UNIT	BUDGETED QUANTITY	UNIT COST	EXTENDED COST
BASE BID ITEMS					

SITE PLAN

1	MOBILIZATION FOR THE SUM OF	LS	1		
	_____ DOLLARS				
	AND _____ CENTS				
	PER LUMP SUM			\$ _____	\$ _____
2	SWPPP DESIGN AND MAINTENANCE, COMPLETE IN PLACE FOR THE SUM OF	LS	1		
	_____ DOLLARS				
	AND _____ CENTS				
	PER LUMP SUM			\$ _____	\$ _____

3 **TEMPORARY SIGN, COMPLETE IN PLACE FOR THE SUM OF** EA 1

_____ DOLLARS

AND _____ CENTS
PER EACH

4 **CLEARING AND GRUBBING, COMPLETE IN PLACE FOR THE SUM OF** AC 0.34

_____ DOLLARS

AND _____ CENTS
PER ACRE

\$ _____ \$ _____

5 **SITE DEMOLITION, COMPLETE IN PLACE FOR THE SUM OF** LS 1

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

6 **EROSION CONTROL, COMPLETE IN PLACE FOR THE SUM OF** LF 1,000

_____ DOLLARS

AND _____ CENTS
PER LINEAR FOOT

\$ _____ \$ _____

7 **TREE TRANSPLANTING AS SHOWN AND SPECIFIED, FOR THE SUM OF** EA 20

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

8	SITE GRADING, COMPLETE IN PLACE FOR THE SUM OF _____ DOLLARS AND _____ CENTS PER LUMP SUM	LS	1		
				\$ _____	\$ _____
<hr/>					
9	CONCRETE FLUME AS SHOWN AND SPECIFIED, COMPLETE IN PLACE FOR THE SUM OF _____ DOLLARS AND _____ CENTS PER EACH	EA	1		
				\$ _____	\$ _____
<hr/>					
10	8" THICK ROCK RIPRAP AS SHOWN SPECIFIED, COMPLETE IN PLACE FOR THE SUM OF _____ DOLLARS AND _____ CENTS PER SQUARE FOOT	SF	36		
				\$ _____	\$ _____
<hr/>					
11	4" THICK LIGHT BROOM FINISH CONCRETE AS SHOWN AND SPECIFIED, COMPLETE IN PLACE FOR THE SUM OF _____ DOLLARS AND _____ CENTS PER SQUARE FOOT	SF	17,680		
				\$ _____	\$ _____

12	4" THICK ROCK SALT FINISH CONCRETE STAGE AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE FOR THE SUM OF	SF	1,970		
	_____DOLLARS				
	AND _____CENTS PER SQUARE FOOT			\$ _____	\$ _____
<hr/>					
13	SEATING AREA CONCRETE PAD AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE FOR THE SUM OF	EA	5		
	_____DOLLARS				
	AND _____CENTS PER EACH			\$ _____	\$ _____
<hr/>					
14	8" CONCRETE MOWSTRIP AS SHOWN AND SPECIFIED, COMPLETE IN PLACE FOR THE SUM OF	LF	191		
	_____DOLLARS				
	AND _____CENTS PER LINEAR FOOT			\$ _____	\$ _____
<hr/>					
15	ACCESSIBILITY RAMP AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE FOR THE SUM OF	EA	1		
	_____DOLLARS				
	AND _____CENTS PER EACH			\$ _____	\$ _____

16 **DECOMPOSED GRANITE AS** SF 15,810
SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER SQUARE FOOT

\$ _____ \$ _____

17 **SUNPORTS PAVILION FOOTINGS** EA 4
AS SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

18 **CONCRETE RETAINING WALL 'A'** LF 25
AS SHOWN AND SPECIFIED,
COMPLETE IN PLACE FOR THE
SUM OF

_____ DOLLARS

AND _____ CENTS
PER LINEAR FOOT

\$ _____ \$ _____

19 **CONCRETE RETAINING WALL 'B'** LF 8
AS SHOWN AND SPECIFIED,
COMPLETE IN PLACE FOR THE
SUM OF

_____ DOLLARS

AND _____ CENTS
PER LINEAR FOOT

\$ _____ \$ _____

20 **CONCRETE TERRACE WALLS AS** LF 273
SHOWN AND SPECIFIED,
COMPLETE IN PLACE FOR THE
SUM OF

_____ DOLLARS

AND _____ CENTS
PER LINEAR FOOT

\$ _____ \$ _____

21 **STAGE EQUIPMENT ENCLOSURE,** EA 1
AS SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

22 **TRANSFORMER TA ENCLOSURE** EA 1
AS SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

23 **LIGHT POLE FOUNDATIONS AS** EA 6
SHOWN AND SPECIFIED,
COMPLETE IN PLACE FOR THE
SUM OF
AND _____ CENTS
_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

24 **RETAINING WALL SIGNAGE AS** LS 1
SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

25 **GRANT PROGRAM PLAQUE AS** EA 1
SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

SITE PLAN - TOTAL BASE BID

\$ _____

BASE BID ITEMS

ELECTRICAL PLAN	
------------------------	--

26 **LIGHTING AND ELECTRICAL** LS 1
SYSTEMS AS REQUIRED BY THE
DRAWINGS AND SPECIFICATION
EXCEPT FOR THE STAGE
LIGHTING, VENDOR
RECEPTACLES, THE TRAIL
LIGHTING AND THE COMPANY
SWITCH, ITEMIZED SEPARATELY
AS SHOWN AND SPECIFIED,
COMPLETE AND IN PLACE FOR
THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

27 **PERMANENT STAGE LIGHTING** LS 1
 INCLUDING MOUNTING AND
 BRANCH CIRCUITS TO PANE 'B'
 TESTED AND FULLY FUNCTIONAL
 AS SHOWN AND SPECIFIED,
 COMPLETE AND IN PLACE FOR
 THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

28 **VENDOR RECEPTACLES** LS 1
 INCLUDING BRANCH CIRCUITS
 TO PANEL 'A' TESTED AND FULLY
 FUNCTIONAL AS SHOWN AND
 SPECIFIED, COMPLETE AND IN
 PLACE FOR THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

29 **PEDESTRIAN TRAIL LIGHTING** LS 1
 INCLUDING BRANCH CIRCUITS
 TO PANEL 'A' AND CONTROLS
 TESTED AS THE FULLY
 FUNCTIONAL SYSTEM
 SPECIFIED, AS SHOWN AND
 SPECIFIED, COMPLETE AND IN
 PLACE FOR THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

30 **COMPANY SWITCH FOR STAGE
POWER INCLUDING FEEDER,
EQUIPMENT CABINET AND
INSTALLATION. AS SHOWN AND
SPECIFIED, COMPLETE AND IN
PLACE FOR THE SUM OF**

LS 1

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

**ELECTRICAL PLAN - TOTAL BASE
BID**

\$ _____

BASE BID ITEMS

LANDSCAPE PLAN

31 **BERMUDA HYDROMULCH,
COMPLETE AND IN PLACE FOR
THE SUM OF**

SF 69,600

_____ DOLLARS

AND _____ CENTS
PER SQUARE FOOT

\$ _____ \$ _____

32 **BUFFALO HYDROMULCH,
COMPLETE AND IN PLACE FOR
THE SUM OF**

SF 20,820

_____ DOLLARS

AND _____ CENTS
PER SQUARE FOOT

\$ _____ \$ _____

33 **BERMUDA GRASS SOD, AS** SF 20,110
 SPECIFIED, COMPLETE IN PLACE

_____ DOLLARS

AND _____ CENTS
PER SQUARE FOOT

\$ _____ \$ _____

34 **1 GAL. GULF MUHLY GRASS, AS** EA 426
 SPECIFIED, COMPLETE AND IN
 PLACE FOR THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

35 **3" CAL. SHUMARD RED OAK, AS** EA 35
 SPECIFIED, COMPLETE AND IN
 PLACE FOR THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

LANDSCAPE PLAN - TOTAL
BASE BID

\$ _____

BASE BID ITEMS**IRRIGATION PLAN**

36 **IRRIGATION SYSTEM AS SHOWN** LS 1
AND SPECIFIED, COMPLETE AND
IN PLACE FOR THE SUM OF

_____ DOLLARS

AND _____ CENTS
PER LUMP SUM

\$ _____ \$ _____

**IRRIGATION PLAN - TOTAL BASE
BID**

\$ _____

ITEM NO.	DESCRIPTION WITH BID PRICE WRITTEN IN WORDS	UNIT	BUDGETED QUANTITY	UNIT COST	EXTENDED COST
ALTERNATE BID ITEMS					

1 **4"THICK BROOM FINISH
CONCRETE UPGRADE FROM
DECOMPOSED GRANITE,
COMPLETE AND IN PLACE FOR
THE SUM OF**

SF

15,000

_____ DOLLARS

AND _____ CENTS
PER SQUARE FOOT

\$ _____ \$ _____

2 **6' BENCH, COMPLETE AND IN
PLACE FOR THE SUM OF**

EA

5

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

3 **TRASH RECEPTACLE, COMPLETE
AND IN PLACE FOR THE SUM OF**

EA

5

_____ DOLLARS

AND _____ CENTS
PER EACH

\$ _____ \$ _____

TOTAL ALTERNATE BID ITEMS

\$ _____

SUMMARY OF PROJECT TOTAL COSTS

TOTAL COST- BASE BID - SITE PLAN \$ _____

TOTAL COST - BASE BID - LIGHTING PLAN \$ _____

TOTAL COST - BASE BID - LANDSCAPE PLAN \$ _____

TOTAL COST - BASE BID - IRRIGATION PLAN \$ _____

TOTAL BASE BID COST \$ _____

TOTAL ALTERNATE COSTS \$ _____

TOTAL ALLOWANCES COSTS \$ _____

TOTAL PROJECT COST \$ _____

NOTES:

- 1 Within ten (10) days after acceptance of this Proposal, the undersigned will execute the formal contract and will deliver an approved Surety Bond and such other bonds as required by the Contract Documents for the faithful performance of the Contract. The attached bid security in the amount of 5% is to become the property of the Owner in the event the contract and bond(s) are not executed and delivered within the time above set forth as liquidated damages for the delay and additional work caused thereby.
- 2 The undersigned assures that its employees and applicants for employment and those of any labor organizations, subcontractors, or employment agency, in either furnishing or referring employee applicants to the undersigned, are not discriminated against.
- 3 The bidder agrees to begin construction within ten (10) calendar days after the issuance of the Notice to Proceed with Construction (Work Order), and achieve substantial completion within forty five (45) calendar days after receipt of said notice. Certificate of Acceptance for final completion must be obtained within ninety (90) calendar days after receipt of said notice.

Receipt is acknowledged of the following addenda:

Addendum No. 1 _____

Addendum No. 2 _____

Addendum No. 3 _____

Respectfully submitted by:

Company (Printed)

Name (Printed)

Address

Phone

Fax

SECTION 00100

INFORMATION AVAILABLE TO BIDDERS

PART 1 - GENERAL

1.1 Information Available to Bidders:

A. Geotechnical Report for the project found within this Project Manual.

- a. 33 page Report for CMJ Project No. 117-10-128, prepared by CMJ Engineering, Inc., dated June 9, 2010.**
-

PART 2 - PRODUCTS

A. Custom Stage Cover

- a. 2 page Document, DWG.CON – FEB-021-10, page 1001 and 1010. Prepared by SunPorts. (NOT FOR CONSTRUCTION, FOR BIDDING PURPOSES ONLY – Final signed engineering drawings will be provided prior to work commencement.)**

PART 3 - EXECUTION (Not Used)

END OF SECTION 00100

**GEOTECHNICAL ENGINEERING STUDY
LANCASTER COMMUNITY PARK IMPROVEMENTS
LANCASTER, TEXAS**

Presented To:
Halff Associates, Inc.

June 2010

PROJECT NO. 117-10-128

June 9, 2010
Report No 117-10-128

Halff Associates, Inc.
1201 North Bowser Road
Richardson, Texas 75081

Attn: Mr. Randy W Watson

**GEOTECHNICAL ENGINEERING STUDY
LANCASTER COMMUNITY PARK IMPROVEMENTS
LANCASTER, TEXAS**

Dear Mr. Watson:

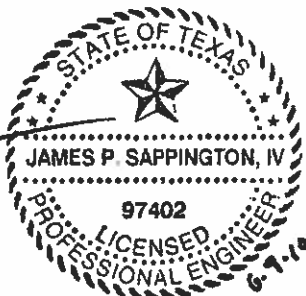
Submitted here are the results of a geotechnical engineering study for the referenced project. This study was performed in general accordance with our Proposal No. 10-3178 dated May 11, 2010. The geotechnical services were authorized on May 11, 2010.

Engineering analyses and recommendations are contained in the text section of the report. Results of our field and laboratory services are included in the appendix of the report. We would appreciate the opportunity to be considered for providing the construction consultation services during the construction phase of this project.

We appreciate the opportunity to be of service to Halff Associates, Inc. Please contact us if you have any questions or if we may be of further service at this time.

Respectfully submitted,
CMJ ENGINEERING, INC.
TEXAS FIRM REGISTRATION NO. F-9177


James P. Sappington, IV, P.E.
Project Engineer
Texas 97402



copies submitted: (3) Mr. Randy W Watson; Halff Associates, Inc

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APPENDIX B

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1.0 INTRODUCTION

1.1 Project Description

This report presents the results of a geotechnical engineering study for improvements of Lancaster Community Park in Lancaster, Texas. The project, as currently planned, consists of the following:

- Sunport pavilion
- Concrete and/or decomposed granite trail extension
- Seat walls

The proposed structures are anticipated to be relatively lightly loaded and no below-grade construction is planned. The approximate locations of the exploration borings are depicted on Plate A 1, Plans of Borings.

1.2 Purpose and Scope

The purpose of this geotechnical engineering study has been to determine the general subsurface conditions, evaluate the engineering characteristics of the subsurface materials encountered, and develop recommendations for the type or types of foundations suitable for the project.

To accomplish its intended purposes, the study has been conducted in the following phases: (1) drilling sample borings to determine the general subsurface conditions and to obtain samples for testing; (2) performing laboratory tests on appropriate samples to determine pertinent engineering properties of the subsurface materials; and (3) performing engineering analyses, using the field and laboratory data to develop geotechnical recommendations for the proposed construction.

The design is currently in progress and the locations and/or elevations of the structure could change. Once the final design is near completion (80-percent to 90-percent stage), it is recommended that CMJ Engineering, Inc. be retained to review those portions of the construction documents pertaining to the geotechnical recommendations, as a means to determine that our recommendations have been interpreted as intended.

1.3 Report Format

The text of the report is contained in Sections 1 through 11. All plates and large tables are contained in Appendix A. The alpha-numeric plate and table numbers identify the appendix in which they appear. Small tables of less than one page in length may appear in the body of the text and are numbered according to the section in which they occur.

Units used in the report are based on the English system and may include tons per square foot (tsf), kips (1 kip = 1,000 pounds), kips per square foot (ksf), pounds per square foot (psf), pounds per cubic foot (pcf), and pounds per square inch (psi).

2.0 FIELD EXPLORATION AND LABORATORY TESTING

2.1 Field Exploration

Subsurface materials at the project site were explored by two (2) vertical soil borings. Boring B-1 was drilled to a depth of 10 feet and Boring B-2 was drilled to a depth of 20 feet. The borings were drilled using continuous flight augers at the approximate locations shown on the Plans of Borings, Plate A.1. The boring logs are included on Plates A.4 and A.5 and keys to classifications and symbols used on the logs are provided on Plates A.2 and A.3.

Undisturbed samples of cohesive soils were obtained with nominal 3-inch diameter thin-walled (Shelby) tube samplers at the locations shown on the logs of borings. The Shelby tube sampler consists of a thin-walled steel tube with a sharp cutting edge connected to a head equipped with a ball valve threaded for rod connection. The tube is pushed into the soil by the hydraulic pulldown of the drilling rig. The soil specimens were extruded from the tube in the field, logged, tested for consistency with a hand penetrometer, sealed, and packaged to limit loss of moisture.

The consistency of cohesive soil samples was evaluated in the field using a calibrated hand penetrometer. In this test a 0.25-inch diameter piston is pushed into the relatively undisturbed sample at a constant rate to a depth of 0.25 inch. The results of these tests, in tsf, are tabulated at respective sample depths on the logs. When the capacity of the penetrometer is exceeded, the value is tabulated as 4.5+.

2.2 Laboratory Testing

Laboratory soil tests were performed on selected representative samples recovered from the borings. In addition to the classification tests (liquid limits and plastic limits), moisture content, unit weight, and unconfined compressive strength tests were performed. Results of the laboratory classification tests, moisture content, unit weight, and unconfined compressive strength tests conducted for this project are included on the boring logs.

A swell test was performed on a specimen from a selected sample of the clays. This test was performed to help in evaluating the swell potential of soils in the area of the proposed structure. The results of the swell test are presented on Plate A.6.

The above laboratory tests were performed in general accordance with applicable ASTM procedures, or generally accepted practice.

3.0 SUBSURFACE CONDITIONS

3.1 Site Geology

According to the Dallas Sheet of the Geologic Atlas of Texas, the project site is located within the Austin Chalk Geological Formation. This formation typically consists of clays overlying chalky limestone rock. The thickness of the clay above the limestone can vary significantly. Below the clays, the limestones are generally encountered in a weathered condition, and transition into an unweathered condition with depth. Occasionally, old stream beds, which have been filled during more recent geological time, are encountered in the Austin Chalk formation. The unweathered primary limestone material is gray in color.

3.2 Soil Conditions

Specific types and depths of subsurface strata encountered at the boring locations are shown on the boring logs in Appendix A. The generalized subsurface stratigraphy encountered in the borings are variable with respect to the type of clays encountered and are discussed below. Note that depths on the borings refer to the depth from the existing grade or ground surface present at the time of the investigation, and the boundaries between the various soil types are approximate.

Overburden soils encountered consist of dark brown, brown, and gray clays of high plasticity. Light brown and gray silty clays are next present in Boring B-2 at a depth of 13 feet and continued to boring termination at 20 feet. The soils encountered typically contain calcareous nodules and occasionally ironstone nodules. The clayey soils are generally stiff to very stiff (soil basis) with pocket penetrometer values ranging from 1.5 to 3.25 tsf. Tested Liquid Limit (LL) and Plasticity Index (PI) values ranged from 54 to 82 and 35 to 51, respectively, and are classified as CH by the USCS. Tested unconfined compressive strength and unit weight values varied from 2,250 to 2,720 psf and 90 to 95 pcf, respectively.

The Atterberg Limits tests indicate the various clays encountered at this site are highly active with respect to moisture induced volume changes. Active clays can experience volume changes (expansion or contraction) with fluctuations in their moisture content.

3.3 Ground-Water Observations

The borings were drilled using continuous flight augers in order to observe ground-water seepage during drilling. Ground-water seepage was not encountered during drilling and the borings were at completion of drilling operations.

Fluctuations of the ground-water level can occur due to seasonal variations in the amount of rainfall; site topography and runoff; hydraulic conductivity of soil strata; and other factors not evident at the time the borings were performed.

4.0 FOUNDATION RECOMMENDATIONS

4.1 General Foundation Considerations

The moisture induced volume changes associated with the highly active clays present at this site indicate that shallow or near surface footings could be subject to differential movements of a potentially detrimental magnitude. The most positive foundation system for the proposed structure would consist of a deep foundation system situated below the zone of most significant seasonal moisture variations. However, consideration can be given to the use of monolithic, slab-on-grade foundations for the pavilion structure only if differential movements can be tolerated.

The key to the success of slab performance includes obtaining the proper design parameters for design, designing the slab for the representative movements anticipated, and construction and post-construction techniques to reduce the possibility of undue movements. Expansive soils will neither heave nor shrink unless the actual moisture content of the soil changes. Therefore, maintaining as constant a moisture content aside and below slab foundations becomes of paramount importance to reduction of soil movements. If the geometric design is extremely complicated or if movement-sensitive materials are used in construction, a more positive foundation system is recommended. A greater risk of unsatisfactory foundation performance exists with a slab-on-grade design than for a drilled shaft design. Recommendations for a stiffened monolithic, slab-on-grade are presented below.

4.2 Potential Vertical Movements

Analyses indicate that the potential vertical movements of onsite soils due to their expansive characteristics may be on the order of 5 inches for soil in a dry condition. The higher values of movements will occur where the greater thicknesses of dryer, more highly plastic clays are present. The actual amount of movement will depend greatly on the moisture content of the soils prior to construction. In other words, where a ground-supported floor slab is placed upon moist soils, the future expansive soil movement of these soils will be limited since these soils exist in a pre-swelled state, and additional moisture will not cause significant additional heaving of the soils. Conversely, when onsite soils are extremely dry, moisture will cause significant swelling of these soils.

Upward differential movements due to heaving tend to cause the greatest undue cracking of slabs and superstructures. Therefore, slabs placed on moist subgrade soils or subgrade soils which are preconditioned to moist states will exhibit low movements, generally tolerable to slab-on-ground foundations.

Favorably high moisture levels currently exist within the clays. Based on the elevated in-situ moisture conditions and swell test results, the estimated potential moisture induced movements are on the order of 2¼ inches from present in-situ moisture conditions.

4.3 Monolithic, Slab-on-Grade Foundations

4.3.1. Foundation Subgrade Preparation

A stiffened, monolithically placed slab-on-grade foundation, either rebar or post-tensioned, used at this site must be designed with exterior and interior grade beams to provide sufficient rigidity to tolerate the differential soil movements. These differential movements typically will occur between the periphery and interior of the slab-on-grade system. Foundation movements are anticipated to occur primarily due to post construction heave of the underlying soils but also can occur due to shrinkage of the clays around the perimeter of the slab. It is recommended that all fill soils be properly placed and compacted in accordance with this report section and Section 8.0 prior to foundation installation.

In order for the slab-on-grade structures to be successful, the potential soil movements must be reduced and the slab must be designed to provide sufficient rigidity to withstand expected in-situ

differential soil movements. Reductions in anticipated movements can be achieved by using methods developed in this area to reduce on-grade slab movements.

Readers should understand that a slabs situated on grade can heave considerably if placed on dry, expansive clays. As previously discussed, in-situ moisture conditions at the time of exploration for this study were favorably high. If these soil moisture contents can be maintained prior to and during construction, the installation of a 1-foot select fill pad atop the existing moist soils is recommended. A pre-construction moisture evaluation is strongly recommended to verify if elevated moisture levels are present in the clays. Generally, it is anticipated that these moisture levels will remain elevated through July 2010.

If the soils are dry relative to present in-situ moisture levels, the installation of a minimum of 1-foot select fill pad over a minimum of 5 feet of moisture conditioned clays is recommended. Moisture conditioning can be achieved by mechanically reworking the clays or water pressure injection as described below.

In either of the two cases above, a horizontal moisture barrier from the foundation out for a distance of 5 feet also will greatly restrict moisture mitigation and differential moisture change below the slab. The use of these methods will not eliminate the risk of unacceptable movements.

Slab-on-grade construction only should be considered if slab movement can be tolerated. The level of acceptable movement varies with the user, but methods are normally selected with the goal of limiting slab movements. Readers should understand that a ground-supported floor slab can heave considerably if placed on dry, expansive clays. Moisture conditioning is recommended to be achieved by mechanically reworking the clays or water pressure injection as discussed below.

Consideration should be given to extending the moisture conditioning process beyond the building line to include entrances or other areas sensitive to movement. Outside the building, a poly barrier capped with a minimum 12 inches of select fill is recommended. The poly barrier should extend a minimum of 5 feet away from the foundation edge and should slope down slightly to shed excess moisture away from the structure. This process is itemized below.

Soil treatments presented in this section are referenced as an alternative to the use of a pier and structurally suspended grade beam and floor slab. The owner must fully understand that if the floor slab is placed on-grade, some movement and resultant cracking within the floor and interior wall partitions may occur. This upward slab movement and cracking usually is difficult and costly to repair, and may require continued maintenance expense.

4.3.2. Design Parameters

The foundation should be designed by a structural engineer familiar with stiffened slabs-on-grade subject to differential movement. Design parameters are presented below for PVR and differential swell using the Post-Tensioning Institute's (PTI) slab-on-grade design method.

Estimated PVR: 2¼ inches⁽¹⁾⁽²⁾

Edge Moisture Variation -

Approximate Center Lift: 5.5 feet

Approximate Edge Lift: 5.0 feet

Differential Swell -

Approximate Center Lift: 2.3 inches

Approximate Edge Lift: 1.1 inches

(1) Following installation of 1 foot select fill cap; providing construction initiates prior to August 2010.

(2) Following 5 feet of moisture conditioning with the installation of a 1-foot select fill cap for soils in a dry condition.

Beams may be designed based on an allowable soil bearing pressure of 2,000 pounds per square foot or less within the shallow soils. The beams should extend at least 12 inches into natural, undisturbed soil or compacted and tested fill. The beam depth is given in regard to bearing capacity and is not intended to be a structural recommendation. A modulus of subgrade reaction (K_h) of 100 pci is appropriate. The above design values contain a factor of safety of three (3).

If slab stiffness is not sufficient to resist the ground movements, these movements can cause cracking of the slab and differential movements. The PVR values presented above are applicable only when site moisture conditions are controlled by the climate alone on a well graded site (i.e., no improper drainage, water leaks or free water sources). Under these conditions, moisture increases within the supporting soils and the resulting differential foundation movements are much lower than differential movements that can occur due to post-construction movements due to localized saturation caused by free water sources near or beneath the structures. Such movements from these unusual sources can result in greater differential movements than the slab was designed to

tolerate. Soil movements, significantly larger than estimated, could occur due to inadequate site grading, poor drainage, ponding of rainfall, and/or leaking pipelines

The performance of a slab foundation can be significantly influenced by landscaping maintenance, recessed landscaping additions near the structure, water line leaks, any other free water sources, and deep-rooted trees and shrubs. For example, should leaks develop in underground water or sewer lines or the grades around the structure are changed and cause ponding of water, unacceptable slab movements could develop. A greater risk of unsatisfactory foundation performance exists with a slab-on-grade design than for a drilled shaft design extending below the zone of seasonal moisture change.

The key to the success of this foundation is proper design/construction, and providing control of the below-slab water. Providing excellent drainage away from the structure, preventing ponding water aside the slab, and using relatively impermeable backfill to prevent water intrusion via utility line backfill enhance the slab performance.

4.3.3. Mechanical Reworking of Near-Surface Clays with 1' Select Fill Cap

In general, the procedure is performed as follows:

1. Remove all existing pavements, surface vegetation, trees and associated root mats, organic topsoil and any other deleterious material.
2. Excavate surficial clays to a minimum of 5.5 feet below finished grade. Scarify the exposed clay subgrade, at the base of the excavation, to a depth of 8 inches, adjust the moisture, and compact at a minimum of 3 percentage points above optimum moisture to between 93 and 98 percent of Standard Proctor density (ASTM D 698). Over-compaction should not be allowed.
3. Fill pad to 1 foot below final grade using site excavated or similar clay soils. Compact in maximum 9-inch loose lifts at a minimum of three percentage points above optimum moisture to between 93 and 98 percent of Standard Proctor density (ASTM D 698). Over-compaction should not be allowed.
4. Complete pad fill using a minimum of 1 foot of sandy clay/clayey sand, non-expansive select fill with a Liquid Limit less than 35 and a Plasticity Index (PI) between 5 and 16. The select fill should be compacted in maximum 9-inch loose lifts at -2 to +3 percentage points of the soil's optimum moisture content at a minimum of 95 percent of Standard Proctor density (ASTM D 698). The select fill should be placed within 48 hours of completing the installation of the moisture conditioned soils. The moisture condition within the completed pad shall be maintained during construction.

4.3.4. Water Pressure Injection With 1' Select Fill Cap

Pre-swelling benefits could be achieved by means of water pressure injection. In general, the injection procedure is performed as follows:

1. Remove surface vegetation and organic topsoil.
2. Excavate to a minimum of 1 foot below final pad grade.
3. Water pressure inject the exposed soils to a depth of 5 feet using methods outlined in Appendix B.
4. Rework subgrade to a depth of 12 inches and compact at a minimum of 3 percentage points above optimum moisture to between 93 and 98 percent Standard Proctor density (ASTM D 698). Over-compaction should not be allowed.
5. Complete pad fill using a minimum of 1 foot of sandy clay/clayey sand, non-expansive select fill with a Liquid Limit less than 35 and a Plasticity Index (PI) between 5 and 16. The select fill should be compacted in maximum 9-inch loose lifts at -2 to +3 percentage points of the soil's optimum moisture content at a minimum of 95 percent of Standard Proctor density (ASTM D 698). The select fill should be placed within 48 hours of completing the installation of the moisture conditioned soils. The moisture condition within the completed pad shall be maintained during construction.

Initial penetration with the injection rods may be difficult for soils in a hard consistency. It should be expected that multiple injection passes (at least 3 and possibly more) will be required to obtain the desired moisture levels. The time and cost associated with the anticipated multiple injections should be included in the project budget and schedule.

5.0 EXPANSIVE SOIL CONSIDERATIONS

5.1 Site Drainage

An important feature of the project is to provide positive drainage away from the proposed structure. If water is permitted to stand next to or below the structure, excessive soil movements (heave) can occur. This could result in differential floor slab or foundation movement.

A well-designed site drainage plan is of utmost importance and surface drainage should be provided during construction and maintained throughout the life of the structure. Consideration should be given to the design and location of gutter downspouts, planting areas, or other features which would produce moisture concentration adjacent to or beneath the structure or paving. Consideration should be given to the use of self-contained, watertight planters. Joints next to the structure should be sealed with a flexible joint sealer to prevent infiltration of surface water. Proper

maintenance should include periodic inspection for open joints and cracks and resealing as necessary.

Rainwater collected by the gutter system should be transported by pipe to a storm drain or to a paved area. If downspouts discharge next to the structure onto flatwork or paved areas, the area should be watertight in order to eliminate infiltration next to the building.

5.2 Additional Design Considerations

The following information has been assimilated after examination of numerous projects constructed in active soils throughout the area. It is presented here for your convenience. If these features are incorporated in the overall design of the project, the performance of the structure should be improved.

- Special consideration should be given to completion items outside the building area, such as stairs, sidewalks, signs, etc. They should be adequately designed to sustain the potential vertical movements mentioned in the report.
- Roof drainage should be collected by a system of gutters and downspouts and transmitted away from the structure where the water can drain away without entering the building subgrade.
- Sidewalks should not be structurally connected to the building. They should be sloped away from the building so that water will drain away from the structure.
- The paving and the general ground surface should be sloped away from the building on all sides so that water will always drain away from the structure. Water should not be allowed to pond near the building after the slab has been placed.
- Every attempt should be made to limit the extreme wetting or drying of the subsurface soils since swelling and shrinkage will result. Standard construction practices of providing good surface water drainage should be used. A positive slope of the ground away from the foundation should be provided to carry off the run-off water both during and after construction.
- Backfill for utility lines or along the perimeter beams should consist of on-site material so that they will be stable. If the backfill is too dense or too dry, swelling may form a mound along the ditch line. If the backfill is too loose or too wet, settlement may form a sink along the ditch line. Either case is undesirable since several inches of movement is possible and floor cracks are likely to result. The soils should be processed using the previously discussed compaction criteria.

6.0 RETAINING WALL RECOMMENDATIONS

6.1 General Retaining Wall Considerations

Five geotechnical design criteria must be satisfied in the selection of the type and configuration of the retaining walls. These criteria are; the wall must have an acceptable factor of safety with respect to (1) overturning failure, (2) a sliding (translation) failure, (3) a bearing capacity failure, and (4) a global (deep-seated) slope failure. In addition, (5) the deformation of the wall caused by deflection from earth pressure, and from settlement or heave of the foundation soils or backfill soils, must be within tolerable limits during the functional life of the structure.

6.2 Foundations

If the retaining walls are sensitive to movements, we recommend they be supported on a deep foundation system. This office should be contacted for additional recommendations if such design parameters are required.

If differential movements are acceptable, the retaining wall foundations can be supported on footings founded into the natural soils at least 2 feet below existing grade. The retaining wall foundations may be designed for an allowable bearing pressure of 2.0 ksf. It should be noted that retaining wall foundations are typically subjected to non-uniform pressure across the foundation, and possibly negative pressure (separation of foundation from soil) under a portion of the foundation, due to the overturning moment induced by the lateral earth pressures. The allowable foundation pressures given above are for the maximum pressure induced by the foundation loads, and not the average pressure under the foundation base.

The horizontal bases of the footings will develop resistance to sliding by means of a combination of friction and adhesion (for cohesive foundation materials). Given the nature of the foundation materials, an adhesion of 500 psf may be used for earth formed footings. An ultimate friction factor of 0.3 may be used to calculate sliding resistance of the footings bearing on site soils.

Sliding resistance may be increased in areas where keyways are present beneath the wall footings. The vertical earth-formed sides of keyways will resist lateral forces by developing passive earth pressures. A passive lateral earth pressure coefficient of 2.0 should be used for passive resistance calculations where passive resistance is developed against a vertical earth-formed side of a keyway, based on a soil unit weight of 125 pcf, per foot of footing height.

Foundations for the retaining walls designed in accordance with these recommendations will have a minimum factor of safety of 3 with respect to a bearing capacity failure, and should experience a total settlement of 1 inch or less and a differential settlement of ½ inch or less, after construction.

6.3 Lateral Earth Pressures

The retaining walls must be designed for lateral pressures including, but not necessarily limited to, earth, water, surcharge, swelling, and vibration. In addition, the lateral pressures will be influenced by whether the backfill is drained or undrained, and above or below the ground-water table.

Lateral earth pressures on retaining walls will depend on a variety of factors, including the type of soils behind the wall, the condition of the soils, and the drainage conditions behind the wall. Recommended lateral earth pressures expressed as equivalent fluid pressures, per foot of wall height, are presented below in Table 1 for a wall with a level backfill behind the top of the wall. The equivalent fluid pressure for an undrained condition should be used if a drainage system is not present to remove water trapped in the backfill and behind the wall. Pressures are provided for at-rest and active earth pressure conditions. In order to allow for an active condition the top of the wall(s) must deflect on the order of 0.4 percent.

TABLE 6.3-1 – EQUIVALENT FLUID PRESSURES				
Backfill Material	At-Rest Equivalent Fluid Pressure (pcf)		Active Equivalent Fluid Pressure (pcf)	
	Drained	Undrained	Drained	Undrained
Excavated on-site clay or clay fill material	100	110	90	100
Select fill material	65	90	50	85
Free draining granular backfill material	50	90	35	80

For the select fill or free draining granular backfill these values assume that a “full” wedge of the material is present behind the wall. The wedge is defined where the wall backfill limits extend outward at least 2 feet from the base of the wall and then upward on a 1H:2V slope. For narrower backfill widths of granular or select fill soils, the equivalent fluid pressures for the on-site soils should be used.

The location and magnitude of permanent surcharge loads (if present) should be determined, and the additional pressure generated by these loads such as the weight of construction equipment and vehicular loads that are used at the time the structures are being built must also be considered in the design. The effect of this or any other surcharge loading may be accounted for by adding an additional uniform load to the full depth of the side walls equivalent to one-half of the expected vertical surcharge intensity for select backfill materials, or equal to the full vertical surcharge intensity for clay backfill. The equivalent fluid pressures, given here, do not include a safety factor. Analysis of surcharge loads (if any) should be performed on a case-by-case basis. This is not included in the scope of this study. These services can be provided as additional services upon request.

6.4 Wall Backfill Material Requirements

On-Site Clays: For wall backfill areas with site-excavated materials or similar imported materials, all oversized fragments larger than four inches in maximum dimension should be removed from the backfill materials prior to placement. The backfill should be free of all organic and deleterious materials, and should be placed in maximum 8-inch compacted lifts at a minimum of 95 percent of Standard Proctor density (ASTM D 698) within a moisture range of plus to minus 3 percentage points of optimum moisture. Compaction within five feet of the walls should be accomplished using hand compaction equipment, and should be between 90 and 95 percent of the Standard Proctor density.

Select Fill: All wall select backfill should consist of clayey sand and/or sandy clay material with a Plasticity Index between 5 and 16, with a Liquid Limit not exceeding 35. The select fill should be placed in maximum 8-inch lifts and compacted to between 95 and 100 percent of Standard Proctor density (ASTM D 698) within a moisture range of plus to minus 3 percentage points of the optimum moisture. Compaction within five feet of the walls should be accomplished using hand compaction equipment and should be compacted between 90 and 95 percent of the Standard Proctor density.

Free-Draining Granular Backfill: All free draining granular wall backfill material should be a crushed stone, sand/gravel mixture, or sand/crushed stone mixture. The material should have less than 3 percent passing the No. 200 sieve and less than 30 percent passing the No. 40 sieve. The minus No. 40 sieve material should be non-plastic. Granular wall backfill should not be water jetted during installation.

6.5 Below-Grade Drainage Requirements

The design recommendations presented above assume hydrostatic pressure will not develop behind the retaining wall. In order to achieve the "above water table" condition for lateral earth pressure for low-permeability walls (concrete, masonry, etc.), a vertical drainage blanket or geocomposite drainage member must be installed adjacent to the wall on the backfill side. The drainage must be connected to an outlet drain at the base of the wall, or to the sump/pump system. Drainage could be provided using a collector pipe or weep holes near the base of the retaining wall. Drains should be properly filtered to minimize the potential for erosion through these drains, and /or the plugging of drain lines. Design or specific recommendations for drainage members is beyond the scope for this study. These services can be provided as an additional service upon request. In order to achieve the "drained" condition, the entire backfill material must be free draining, or the backfill-wall geometry must be such that the backfill will not become saturated from rainfall, ground water, adjacent water courses, or other sources.

7.0 SEISMIC CONSIDERATIONS

Based on the conditions encountered in the borings for the above referenced project the IBC-2000 site classification is TYPE D for seismic evaluation.

8.0 EARTHWORK

8.1 Site Preparation

The existing ground surface should be stripped of vegetation, roots, old construction debris, and other organic material. It is estimated that the depth of stripping will be on the order of 4 to 6 inches. The actual stripping depth should be based on field observations with particular attention given to old drainage areas, uneven topography, and excessively wet soils. The stripped areas should be observed to determine if additional excavation is required to remove weak or otherwise objectionable materials that would adversely affect the fill placement or other construction activities.

The subgrade should be firm and able to support the construction equipment without displacement. Soft or yielding subgrade should be corrected and made stable before construction proceeds. The subgrade should be proof rolled to detect soft spots, which if exist, should be excavated to provide a firm and otherwise suitable subgrade. Proof rolling should be performed using a heavy

pneumatic tired roller, loaded dump truck, or similar piece of equipment. The proof rolling operations should be observed by the project geotechnical engineer or his/her representative.

Prior to fill placement, the subgrade should be scarified to a minimum depth of 6 inches, its moisture content adjusted, and recompacted to the moisture and density recommended for fill.

8.2 Placement and Compaction

Fill material should be placed in loose lifts not exceeding 8 inches in uncompacted thickness. The uncompacted lift thickness should be reduced to 4 inches for structure backfill zones requiring hand-operated power compactors or small self-propelled compactors. The fill material should be uniform with respect to material type and moisture content. Clods and chunks of material should be broken down and the fill material mixed by disking, blading, or plowing, as necessary, so that a material of uniform moisture and density is obtained for each lift. Water required for sprinkling to bring the fill material to the proper moisture content should be applied evenly through each layer.

The on-site soils are suitable for use in general site grading. Imported fill material should be clean soil with a Liquid Limit less than 60 and no rock greater than 4 inches in maximum dimension. The fill materials should be free of vegetation and debris.

The fill material should be compacted to a density ranging from 95 to 100 percent of maximum dry density as determined by ASTM D 698, Standard Proctor. In conjunction with the compacting operation, the fill material should be brought to the proper moisture content. The moisture content for general earth fill should range from 2 percentage points below optimum to 5 percentage points above optimum (-2 to +5). These ranges of moisture contents are given as maximum recommended ranges. For some soils and under some conditions, the contractor may have to maintain a more narrow range of moisture content (within the recommended range) in order to consistently achieve the recommended density.

Field density tests should be taken as each lift of fill material is placed. As a guide, one field density test per lift for each 5,000 square feet of compacted area is recommended. For small areas or critical areas the frequency of testing may need to be increased to one test per 2,500 square feet. A minimum of 2 tests per lift should be required. The earthwork operations should be observed and tested on a continuing basis by an experienced geotechnician working in conjunction with the project geotechnical engineer.

Each lift should be compacted, tested, and approved before another lift is added. The purpose of the field density tests is to provide some indication that uniform and adequate compaction is being obtained. The actual quality of the fill, as compacted, should be the responsibility of the contractor and satisfactory results from the tests should not be considered as a guarantee of the quality of the contractor's filling operations.

8.3 Trench Backfill

Trench backfill for pipelines or other utilities should be properly placed and compacted. Overly dense or dry backfill can swell and create a mound along the completed trench line. Loose or wet backfill can settle and form a depression along the completed trench line. Distress to overlying structures, pavements, etc. is likely if heaving or settlement occurs. On-site soil fill material is recommended for trench backfill. Care should be taken not to use free draining granular material, to prevent the backfilled trench from becoming a french drain and piping surface or subsurface water beneath structures, pipelines, or pavements. If a higher class bedding material is required for the pipelines, a lean concrete bedding will limit water intrusion into the trench and will not require compaction after placement. The soil backfill should be placed in approximately 4- to 6-inch loose lifts. The density and moisture content should be as recommended for fill in Section 8.2, Placement and Compaction, of this report. A minimum of one field density test should be taken per lift for each 150 linear feet of trench, with a minimum of 2 tests per lift.

8.4 Excavation

It is anticipated that onsite soils can be excavated with standard earthmoving equipment. The side slopes of excavations through the overburden soils should be made in such a manner to provide for their stability during construction. Existing structures, pipelines or other facilities, which are constructed prior to or during the currently proposed construction and which require excavation, should be protected from loss of end bearing or lateral support.

Temporary construction slopes and/or permanent embankment slopes should be protected from surface runoff water. Site grading should be designed to allow drainage at planned areas where erosion protection is provided, instead of allowing surface water to flow down unprotected slopes.

Permanent slopes at the site should be as flat as practical to reduce creep and occurrence of shallow slides. The following slope angles are recommended as maximums.

TABLE 8.4-1 Maximum Slope Angles	
Height (ft.)	Horizontal to Vertical
0 – 3	1:1
3 – 6	2:1
6 – 9	3:1
> 9	4:1

The above angles refer to the total height of a slope. Site improvement should be maintained away from the top of the slope to reduce the possibility of damage due to creep or shallow slides.

Trench safety recommendations are beyond the scope of this report. The contractor must comply with all applicable safety regulations concerning trench safety and excavations including, but not limited to, OSHA regulations.

8.5 Acceptance of Imported Fill

Any soil imported from off-site sources should be tested for compliance with the recommendations for the particular application and approved by the project geotechnical engineer prior to the materials being used. The owner should also require the contractor to obtain a written, notarized certification from the landowner of each proposed off-site soil borrow source stating that to the best of the landowner's knowledge and belief there has never been contamination of the borrow source site with hazardous or toxic materials. The certification should be furnished to the owner prior to proceeding to furnish soils to the site. Soil materials derived from the excavation of underground petroleum storage tanks should not be used as fill on this project.

8.6 Soil Corrosion Potential

Specific testing for soil corrosion potential was not included in the scope of this study. However, based upon past experience on other projects in the vicinity, the soils at this site may be corrosive. Standard construction practices for protecting metal pipe and similar facilities in contact with these soils should be used.

8.7 Erosion and Sediment Control

All disturbed areas should be protected from erosion and sedimentation during construction, and all permanent slopes and other areas subject to erosion or sedimentation should be provided with

permanent erosion and sediment control facilities. All applicable ordinances and codes regarding erosion and sediment control should be followed.

9.0 CONCRETE WALKS

9.1 Subgrade Preparation

Surface soils encountered at this site consist of high plasticity clays. The high plasticity clays are subject to loss in support value with the moisture increases which occur beneath pavement sections. They react with hydrated lime, which serves to improve and maintain their support value. Treatment of these soils with hydrated lime will improve their subgrade characteristics to support area paving. However, most walks are lightly loaded and do not require lime-stabilization for strength. Scarification, moistening as required, and recompaction will suffice.

Lime treatment is recommended for subgrade areas underlain by plastic clays, with a Plasticity Index of typically 20 or more, to support Portland cement concrete subject to vehicle or truck traffic. This office should be contacted for additional recommendations if such design parameters are required.

Prior to compaction, the subgrade should be proofrolled with heavy pneumatic equipment. Any soft or pumping areas should be undercut to a firm subgrade and properly backfilled as described in the Earthwork section. The subgrade should be scarified to a minimum depth of 6 inches and uniformly compacted to a minimum of 95 percent of Standard Proctor density (ASTM D 698), near minus 2 to plus 4 percentage points of the optimum moisture content determined by that test. It then should be protected and maintained in a moist condition until the pavement is placed.

Surface drainage is critical to the performance of this pavement. Water should be allowed to exit the pavement surface quickly. Water should not be allowed to pond at the pavement edges.

9.2 General Pavement and Flatwork Considerations

Periodic maintenance should be anticipated. This maintenance should consist of sealing cracks and timely repair of isolated distressed areas.

The design of the pavement drainage and grading should consider the potential for differential ground movement due to future soil swelling of up to 5 inches. Flatwork areas will also be subject

to ground movement as discussed. Readers should understand that a slab situated on grade can heave considerably if placed on dry, expansive clays. Reductions in anticipated movements can be achieved by using methods developed in this area to reduce on-grade slab movements. The more commonly used methods consist of placing non-expansive select fill beneath on-grade elements and moisture conditioning the soils. The use of these methods will not eliminate the risk of unacceptable movements. As previously discussed, remedial measures presented in Section 4.3 should be considered in flatwork areas, particularly in areas immediately adjacent to the proposed pavilion.

In order to minimize rainwater infiltration through the pavement surface, and thereby minimizing future upward movement of the pavement slabs, all cracks and joints in the pavement should be sealed on a routine basis after construction.

10.0 CONSTRUCTION OBSERVATIONS

In any geotechnical investigation, the design recommendations are based on a limited amount of information about the subsurface conditions. In the analysis, the geotechnical engineer must assume the subsurface conditions are similar to the conditions encountered in the borings. However, quite often during construction anomalies in the subsurface conditions are revealed. Therefore, it is recommended that CMJ Engineering, Inc. be retained to observe earthwork and foundation installation and perform materials evaluation during the construction phase of the project. This enables the geotechnical engineer to stay abreast of the project and to be readily available to evaluate unanticipated conditions, to conduct additional tests if required and, when necessary, to recommend alternative solutions to unanticipated conditions. Until these construction phase services are performed by the project geotechnical engineer, the recommendations contained in this report on such items as final foundation bearing elevations, proper soil moisture condition, and other such subsurface related recommendations should be considered as preliminary.

It is proposed that construction phase observation and materials testing commence by the project geotechnical engineer at the outset of the project. Experience has shown that the most suitable method for procuring these services is for the owner or the owner's design engineers to contract directly with the project geotechnical engineer. This results in a clear, direct line of communication between the owner and the owner's design engineers and the geotechnical engineer.

11.0 REPORT CLOSURE

The boring logs shown in this report contain information related to the types of soil encountered at specific locations and times and show lines delineating the interface between these materials. The logs also contain our field representative's interpretation of conditions that are believed to exist in those depth intervals between the actual samples taken. Therefore, these boring logs contain both factual and interpretive information. Laboratory soil classification tests were also performed on samples from selected depths in the borings. The results of these tests, along with visual-manual procedures were used to generally classify each stratum. Therefore, it should be understood that the classification data on the logs of borings represent visual estimates of classifications for those portions of each stratum on which the full range of laboratory soil classification tests were not performed. It is not implied that these logs are representative of subsurface conditions at other locations and times.

With regard to ground-water conditions, this report presents data on ground-water levels as they were observed during the course of the field work. In particular, water level readings have been made in the borings at the times and under conditions stated in the text of the report and on the boring logs. It should be noted that fluctuations in the level of the ground-water table can occur with passage of time due to variations in rainfall, temperature and other factors. Also, this report does not include quantitative information on rates of flow of ground water into excavations, on pumping capacities necessary to dewater the excavations, or on methods of dewatering excavations. Unanticipated soil conditions at a construction site are commonly encountered and cannot be fully predicted by mere soil samples, test borings or test pits. Such unexpected conditions frequently require that additional expenditures be made by the owner to attain a properly designed and constructed project. Therefore, provision for some contingency fund is recommended to accommodate such potential extra cost.

The analyses, conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our field investigation and further on the assumption that the exploratory borings are representative of the subsurface conditions throughout the site; that is, the subsurface conditions everywhere are not significantly different from those disclosed by the borings at the time they were completed. If, during construction, different subsurface conditions from those encountered in our borings are observed, or appear to be present in excavations, we must be advised promptly so that we can review these conditions and reconsider our recommendations where necessary. If there is a substantial lapse of time between submission of

this report and the start of the work at the site, if conditions have changed due either to natural causes or to construction operations at or adjacent to the site, or if structure locations, structural loads or finish grades are changed, we urge that we be promptly informed and retained to review our report to determine the applicability of the conclusions and recommendations, considering the changed conditions and/or time lapse

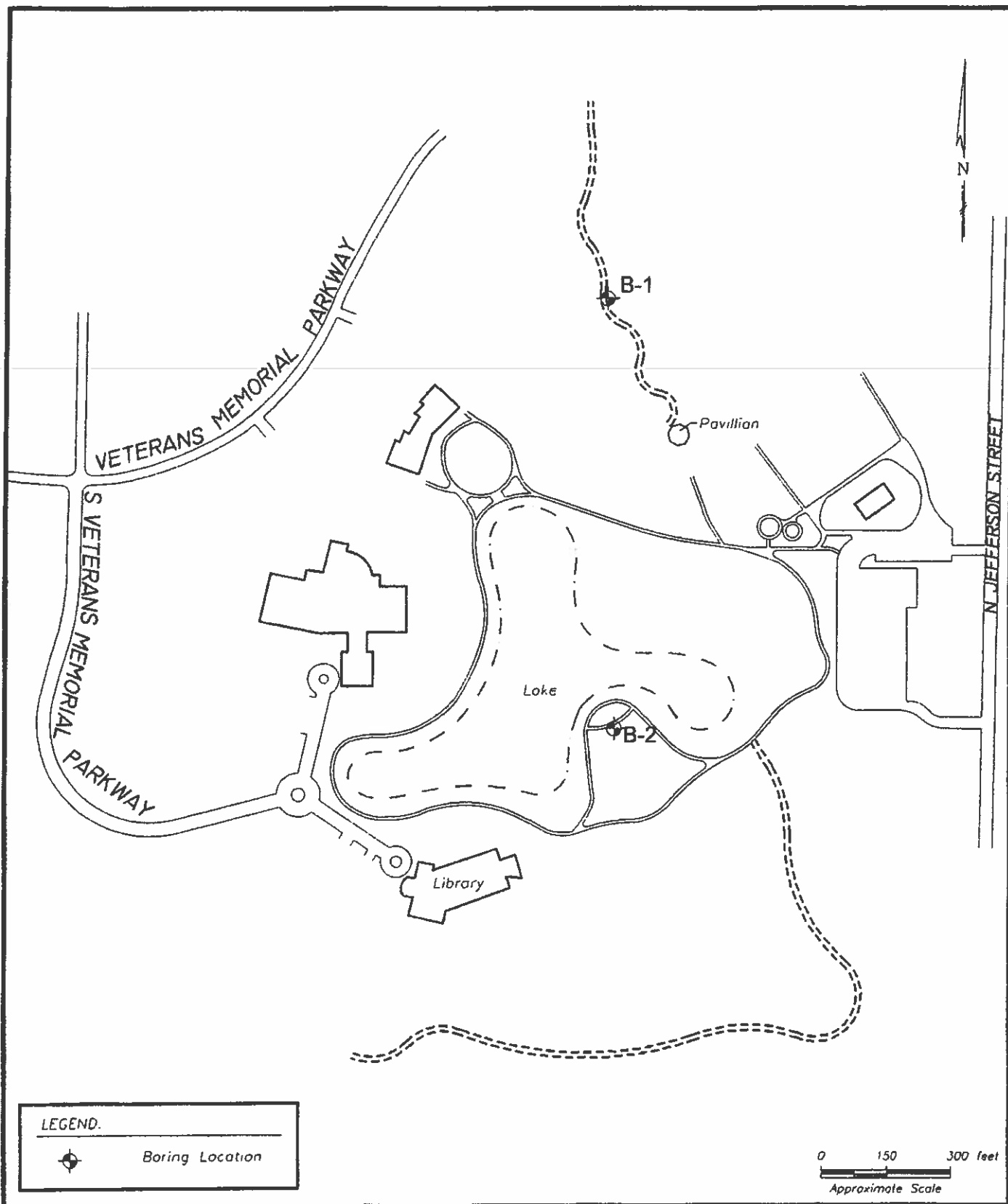
Further, it is urged that CMJ Engineering, Inc. be retained to review those portions of the plans and specifications for this particular project that pertain to earthwork and foundations as a means to determine whether the plans and specifications are consistent with the recommendations contained in this report. In addition, we are available to observe construction, particularly the compaction of structural fill, or backfill and the construction of foundations as recommended in the report, and such other field observations as might be necessary.

The scope of our services did not include any environmental assessment or investigation for the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, ground water or air, on or below or around the site.

This report has been prepared for use in developing an overall design concept. Paragraphs, statements, test results, boring logs, diagrams, etc. should not be taken out of context, nor utilized without a knowledge and awareness of their intent within the overall concept of this report. The reproduction of this report, or any part thereof, supplied to persons other than the owner, should indicate that this study was made for design purposes only and that verification of the subsurface conditions for purposes of determining difficulty of excavation, trafficability, etc. are responsibilities of the contractor.

This report has been prepared for the exclusive use of Halff Associates, Inc. for specific application to design of this project. The only warranty made by us in connection with the services provided is that we have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, expressed or implied, is made or intended. These recommendations should be reviewed once a grading plan is finalized.

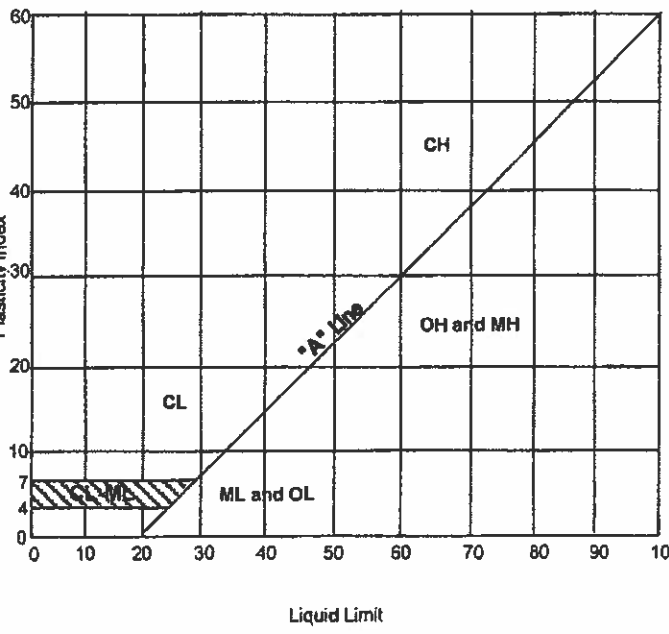
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CMJ PROJECT No. 117-10-128

PLAN OF BORINGS LANCASTER COMMUNITY PARK IMPROVEMENTS LANCASTER, TEXAS

PLATE
A.1

Major Divisions			Grp Sym.	Typical Names	Laboratory Classification Criteria		
Coarse-grained soils (more than half of the material is larger than No. 200 sieve size)					Determine percentages of sand and gravel from grain size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent..... GW, GP, SW, SP More than 12 percent..... GM, GC, SM, SC 5 to 12 percent..... Borderline cases requiring dual symbols		
Fine-grained soils (More than half of material is smaller than No. 200 sieve)					 <p>Plasticity Index</p> <p>Liquid Limit</p> <p>Plasticity Chart</p>		

SOIL OR ROCK TYPES										
	GRAVEL		LEAN CLAY		LIMESTONE					
	SAND		SANDY		SHALE					
	SILT		SILTY		SANDSTONE					
	CLAYEY		HIGHLY PLASTIC CLAY		CONGLOMERATE	Shelby Tube	Auger	Split Spoon	Rock Core	Cone Pen
									No Recovery	

TERMS DESCRIBING CONSISTENCY, CONDITION, AND STRUCTURE OF SOIL

Fine Grained Soils (More than 50% Passing No. 200 Sieve)

Descriptive Item	Penetrometer Reading, (tsf)
Soft	0.0 to 1.0
Firm	1.0 to 1.5
Stiff	1.5 to 3.0
Very Stiff	3.0 to 4.5
Hard	4.5+

Coarse Grained Soils (More than 50% Retained on No. 200 Sieve)

Penetration Resistance (blows/foot)	Descriptive Item	Relative Density
0 to 4	Very Loose	0 to 20%
4 to 10	Loose	20 to 40%
10 to 30	Medium Dense	40 to 70%
30 to 50	Dense	70 to 90%
Over 50	Very Dense	90 to 100%

Soil Structure

Calcareous	Contains appreciable deposits of calcium carbonate; generally nodular
Slickensided	Having inclined planes of weakness that are slick and glossy in appearance
Laminated	Composed of thin layers of varying color or texture
Fissured	Containing cracks, sometimes filled with fine sand or silt
Interbedded	Composed of alternate layers of different soil types, usually in approximately equal proportions

TERMS DESCRIBING PHYSICAL PROPERTIES OF ROCK

Hardness and Degree of Cementation

Very Soft or Plastic	Can be remolded in hand; corresponds in consistency up to very stiff in soils
Soft	Can be scratched with fingernail
Moderately Hard	Can be scratched easily with knife; cannot be scratched with fingernail
Hard	Difficult to scratch with knife
Very Hard	Cannot be scratched with knife
Poorly Cemented or Friable	Easily crumbled
Cemented	Bound together by chemically precipitated material; Quartz, calcite, dolomite, siderite, and iron oxide are common cementing materials

Degree of Weathering

Unweathered	Rock in its natural state before being exposed to atmospheric agents
Slightly Weathered	Noted predominantly by color change with no disintegrated zones
Weathered	Complete color change with zones of slightly decomposed rock
Extremely Weathered	Complete color change with consistency, texture, and general appearance approaching soil

KEY TO CLASSIFICATION AND SYMBOLS

PLATE A.3

Project No 117-10-128		Boring No B-1		Project Lancaster Community Park Improvements Lancaster, Texas	
Location See Plate A.1		Water Observations Dry during drilling; dry at completion			
Completion Depth 10.0'		Completion Date 5-24-10			
Surface Elevation		Type ATV-47, w/ CFA			
Depth, Ft.	Symbol	Samples	Stratum Description		
					REC %
					RQD %
					Blows/Ft. or Pen Reading, T.S.F.
					Passing No 200 Sieve, %
					Liquid Limit, %
					Plastic Limit, %
					Plasticity Index
					Moisture Content, %
					Unit Dry Wt. Lbs./Cu. Ft.
					Unconfined Compression Pounds/Sq. Ft.
			<u>CLAY</u> dark brown w/ calcareous nodules, stiff		2.25
					2.0
					2.25
					2.25
					2.25
			<u>CLAY</u> , brown and gray, w/ calcareous nodules and ironstone nodules stiff		2.25
					2.25

LOG OF BORING 117-10-128.GPJ CMJ.GDT 8/9/10

LOG OF BORING NO. **B-1****PLATE A.4**

FREE SWELL TEST RESULTS

Project: Lancaster Community Park Improvements
Lancaster, Texas

Project No.: 117-10-128

Sample No.	Depth Interval (ft)	Sample Description	Liquid Limit (%)	Plastic Limit (%)	Shrinkage Limit (%)	Moisture Content (%)		Free Swell (%)
						Initial	Final	
B-2	9 - 10	Clay	65	21	44	25.7	28.1	0.2

Free swell tests performed at approximate overburden pressure

APPENDIX B

SOIL MODIFICATION WATER PRESSURE INJECTION GUIDELINES

GEOTECHNICAL INVESTIGATION LANCASTER COMMUNITY PARK IMPROVEMENTS LANCASTER, TEXAS

CMJ REPORT NO. 117-10-128

Purpose

The purpose of these recommendations is to obtain a relatively uniform, moist, stable zone of soil beneath the proposed structure. Due to the wide variation in quality of injection subcontractors, water pressure injection is not recommended as a soil moistening technique unless a full-time laboratory inspector of CMJ Engineering, Inc. is retained.

Material

1. The slurry is to consist of clean fresh water and surfactant and shall be continuously agitated to ensure uniformity of mixture.
2. A nonionic surfactant (wetting agent) should be used according to manufacturer's recommendations, but in no case should proportions be less than one part (undiluted) per 3,500 gallons water.

Application

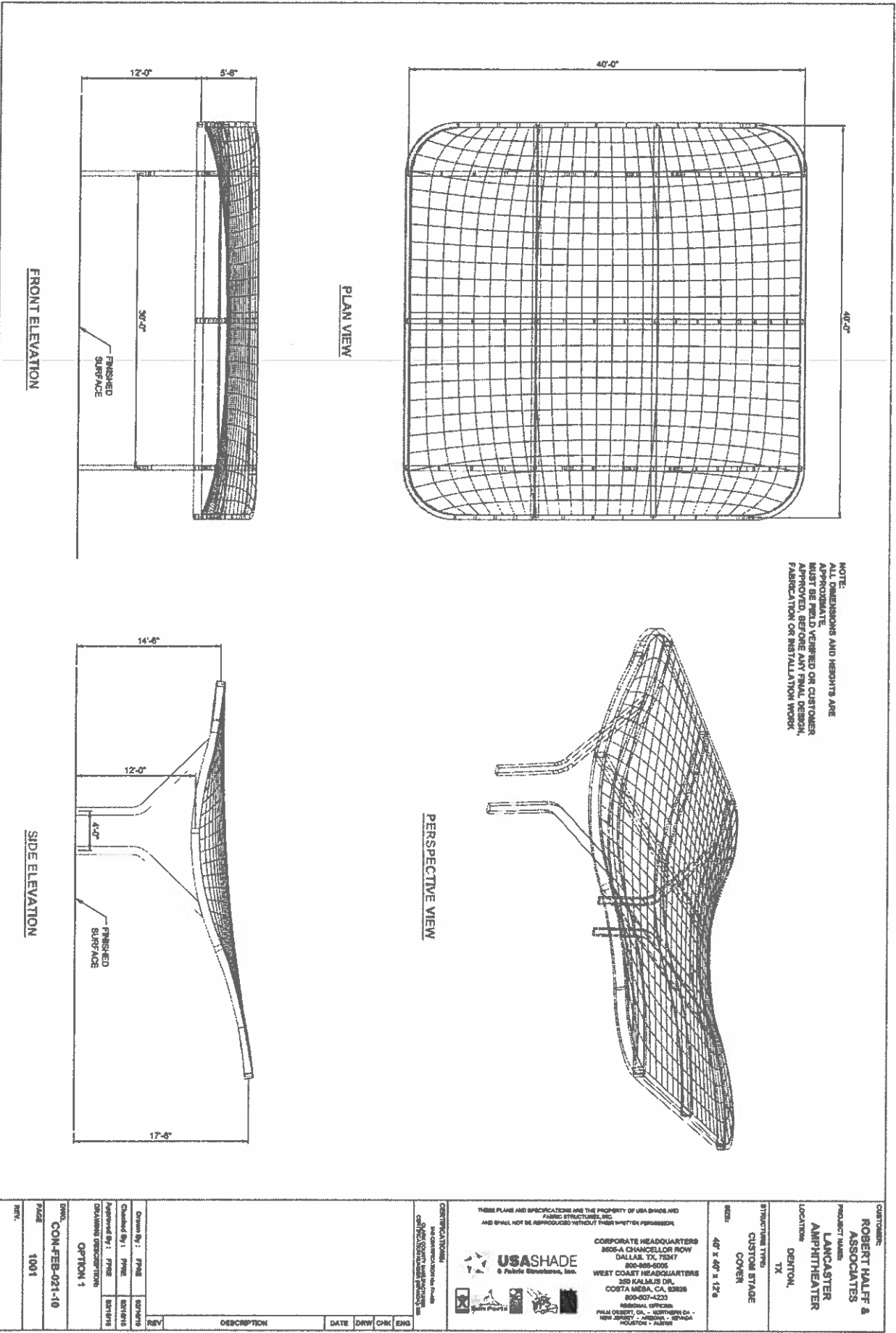
1. Provide injection work after the subgrade has been under cut to the desired depths and prior to fill placement, installation of underground utilities and pavement.
2. Injection vehicle should have injection pipes spaced on 5-foot center, and each injection pipe should be capable of exerting a minimum penetration force of 10,000 psi. Force injection pipe into the soil; do not wash down by scouring action of fluid. Furnish track-mounted injection vehicle in order to traverse the ground under its own power, or if rubber tire-mounted vehicle is used, provide a track-mounted machine where necessary to pull injection vehicle through mud.

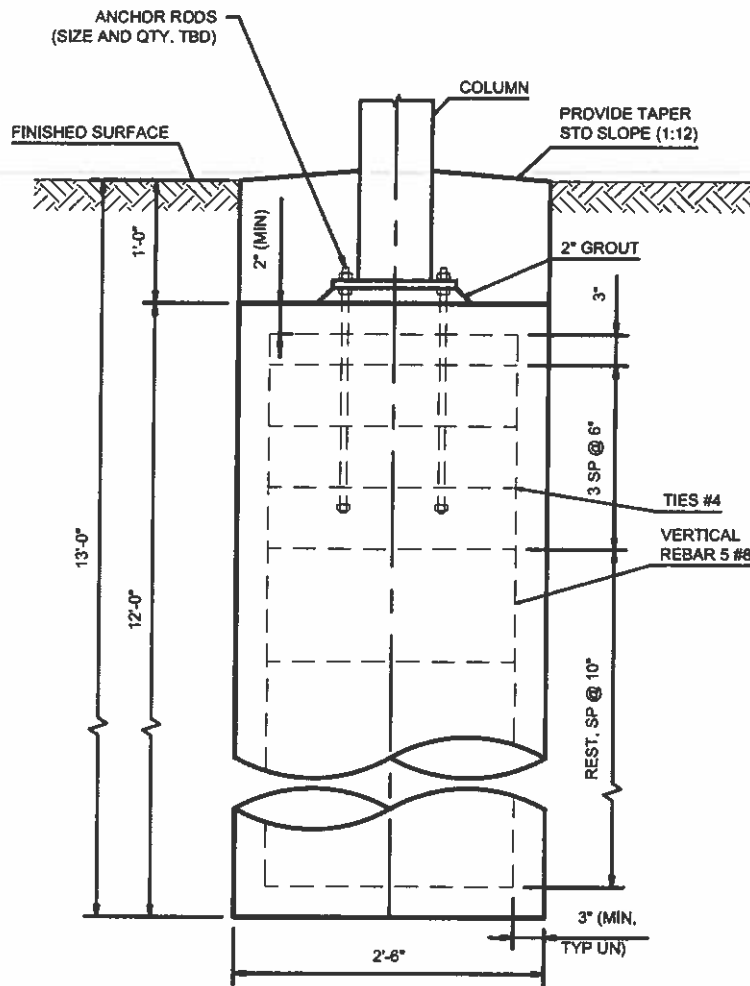
PLATE B.1

3. Continue injection of fluid until refusal at all probes (i.e., until soil will not take any more and fluid is running freely on the surface, either out of previous injection holes or has fractured the ground in several places around refusal). If this occurs around any probe, cut this probe off so that water can be properly injected through the remaining probes until refusal occurs for all probes.
4. Injection pipes should penetrate the soil in approximately 12-inch intervals, injecting to refusal at each interval to a total depth of 5 feet.
5. Lower portion of injection pipe should consist of a hole pattern that will uniformly disperse fluid throughout the entire depth. Injection vehicle should be fitted with individual cutoff valves for each probe. At each 12-inch interval, each valve should be cut off and on to assure that each probe is not blocked and that injection fluid is flowing. If one of two probes are blocked, cut the others off so that the added pressure will clear out the blockage.
6. Do not exceed five feet on center each way for injection spacing. Each consecutive injection should be five feet in center and spaced 2-1/2 feet offset in two orthogonal directions from the previous injection.
7. Adjust injection pressures to inject the greatest quantity of fluid possible within a pressure range of 50 - 100 psi. In order to assure that pressure is within this specified range, equip each injection vehicle with an accurate pressure gauge attached to the manifold (the pipe fitting on which the probe valves are attached).
8. Extend injection five feet outside the perimeter of the structure.
9. At a minimum, three water injections should be performed prior to testing.
10. The swell potential, moisture content, and other soil properties will be evaluated to determine acceptance of injected areas. The test results should be used to determine if additional water injections are required.
12. Repeat injections with water and surfactant five feet on center. Each consecutive water and surfactant injection should extend to a depth of 5 feet, injected as described above.
13. A minimum of 24 hours should elapse between each injection application in any one area to allow for moisture absorption.
14. Upon completion of the final pressure injection, compact the exposed surface to between 93% and 98% percent of the maximum dry density at a minimum of three percentage points above the optimum value.

Observation and Testing

1. A full-time laboratory technician should be present throughout the injection operations. Undisturbed samples should be taken at one-foot intervals to the total depth injected from one test hole per 5,000 square feet of injected area (minimum of two test borings per building). Adjustments in the testing program should be at the discretion of the testing engineer.
2. The moisture content of the soils shall be evaluated by the owner's designated geotechnical engineer on the basis of laboratory tests on tube samples (not cuttings) obtained from the borings. A minimum of two free swell tests should be performed per test hole. Samples will be tested at the approximate overburden pressure of the sample depth.





PRELIMINARY FOOTING

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USASHADE
& Fabric Structures, Inc.



DRAWING NAME

PRELIMINARY FOOTING DETAIL

PROJECT NAME

LANCASTER AMPHITHEATER

PROJECT No.

DRAWING No.

PAGE

CON-FEB-021-10

1010

SIZE

SCALE

REV

DRAWN BY: FPRE

05/14/10

A4

NONE

CHECKED BY: FPRE

APPROVED BY: FPRE

803

REV

DESCRIPTION

DATE

DRW

CHK

ENG

TECHNICAL REQUIREMENTS



Lancaster Community Park Amphitheater

A Project of The City of Lancaster, Texas
211 N. Henry St.
Lancaster, TX 75146

SECTION 011000

SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

1.2 PROJECT INFORMATION

A. Project Identification: Lancaster Community Park Amphitheater.

1. Project Location: Lancaster, Texas.

B. Owner: City of Lancaster, Texas.

C. Architect: Halff Associates.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

1. Includes expansion and renovations with improvements at the existing Lancaster Community Park in Lancaster, Texas.

B. Type of Contract.

1. Project will be constructed under a single prime contract.

1.4 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1.5 COORDINATION WITH OCCUPANTS

- A. **Owner Limited Occupancy of Completed Areas of Construction:** Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.6 WORK RESTRICTIONS

- A. **Work Restrictions, General:** Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.
- B. **On-Site Work Hours:** Limit work on site to legal working hours of 6:00 a.m. to 9:00 p.m., Monday through Saturday, except as otherwise indicated by city ordinance. During the construction period the Owner will make use of the Park's existing improvements. Scheduled athletic events on site and at the adjacent stadium should not be disrupted by construction activities.
- C. **Existing Utility Interruptions:** Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than two days in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. **Noise, Vibration, and Odors:** Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner or adjacent landowners' occupancy with Owner.
1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. **Smoking** is not permitted, except in the parking lot.
- F. **Controlled Substances:** Use of other controlled substances on the Project site is not permitted.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.

1.8 COMPLETENESS REQUIREMENT

- A. The intent of the contract documents is to require all items necessary for the proper execution and completion of the work by the Contractor. The contract documents are complimentary and by their intent a complete and usable work product is expected to be provided. To meet this requirement the Contractor is expected to provide construction in place to include that which is indicated in the contract documents and that which may be reasonable expected to be required to make the work complete in all respects and consistent with established and accepted construction practices.
- B. It is not the intent of this article to require scope-of-work which is not required for completeness or which is not reasonably inferable through an examination of the contract documents

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100

ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Owner's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Owner from the Owner's designated vendor.

1.3 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight, and delivery to Project site.

- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor and installation, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the allowance.
- C. Unless otherwise indicated, Contractor's costs for overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.
- D. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.
- E. At Project closeout, credit unused amounts remaining in the allowance to Owner by Change Order. Include proportional unused amounts of overhead and profit as a credit to the Owner.

1.6 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance.
 - 1. Include installation costs in purchase amount as indicated as part of the allowance.
 - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 - 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents if the purchase order amount exceeds the allowance.
 - 1. Do not include Contractor's proportional indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Lump-Sum Allowance. Include the sum of \$103,700 – One Hundred Three thousand Seven Hundred Dollars: For Custom Stage Structure to be engineered, shipped and installed, by Owner's designated vendor.
1. This allowance includes engineering, material cost, receiving, handling, and above grade installation.
 2. This allowance excludes structure footing installation.

END OF SECTION 012100

SECTION 012200

UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

- A. Unit prices are required to be recorded as an accompaniment to the Bid Form at the time of bidding. Unit prices are requested so that the Owner may ascertain whether the bidder has reasonably inferred from the documents the quantity of planting materials and other landscape items and has also established their value. The Architect will expect that the value of items for which unit prices are requested will agree with the material cost of the plant materials when indicated on the Schedule of Values. It is not the Owner's intent to consider the purchase of additional plant materials based upon the information provided by the contractor in the Unit Prices List.

1.3 PROCEDURES

- A. Unit prices for plants include all listed plant and landscaping materials, and include cost for delivery to the project site, but do not include installation. Please note that the Contract amount does include the cost of the plant material, its delivery and its installation. Unit prices will include that part of the Contract amount which are the plant or landscaping material, and its cost for delivery.
- B. Plant material selection will be made in accordance with Landscape Architect's best practice, to include tagging of candidate materials by contractor at acceptable nursery, and acceptance of tagged materials by Landscape Architect prior to delivery to project site.
- C. Unit Prices for either providing general site fill in excess of that stockpiled for the Contractor's use, or removing excess general site fill material stockpiled by the Owner for the Contractor's use are for the purchase and delivery of imported material or for the removal to a disposal site.
- D. List of Unit Prices: A schedule of unit prices is included with the Proposal Form.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012200

SECTION 012300

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ADD ALTERNATES

- A. Alternate No. 1: Add installation of concrete at the southern trail extension in lieu decomposed granite.

1. Base Bid: 1,865 linear feet x 8 feet wide decomposed granite trail extension.
2. Alternate: Upgrade to 1,865 linear feet x 8 feet wide concrete trail extension.
3. Refer to Drawings for configuration of trail layout.

- B. Alternate No. 2: Add installation of (5) Five steel Benches with concrete base.

1. Base Bid: No benches with concrete base.
2. Alternate(5) Five steel Benches with concrete base.
3. Refer to Drawings for location, configuration, and related details and refer to specifications section 329550 for product information and source.

- C. Alternate No. 3: Add installation of (5) Five steel trash receptacles with concrete base.

1. Base Bid: No trash receptacles with concrete base.
2. Alternate(5) Five steel trash receptacles with concrete base.
3. Refer to Drawings for location, configuration, and related details and refer to specifications section 329550 for product information and source.

END OF SECTION 012300

SECTION 013100

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. Coordination
2. Requests for Information (RFIs).
3. Project meetings.

1.2 DEFINITIONS

- A. RFI: Request Contractor seeking information during construction.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.

7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

1.4 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

- C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow ten working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

- a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- D. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly, with not less than the following:
 - 1. Project name.
 - 2. Name and address of Contractor.
 - 3. Name and address of Architect.
 - 4. RFI number including RFIs that were dropped and not submitted.
 - 5. RFI description.
 - 6. Date the RFI was submitted.
 - 7. Date Architect's response was received.
 - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 - 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.5 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.
- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.
 - 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.

- i. Distribution of the Contract Documents.
- j. Submittal procedures.
- k. Sustainable design requirements.
- l. Preparation of record documents.
- m. Use of the premise .
- n. Work restrictions.
- o. Working hours.
- p. Owner's occupancy requirements.
- q. Responsibility for temporary facilities and controls.
- r. Procedures for moisture and mold control.
- s. Procedures for disruptions and shutdowns.
- t. Construction waste management and recycling.
- u. Parking availability.
- v. Office, work, and storage areas.
- w. Equipment deliveries and priorities.
- x. First aid.
- y. Security.
- z. Progress cleaning.

- 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, of scheduled meeting dates.
- 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

- a. Contract Documents.
- b. Options.
- c. Related RFIs.
- d. Related Change Orders.
- e. Purchases.
- f. Deliveries.
- g. Submittals.
- h. Review of mockups.
- i. Possible conflicts.
- j. Compatibility problems.
- k. Time schedules.
- l. Weather limitations.
- m. Manufacturer's written recommendations.
- n. Warranty requirements.
- o. Compatibility of materials.
- p. Acceptability of substrates.
- q. Temporary facilities and controls.
- r. Space and access limitations.
- s. Regulations of authorities having jurisdiction.
- t. Testing and inspecting requirements.
- u. Installation procedures.
- v. Coordination with other work.
- w. Required performance results.
- x. Protection of adjacent work.

- y. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at biweekly intervals.
- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
 - 3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

- a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013300
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
-

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing submittals and Project record drawings. If the contractor assumes the responsibility for producing record drawings in CADD File Format same as Architect

Or

Architect will provide individual CADD File Sheets to contractor at a cost of \$30 per sheet.

- a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
- b. Contractor shall execute a data licensing agreement in the Architects form.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 30 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Other necessary identification.
- E. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.

- a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., FPER-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., FPER-061000.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Include the following information on an inserted cover sheet:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of firm or entity that prepared submittal.
 - g. Name of subcontractor.
 - h. Name of supplier.
 - i. Name of manufacturer.
 - j. Number and title of appropriate Specification Section.
 - k. Drawing number and detail references, as appropriate.
 - l. Location(s) where product is to be installed, as appropriate.
 - m. Related physical samples submitted directly.
 - n. Other necessary identification.
- F. Options: Identify options requiring selection by the Architect.
- G. Deviations: Specifically identify deviations from the Contract Documents on submittals.
- H. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- I. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
 1. Transmittal Form: Use acceptable form.
 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

- L. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
2. Action Submittals: Submit electronically.
3. Informational Submittals: Submit electronically.
4. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
6. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.

- d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before or concurrent with Samples.
 - 6. Submit Product Data in the following format:
 - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based upon Architect's digital data drawing files is otherwise permitted.
- 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches .
 - 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 - 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 - 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

- a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned
 - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Submit product schedule in the following format:
 - a. PDF electronic file.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design.
 - 1. Submit subcontract list in the following format:
 - a. PDF electronic file.
- H. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- I. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- J. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.
- K. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

- L. **Manufacturer Certificates:** Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 - M. **Product Certificates:** Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 - N. **Material Certificates:** Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 - O. **Material Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
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- P. **Product Test Reports:** Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
 - Q. **Schedule of Tests and Inspections:** Comply with requirements specified in Division 01 Section "Quality Requirements."
 - R. **Preconstruction Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
 - S. **Compatibility Test Reports:** Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
 - T. **Field Test Reports:** Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
 - U. **Maintenance Data:** Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
 - V. **Design Data:** Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. **Performance and Design Criteria:** Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally-signed PDF electronic file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect. Submit only complete submittals which meet all of the specified submittal requirements.
- B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review incomplete submittals or submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 014000

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

- G. **Field Quality-Control Testing:** Tests and inspections that are performed on-site for installation of the Work and for completed Work.
 - H. **Testing Agency:** An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
 - I. **Installer/Applicator/Erector:** Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.
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- J. **Experienced:** When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. **Referenced Standards:** If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. **Contractor's Statement of Responsibility:** When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems.
 - 1. Seismic-force resisting system, designated seismic system, or component listed in the designated seismic system quality assurance plan prepared by the Architect.
 - 2. Main wind-force resisting system or a wind-resisting component listed in the wind-force-resisting system quality assurance plan prepared by the Architect.
- B. **Testing Agency Qualifications:** For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 REPORTS AND DOCUMENTS

- A. **Test and Inspection Reports:** Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. **Manufacturer's Field Reports:** Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

C. **Permits, Licenses, and Certificates:** For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. **General:** Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329 ; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - d. When testing is complete, remove test specimens, assemblies, mockups, do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's and Construction Manager's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL

- A. Contractor Responsibilities: All quality control Tests and inspections are paid for by the Owner. Contractor must perform additional quality-control coordination.
 1. Owner will engage a qualified testing agency to perform these quality-control services.
 2. Contractor must notify Owner's testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Testing Agency will submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Contractor must submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, Contractor must engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- C. Retesting/Reinspecting: Contractor must provide retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- E. Associated Services: Contractor must cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014536

PROTECTION OF THE ENVIRONMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and applicable Provisions of the Contract, including General and Supplementary Conditions, and applicable Division Specification Sections apply to this Section.

1.2 SCOPE OF WORK

- A. The Contractor, in executing the work, shall maintain all work areas on and off the site free from environmental pollution that would be in violation of any federal, state, or local regulations.

1.3 PROTECTION OF STORM DRAINAGE AND SEWER SYSTEM

- A. Take adequate measures to prevent the impairment of the operation of the existing storm drainage and sewer systems. Prevent construction materials, concrete, earth, or other debris from entering any storm drainage and sewer system. All storm or sewage flow interfering with construction and requiring diversion shall be diverted by the Contractor to a point acceptable to the Owner.

1.4 PROTECTION OF WATERWAYS

- A. The Contractor shall observe the rules and regulations of the State of Texas and agencies of the U.S. Government prohibiting the pollution of any lake, stream, river, or wetland by the dumping of any refuse, rubbish, dredge material, or debris therein.
- B. Contractors are specifically cautioned that disposal of materials into any waters of the State must conform to City of Lancaster, State of Texas, and applicable Federal requirements.
- C. The Contractor shall be responsible for providing an approved method which will handle, carry through, or divert around his work all flows, including storm flows and flows created by construction activity, so as to prevent erosion resulting in silting of waterways or flooding damage to the property. Suggested methods for erosion control are shown in the drawings. Contractor shall prepare and submit a Storm Water Pollution Prevention Plan (SWP3) for Owner's approval prior to beginning work. Refer to Section 015713 for Erosion Control Guidelines and Example SWP3.
- D. Contractor shall comply with the procedures outlined in the U.S. Environmental Protection Agency manuals entitled "Guidelines for Erosion and Sedimentation Control Planning and Implementation" and "Processes, Procedures and Methods to Control Pollution Resulting from All Construction Activity."

1.5 DISPOSAL OF WASTE MATERIAL

- A. The Contractor shall make his own arrangements for disposal of waste materials subject to submission of proof to the Owner that owner(s) of the proposed site(s) has a valid fill permit issued by the appropriate governmental agency and submission of a haul route plan including a map of the proposed route(s).
- B. Unacceptable disposal sites include, but are not limited to, sites which have a detrimental effect on surface water or groundwater quality.

- C. The Owner, at his discretion, may suspend operation of the Contractor for alleged non-compliance with Texas Water Commission, Texas Department of Health, or Environmental Protection Agency Regulations.

1.6 PROTECTION OF AIR QUALITY

- A. Air pollution shall be minimized by wetting down bare soils during windy periods, by requiring the use of properly operating combustion emission control devices on construction vehicles and equipment used by Contractor by encouraging the shutdown of motorized equipment not actually in use, and by other means requested by Owner.
- B. Trash burning will not be permitted on the construction site.

- C. If temporary heating devices are necessary for protection of the work, such devices shall be of a type that will not cause pollution of the air.

1.7 USE OF CHEMICALS

- A. All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, reactant, or of other classification, must show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture, or any other applicable regulatory agency. Use of all such chemicals and disposal of residues shall be in conformance with the manufacturer's instructions. Petroleum products shall be identified and stored in safety approved containers.

1.8 NOISE AND DUST CONTROL

- A. The Contractor shall so conduct all his operations that they will cause the least annoyance to the residents in the vicinity of the work and shall comply with all applicable local ordinances. The compressors, hoists, and other apparatus shall be equipped with such mechanical devices as may be necessary to minimize noise and dust. Compressors shall be equipped with silencers on intake lines. All gasoline or oil operated equipment shall be equipped with silencers or mufflers on intake and exhaust lines. Storage bins and hoppers shall be lined with material that will deaden the sounds if directed by the Owner.
- B. The operation of dumping materials and of carrying materials away in trucks shall be so conducted as to cause a minimum of noise and dust. Vehicles carrying sands, dirt, rock, concrete, or other material shall be routed over such streets as will cause the least annoyance to the public and shall not be operated on public streets between the hours of 6:00 p.m and 7:00 a.m. or on Saturdays, Sundays, or legal holidays unless approved by the Owner and the City of Lancaster.
- C. All unpaved streets, roads, detours, or haul roads used in the construction area shall be given an approved dust-prevention treatment or periodically watered to prevent dust. Applicable environmental regulations for dust prevention shall be strictly enforced.
- D. Dust prevention treatment shall be performed to the satisfaction of the Owner.

1.9 MAINTENANCE AREA

- A. Concrete pad with area for oil changes and maintenance is required.
- B. Fuel storage areas will be protected from external flooding and internal spillage by a berm.
- C. If required for additional erosion control, wash area for trucks shall be maintained in conjunction

with stabilized construction entrance.

END OF SECTION 014536

SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
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1.2 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without payment of use charges, however the contractor must install a temporary meter to allow the Owner to monitor water use. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its

use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of, and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent ventilation system in new buildings, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction and clean HVAC system as required in Division 01 Section "Closeout Procedures."

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Toilets: Use of Owner's existing toilet facilities will not be permitted.
- E. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- H. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service overhead, unless otherwise indicated.
 2. Connect temporary service to Owner's existing power source, as directed by Owner.
- I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- J. Telephone Service: Provide temporary telephone service for each field office.
1. At each telephone, post a list of important telephone numbers.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Architect's office.
 - e. Engineers' offices.
 - f. Owner's office.
 - g. Principal subcontractors' field and home offices.
 2. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
- K. Electronic Communication Service: Provide a desktop computer and printer in the primary field office adequate for use by Architect and Owner to access project electronic documents and maintain electronic communications.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31 Section "Earth Moving."
 3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 32 Section "Asphalt Paving."
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
1. Identification Signs: Provide Project identification signs.
 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 3. Maintain and touchup signs so they are legible at all times.
- H. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- I. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.
- J. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings
- C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- E. Site Enclosure Fence: Before construction operations begin furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: At a minimum, to enclose areas where buildings are constructed
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
- H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 - 1. Do not load or install porous materials or components, or items with high organic content, into partially enclosed building.

2. Keep interior spaces reasonably clean and protected from water damage.
 3. Discard or replace water-damaged and wet material.
 4. Discard, replace or clean stored or installed material that begins to grow mold.
 5. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent ventilation systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 015713

TEMPORARY EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

PART 1 - GENERAL

1.0 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Divisions 1 Specification Sections, apply to this Section.

1.2 RELATED SECTIONS

- A. Applicable Sections of Division 1 - General Requirements.
- B. Applicable Sections of Division 31 – Earthwork.
- C. Applicable Sections of Division 32 – Exterior Improvement.
- D. Applicable Sections of Division 33 – Utilities.
- E. Applicable Sections of the Reference Specifications
- F. Special Provisions.

1.3 REGULATORY REQUIREMENTS

- A. NCTCOG Standard Specifications for Public Works Construction, latest edition, as modified in the Contract Documents.
- B. City of Lancaster Specifications for Storm Water Pollution Prevention.

1.4 REFERENCE SPECIFICATIONS

- A. All work covered in Divisions 31, 32, and 33 shall be governed by the latest edition of the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction as amended and/or supplemented by these specifications. These Specifications and Special Provisions govern the reference specification. Any item not modified or amended by these specifications shall be deemed correct in the reference specifications.
- B. Work not described herein or in the NCTCOG Standard Specifications shall be governed by the latest version of Texas Department of Transportation (TxDOT), Standard Specifications for Construction of Highways, Streets and Bridges.

1.5 SUBMITTALS

- A. Product Data:
 - 1. Silt fencing.
 - 2. Non-woven filter fabric.

1.6 MAINTENANCE

- A. Maintain erosion control devices as necessary. This includes any revisions or modifications to the

plan. Any work-required maintenance shall be the responsibility of the Contractor and shall not be a basis for additional compensation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Hay bales weigh a minimum of fifty (50) pounds and shall be at least thirty (30) inches in length. Bales shall be composed entirely of vegetable matter and be free of seeds. Binding shall be either wire or nylon string, jute or cotton binding is unacceptable. Bales shall be used for not more than two months before being replaced. However, if weather conditions cause biological degradation of the hay bales, they shall be replaced sooner than the two month time period to prevent a loss of structural integrity of the hay bale dike.
- B. Stone material, if used, shall consist of type "A" rip-rap conforming to SDHPT Standard Specification Item 432.4 and shall be placed as shown on the plans or in a layer of at least 12 inches thick.
- C. Geotextile Fabrics shall be a non-woven polypropylene fabric designed specifically for use as a soil filtration media and conforming to NCTCOG Standard Specifications for Public Works Construction.
- D. Geotextile Silt Fence Fabric shall be a nylon reinforced polypropylene fabric having a reinforcing cord running the entire length to the top edge of the fabric. The fabric must meet or exceed the requirements of the NCTCOG Standard Specifications for Public Works Construction.
- E. Fence Posts for Silt Fence shall be galvanized steel "T" posts of sufficient length to support the silt fence system.
- F. Woven Wire Support for Silt Fence: W1.4 x W1.4, 4" x 4", zinc coated (galvanized) steel woven wire fabric conforming to ASTM A116.

PART 3 - EXECUTION

- A. Locate and protect survey horizontal and vertical control.
- B. Erosion control measures and Contractor's plan shall be extended to include the on-site area where Contractor may borrow material.

3.1 TEMPORARY HAY BALE DIKE

- A. Install where shown on the on the Contractor's plan or as needed for erosion control.
- B. Hay bales shall be embedded a minimum of four (4) inches and securely anchored using 3/8-inch diameter steel stakes or 2" x 2" wood stakes driven through the bales into the ground a minimum of six (6) inches. Hay bales are to be placed directly adjacent to one another leaving no gap between them.

3.2 STABILIZED CONSTRUCTION ENTRANCE

- A. A temporary construction entrance shall be installed at any point where traffic will be entering or leaving the construction site to or from a public or campus right-of-way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking or flowing of sediment onto public or campus rights-of-way. The entrance must be properly graded or incorporate a drainage swale to prevent runoff from leaving the construction site. The length of the entrance shall be as required, but not less than one hundred (100) feet.

- B. The temporary construction entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public or campus rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or clean out of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto rights-of-way must be removed immediately by the Contractor.
- C. When necessary, wheels must be cleaned to remove sediment prior to entrance onto right-of-way. When washing is required, it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drain, ditch, or watercourse using approved methods.

3.3 SILT FENCE

- A. Silt fences shall consist of nylon reinforced polypropylene netting supported by woven wire mesh, W1.4 x W1.4, and galvanized steel posts set a minimum depth of 2 feet and spaced not more than 6 feet on center. A 6-inch wide trench is to be cut 6 inches deep at the toe of the fence on the uphill side to allow the fabric to be laid below the surface and backfilled with gravel. Fabric shall overlap at abutting ends a minimum of 3 feet and shall be joined such that no leakage or bypass occurs. Remove accumulated sediment when the depth reaches 6 inches.

3.4 ROCK CHECK DAM

- A. Rock check dams, if used, shall be constructed in perimeter channel as needed to reduce velocity in channels. Geotextile fabric shall be placed beneath the rock and shall conform to these specifications. Rock shall consist of Type "A" rip-rap conforming to these specifications.

3.5 DIVERSION DIKE

- A. Diversion dikes, if used, shall be installed prior to and maintained for the duration of construction and shall intercept no more than five (5) acres of runoff. Dikes shall have a minimum top width of 24" and a minimum height of compacted fill of 18" measured from the top of the existing ground at the upslope toe to top of the dike and having side slopes of 3:1 or flatter. The channel which is formed by the dike must have a minimum slope of one (1) percent for the entire length to an outlet. When the slope exceeds three (3) percent, or velocities exceed one foot per second (regardless of slope), stone stabilization (Type "A" rip-rap) is required. Plant grass on dikes not requiring stone stabilization. Reference Section 31 35 10 for grassing.

3.6 EXAMPLE SWP3 FOLLOWS

Storm Water Pollution Prevention Plan (SWP3)

Project Name and Location:

Owner:

Prepared by:

Contractors:

Construction Schedule:

Commencement:

Completion:

I. Site Description

A. Location and Nature of Construction Activity

- Describe location and type of work.

B. Sequence of Activities

- Describe sequence of soil disturbing activities.

C. Affected Area

- Describe area and reference plan sheet.
- Include area where Contractor may borrow material on-site.

D. Storm Water Discharge Characteristics

- Describe soil and runoff characteristics. Prepare table showing drainage areas and runoff coefficients. (See example table.)

Sub-Area	Acres	Existing "C"	CxA	Proposed "C"	CxA
1					
2					
3					
TOTALS					

TABLE 1: WEIGHTED "C" VALUE CALCULATION

E. Site Maps

- Describe drawings.

F. Name of Receiving Water

- Name drainage system.

II. Federal, State and Local Laws and Regulations

All of the following laws and regulations concerning environmental protection, pollution control, and abatement shall be observed on this project:

Environmental Protection Agency 40CFR Part 122

Executive Order 11514, Protection and Enhancement of Environmental Quality, 5 March, 1970, as amended by Executive Order 11991, 24 May 1977.

Executive Order 11593, Protection and Enhancement of the Cultural Environment, 13 May 1971.

Executive Order 11988, Floodplain Management, 24 May 1977.

Executive Order 11990, Protection of Wetlands, 24 May 1977.

Clean Air Act as amended.

Clean Water Act.

Endangered Species Act of 1973 as amended.

Federal Water Project Recreation Action Act.

Fish and Wildlife Coordination Act.

Historic Sites Act 1935, as amended.

National Historic Preservation Act of 1969, as amended.

Preservation of Historical and Archaeological Data Act of 1974, as amended.

River and Harbor Act, 3 March 1989.

Wild and Scenic Rivers Act of 1968.

Navigable Waters, Discharge of Dredged or Fill Materials, (40 CFR 230.1-230.8).

Regulations for Implementing the Procedural Provisions of National Environmental Policy Act of 1969, (40 CFR 1500-1508).

Protection of Historic and Cultural Properties (30 CFR 800).

Regulatory Programs of the Corps of Engineers (23 CFR 320-329).

Texas Clean Air Act.

III. Pollution Prevention Controls

A. Erosion and Sedimentation Controls

- Describe temporary controls, maintenance and final stabilization.

B. Pollution Removal Efficiencies

- Develop table showing effectiveness of various temporary erosion control methods.

C. Other Controls

- Describe methods for solid waste disposal, hazardous wastes, temporary sanitary facilities, etc.

D. Maintenance

- Describe maintenance procedures.

IV. Inspections

- Describe inspections to be performed including frequency, reporting, and record keeping.

V. Non-Storm Water Discharges

- Describe types of chemical and other agents used in construction.

A. Inventory for Pollution Prevention Plan

- Describe spill prevention methods including good housekeeping measures, hazardous material handling procedures, and specific material and spill prevention practices. Prepare a table outlining these specific practices.

VI. Subcontractors

- Describe subcontractor compliance with SWP3.

VII. Documentation

- Describe record keeping practices and terms. List records to retain.

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION REPORT

Date: _____ Inspector: _____

Job No.: _____ Location: _____

Project: _____

Temp: _____ Rain: Yes _____ No _____ Inches _____ Last Rainfall (Date): _____

Ground Condition: _____ Photos taken: Yes _____ No _____

Work in Progress: _____

DISTURBED AREAS				
Location	Date Last Disturbed	Next Disturbance	Type of Stabilization	Maintenance Required (Yes/No)
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Observed Problems or Hazards: _____

Maintenance Required: _____

Maintenance to be performed on or before: _____

Signature: _____

Inspector

Inspection Report Certification should be attached

INSPECTION REPORT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____

Title: _____

Date: _____

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR/SUBCONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

SIGNATURE OF COMPANY OFFICIAL: BY _____

TITLE: ITS _____

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

PHONE NO: _____

SITE: _____

PROJECT: _____

END OF SECTION 015713

SECTION 016000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."

- b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:

- a. **Restricted List:** Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. **Nonrestricted List:** Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
- 5. **Basis-of-Design Product:** Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. **Visual Matching Specification:** Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - 1. If no product available within specified category matches and complies with other specified requirements, comply with "Substitution Procedures" for proposal of product.
- D. **Visual Selection Specification:** Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. **Conditions for Consideration:** Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.
 - 6. Comparable Products request may be made 10 -days prior to the Bid Opening (Bid Phase Request) or may be made within 30-days of the notice to proceed (Construction Phase Request) using the appropriate form attached to this section.

PART 3 - EXECUTION (Not Used)

PART 4 - SUBSTITUTION FORMS: Refer to following four pages.

END OF SECTION 016000

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**COMPARABLE PRODUCT - PROPOSAL PHASE
LANCASTER COMMUNITY PARK AMPHITHEATER**

PROJECT: _____ PROJECT NO.: _____

TO: (ARCHITECT) FROM: (BIDDER)

HEREBY REQUESTS ACCEPTANCE OF THE FOLLOWING PRODUCT OR SYSTEMS AS A COMPARABLE PRODUCT IN ACCORD WITH PROVISIONS OF THE BIDDING DOCUMENTS:

1. SPECIFIED PRODUCT OR SYSTEM:

Comparable Product request for (Generic Description): _____

Specification Section No. _____ Article(s) _____ Para.(s) _____

2. SUPPORTING DATA:

- ☐ Product data for proposed Comparable Product is attached (description of product, reference standards, performance and test data).
- ☐ Sample is attached
- ☐ Sample will be sent if requested

3. QUALITY COMPARISON:

SPECIFIED PRODUCT	COMPARABLE PRODUCT
Name, brand: _____	_____
Catalog No.: _____	_____
Manufacturer: _____	_____
Vendor: _____	_____
Significant variations _____	_____

Maintenance Service Available: ☐ yes ☐ no

Spare Parts Source: _____

4. PREVIOUS INSTALLATIONS:

Identification of similar projects on which proposed Comparable Product was used: (Attach list)

Project: _____ Architect: _____

Address: _____ Owner: _____

Date Installed: _____

5. REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEMS:

6. EFFECT OF COMPARABLE PRODUCT:

Proposed Comparable Product affects other parts of Work: ☐ No ☐ Yes (If yes, explain)

Comparable Product requires dimensional revision or redesign of structure or M & E Work:

☐ No ☐ Yes (If yes, attach complete data.)

7. BIDDER'S/SUPPLIER'S STATEMENT OF CONFORMANCE OF PROPOSED COMPARABLE PRODUCT TO CONTRACT REQUIREMENT:

I/we have investigated the proposed Comparable Product. I/we:

- believe that it is equal or superior in all respects to specified product, except as stated above; and
- will provide the same warranty as specified for specified product; and
- have included complete implications of the Comparable Product; and
- will pay redesign and other costs caused by the Comparable Product which subsequently become apparent; and
- will pay costs to modify other parts of the Work as may be needed, to make all parts of the Work complete and functioning resulting from the Comparable Product.

- warrant and represent to the Owner and the Architect that the proposed Comparable Product does not infringe on any patents or other rights held by others, or that a license has been or will be obtained timely from the holders of such rights for the use of the Comparable Product as proposed; and acknowledge that by accepting this Comparable Product neither the Architect nor the Owner makes any warranty or representation to the Contractor or any Subcontractor regarding the existence or potential for such infringement.

Bidder/Supplier: _____ Date: _____

By: _____

Answer all questions and complete all blanks - use "NA" if not applicable.

REVIEW AND ACTION:

- ☐ Resubmit Comparable Product request:
- ☐ Provide more information in following categories: _____
- ☐ Sign Bidder's/Supplier's Statement of Conformance.
- ☐ Comparable Product is accepted.
- ☐ Comparable Product is accepted, with the following comments: _____
- ☐ Comparable Product not accepted.
- ☐ No action taken. Comparable Product Request received less than 15 days prior to date set for receipt of bids.

Architect's Signature

Date

**COMPARABLE PRODUCT REQUEST - AFTER EXECUTION OF CONTRACT
LANCASTER COMMUNITY PARK AMPHITHEATER**

PROJECT: _____

PROJECT NO.: _____

TO: (ARCHITECT) _____

FROM: (BIDDER) _____

HEREBY REQUESTS ACCEPTANCE OF THE FOLLOWING PRODUCT OR SYSTEMS AS A COMPARABLE PRODUCT IN ACCORD WITH PROVISIONS OF DIVISION ONE OF SPECIFICATIONS:

1. SPECIFIED PRODUCT OR SYSTEM:

Comparable Product request for (Generic Description): _____

Specification Section No. _____ Article(s) _____ Para.(s) _____

2. SUPPORTING DATA:

☐ Product data for proposed Comparable Product is attached (description of product, reference standards, performance and test data).

☐ Sample is attached

☐ Sample will be sent if requested

3. QUALITY COMPARISON:

SPECIFIED PRODUCT

COMPARABLE PRODUCT

Name, brand: _____

Catalog No.: _____

Manufacturer: _____

Vendor: _____

Significant variations _____

Maintenance Service Available: ☐ yes ☐ no

4. PREVIOUS INSTALLATIONS:

Identification of similar projects on which proposed Comparable Product was used: (Attach list)

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

5. REASON FOR NON-AVAILABILITY OF SPECIFIED ITEM:

Attach affidavit, certification or other data as proof of non-availability.

☐ Strikes

☐ Discontinuance of production

☐ Lockouts

☐ Proven shortage

☐ Bankruptcy

☐ Similar occurrences (explain below)

6. EFFECT OF COMPARABLE PRODUCT:

Proposed Comparable Product affects other parts of Work: ☐ No ☐ Yes (If yes, explain)

Comparable Product changes Contract Time: ☐ No ☐ Yes Add/Deduct _____ day

Comparable Product requires dimensional revision or redesign of structure or M & E Work:

☐ No ☐ Yes (If yes, attach complete data.)

Saving or credit to Owner, if any, for accepting Comparable Product: \$ _____

7. CONTRACTOR'S STATEMENT OF CONFORMANCE OF PROPOSED COMPARABLE PRODUCT TO CONTRACT REQUIREMENT:

I/we have investigated the proposed Comparable Product. I/we:

- believe that is equal or superior in all respects to specified product, except as stated above;
- will provide the same warranty as specified for specified product;
- have included complete cost data and implications of the Comparable Product;
- will pay redesign and special inspection costs caused by the use of this product;
- will pay additional costs to other contractors caused by the Comparable Product;
- will coordinate the incorporation of the proposed Comparable Product in the Work;

- will modify other parts of the Work as may be needed, to make all parts of the Work complete and functioning
- waive future claims for added cost to Contract cause by the Comparable Product.
- warrant and represent to the Owner and the Architect that the proposed Comparable Product does not infringe on any patents or other rights held by others, or that a license has been or will be obtained timely from the holders of such rights for the use of the substitute as proposed; and acknowledge that by accepting this Comparable Product neither the Architect nor the Owner makes any warranty or representation to the Contractor or any Subcontractor regarding the existence or potential for such infringement.

Contractor: _____ Date: _____

By: _____

Answer all questions and complete all blanks - use "NA" if not applicable.

ARCHITECT'S REVIEW AND ACTION:

- ☐ Resubmit Comparable Product request:
 - ☐ Provide more information in following categories: _____
 - ☐ _____
 - ☐ Sign Contractor's Statement of Conformance.
 - ☐ Submit proof of non-availability.
- ☐ Comparable Product is accepted.
- ☐ Comparable Product is accepted, with the following comments: _____
- ☐ _____
- ☐ Comparable Product not accepted.

Architect's Signature _____

Date _____

SECTION 017300

EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

1.2 INFORMATIONAL SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from the Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in

reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.
 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 3. Inform installers of lines and levels to which they must comply.
 4. Check the location, level and plumb, of every major element as the Work progresses.
 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Existing Utility Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption to occupied areas.
- E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 017419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:

1. Disposing of nonhazardous demolition and construction waste.

1.2 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan. Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Salvaged Items for Sale not permitted on Project site.

3.2 DISPOSAL OF WASTE

- A. General: Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete with request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or

will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:

1. ~~Submit a final Application for Payment according to Division 01 Section "Payment Procedures."~~
2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction

1. Organize list of spaces in sequential order,
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide table of contents at beginning of document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **Cleaning Agents:** Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. **General:** Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. **Cleaning:** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

- f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- g. Sweep concrete floors broom clean in unoccupied spaces.
- h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- i. Remove labels that are not permanent.
- j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates.

- k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- l. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
- m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
- p. Leave Project clean and ready for occupancy.

END OF SECTION 017700

SECTION 033000

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Footings.
 - 2. Foundation walls.
 - 3. Slabs-on-grade. Trails
- B. Related Sections include the following:
 - 1. Division 03 Section "Architectural Concrete" for general building applications of specially finished formed concrete.
 - 2. Division 31 Section "Earthwork" for drainage fill under slabs-on-grade.
 - 3. Division 32 Section "Decorative Concrete Paving" for decorative concrete pavement and walks.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with fly ash; subject to compliance with requirements.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Samples: For vapor retarder.
- E. Qualification Data: For manufacturer and testing agency.
- F. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- G. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.
4. Steel reinforcement and accessories.
5. Curing compounds.
6. Floor and slab treatments.
7. Bonding agents.
8. Adhesives.
9. Vapor retarders.
10. Semirigid joint filler.
11. Joint-filler strips.
12. Repair materials.

H. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.

I. Field quality-control test and inspection reports.

J. Minutes of preinstallation conference.

1.4 QUALITY ASSURANCE

A. **Manufacturer Qualifications:** A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. **Testing Agency Qualifications:** An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

C. **Source Limitations:** Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

D. **ACI Publications:** Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

E. **Concrete Testing Service:** Owner will engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

F. **Preinstallation Conference:** Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.

- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

- C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

- D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

- E. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

- F. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

- G. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

- H. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips.
- C. Plain-Steel Wire: ASTM A 82, as drawn.
- D. Deformed-Steel Wire: ASTM A 496.

2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete.

2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I/II, gray. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F.
- B. Normal-Weight Aggregates: ASTM C 33, Class 4M coarse aggregate or better, graded. Provide aggregates from a single source.
 - 1. Maximum Coarse-Aggregate Size: 1 inch nominal.
- C. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.7 VAPOR RETARDERS

- A. Plastic Vapor Retarder: ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397, not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape. Permeance of less than 0.01 Perms [grains/(ft² * hr * in.Hg)] per ASTM F 1249 or ASTM E 96. Maintain permeance of less than 0.01 Perms after mandatory conditioning tests per ASTM E 154 Sections 8, 11, 12, and 13. ASTM E 1745 Class A
1. Available Products:
 - a. Standard of Quality Product: Stego Industries, LLC; Stego Wrap, 15 mils.
 2. Other Acceptable Manufacturers:
 - a. Fortifiber Corporation;
 - b. Raven Industries Inc.;
 - c. Reef Industries, Inc.;

2.8 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
1. Available Products:
 - a. Axim Concrete Technologies; Cimfilm.
 - b. Burke by Edoco; BurkeFilm.
 - c. ChemMasters; Spray-Film.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
 - e. Dayton Superior Corporation; Sure Film.
 - f. Euclid Chemical Company (The); Eucobar.
 - g. Kaufman Products, Inc.; Vapor Aid.
 - h. Lambert Corporation; Lambco Skin.
 - i. L&M Construction Chemicals, Inc.; E-Con.
 - j. MBT Protection and Repair, Div. of ChemRex; Confilm.
 - k. Meadows, W. R., Inc.; Sealtight Evapre.
 - l. Metalcrete Industries; Waterhold.
 - m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
 - n. Sika Corporation, Inc.; SikaFilm.
 - o. Symons Corporation, a Dayton Superior Company; Finishing Aid.
 - p. Unitex; Pro-Film.
 - q. US Mix Products Company; US Spec Monofilm ER.
 - r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

1. Available Products:

- a. Burke by Edoco; Cureseal 1315 WB.
- b. ChemMasters; Polyseal WB.
- c. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Sealcure 1315 WB.
- d. Euclid Chemical Company (The); Super Diamond Clear VOX.
- e. Kaufman Products, Inc.; Sure Cure 25 Emulsion.
- f. Lambert Corporation; UV Safe Seal.
- g. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
- h. Meadows, W. R., Inc.; Vocomp-30.
- i. Metalcrete Industries; Metcure 30.
- j. Symons Corporation, a Dayton Superior Company; Cure & Seal 31 Percent E.
- k. Tamms Industries, Inc.; LusterSeal WB 300.
- l. Unitex; Hydro Seal 25.
- m. US Mix Products Company; US Spec Radiance UV-25.
- n. Vexcon Chemicals, Inc.; Vexcon Starseal 1315.

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.10 REPAIR MATERIALS

- A. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.11 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 3000 psi at 28 days (trial).
 - 2. Slump Limit: 4 inches, 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
 - 3. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch nominal maximum aggregate size.
 - 4. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.
 - 5. Minimum Cementitious Materials Content: 400 lb/cu. yd..

2.13 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
 - 1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 - 2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..

3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 1. Class A, 1/8 inch for smooth-formed finished surfaces.
 2. Class B, 1/4 inch for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 1. Install keyways, reglets, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for parts of the Work that do not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.
- B. Bituminous Vapor Retarders: Place, protect, and repair vapor retarders according to manufacturer's written instructions.

3.5 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.6 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Locate joints for beams and slabs in the middle third of spans.
 - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.7 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.

2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- F. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.8 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces exposed to public view.
- C. **Related Unformed Surfaces:** At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS

- A. **General:** Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. **Float Finish:** Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
- C. **Trowel Finish:** After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
1. Apply a trowel finish to surfaces exposed to view.
 2. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-foot- long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed 3/16 inch.
- D. **Broom Finish:** Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.
- E. **Slip-Resistive Finish:** Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:
1. Uniformly spread 25 lb/100 sq. ft. of dampened slip-resistive aggregate over surface in 1 or 2 applications. Tamp aggregate flush with surface, but do not force below surface.
 2. After broadcasting and tamping, apply float finish.
 3. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate.

3.10 MISCELLANEOUS CONCRETE ITEMS

- A. **Filling In:** Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.11 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written Instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.12 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.
 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

5. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
6. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.14 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

B. Inspections:

1. Steel reinforcement placement.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing.
4. Curing procedures and maintenance of curing temperature.
5. Verification of concrete strength before removal of shores and forms from beams and slabs.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.

- a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
8. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
10. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
12. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Contract Documents.

END OF SECTION 033000

SECTION 033300
ARCHITECTURAL CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place architectural concrete including form facings, reinforcement accessories, concrete materials, concrete mixture design, placement procedures, and finishes.
-

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture.
- C. Formwork shop drawings.
- D. Placement schedule.
- E. Samples: For each of the following materials:
 - 1. Form-facing panel.
 - 2. Form ties.
 - 3. Form liners.
 - 4. Coarse- and fine-aggregate gradations.
 - 5. Chamfers and rustications.

1.4 INFORMATIONAL SUBMITTALS

- A. Material certificates.
- B. Material test reports.

1.5 QUALITY ASSURANCE

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5 and Section 6, "Architectural Concrete."
 - 2. ACI 303.1, "Specification for Cast-in-Place Architectural Concrete."

- B. **Field Sample Panels:** After approval of verification sample and before casting architectural concrete, produce field sample panels to demonstrate the approved range of selections made under Sample submittals. Produce a minimum of three sets of full-scale panels, cast vertically, approximately 48 by 48 by 6 inches minimum, to demonstrate the expected range of finish, color, and texture variations.
- C. **Mockups:** Before casting architectural concrete, build mockups to verify selections made under Sample submittals and to demonstrate typical joints, surface finish, texture, tolerances, and standard of workmanship. Build mockups to comply with the following requirements, using materials indicated for the completed Work.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. **General:** Comply with Division 03 Section "Cast-in-Place Concrete" for formwork and other form-facing material requirements.
- B. **Form-Facing Panels for As-Cast Finishes:** Plywood, Steel, glass-fiber-reinforced plastic, or other approved nonabsorptive panel materials that will provide continuous, true, and smooth architectural concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- C. **Chamfer Strips:** Metal, rigid plastic, elastomeric rubber, or dressed wood, 3/8 by 3/8 inch, minimum; nonstaining; in longest practicable lengths.
- D. **Form Joint Tape:** Compressible foam tape; pressure sensitive; AAMA 800, "Specification 810.1, Expanded Cellular Glazing Tape"; minimum 1/4 inch thick.
- E. **Form Ties:** Factory-fabricated, internally disconnecting or removable ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

2.2 STEEL REINFORCEMENT AND ACCESSORIES

- A. **General:** Comply with Division 03 Section "Cast-in-Place Concrete" for steel reinforcement and other requirements for reinforcement accessories.

2.3 CONCRETE MATERIALS

- A. Comply with Division 03 Section "Cast in Place Concrete" for Materials and admixtures and for concrete mixes:
- B. **Chemical Admixtures:** Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. **Water-Reducing Admixture:** ASTM C 494/C 494M, Type A.
 - 2. **Retarding Admixture:** ASTM C 494/C 494M, Type B.
 - 3. **Water-Reducing and Retarding Admixture:** ASTM C 494/C 494M, Type D.
 - 4. **High-Range, Water-Reducing Admixture:** ASTM C 494/C 494M, Type F.
 - 5. **High-Range, Water-Reducing and Retarding Admixture:** ASTM C 494/C 494M, Type G.

- 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- C. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.

2.4 CURING MATERIALS

- A. Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.
 - 1. For integrally colored concrete, curing compound shall be pigmented type approved by color pigment manufacturer.
 - 2. For concrete indicated to be sealed, curing compound shall be compatible with sealer.

PART 3 - EXECUTION

3.1 FORMWORK

- A. General: Comply with Division 03 Section "Cast-in-Place Concrete" for formwork, embedded items, and shoring and reshoring.
- B. Limit deflection of form-facing panels to not exceed ACI 303.1 requirements.
- C. In addition to ACI 303.1 limits on form-facing panel deflection, limit cast-in-place architectural concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 - 1. Class B, 1/4 inch.
- D. Fabricate forms to result in cast-in-place architectural concrete that complies with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Chamfer exterior corners and edges of cast-in-place architectural concrete.
- F. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- G. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.2 REINFORCEMENT AND INSERTS

- A. General: Comply with Division 03 Section "Cast-in-Place Concrete" for fabricating and installing steel reinforcement. Securely fasten steel reinforcement and wire ties against shifting during concrete placement.
- B. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

3.3 REMOVING AND REUSING FORMS

- A. Formwork for sides of, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24

hours after placing concrete if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

- B. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for cast-in-place architectural concrete surfaces.

3.4 CONCRETE PLACEMENT

- A. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- B. Deposit concrete continuously between construction joints. Deposit concrete to avoid segregation.
- C. Cold-Weather Placement: Comply with ACI 306.1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- D. Hot-Weather Placement: Comply with ACI 301.

3.5 FINISHES

- A. Architectural Concrete Finish: Match Architect's design reference sample, identified and described as indicated, to satisfaction of Architect.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces.
 - 1. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.
- C. Maintain uniformity of special finishes over construction joints unless otherwise indicated.

3.6 CONCRETE CURING

- A. Begin curing cast-in-place architectural concrete immediately after removing forms from concrete. Cure according to ACI 308.1, by one or a combination of the following methods that will not mottle, discolor, or stain concrete:
 - 1. Curing compound.

3.7 FIELD QUALITY CONTROL

- A. General: Comply with field quality-control requirements in Division 03 Section "Cast-in-Place Concrete."

3.8 REPAIRS, PROTECTION, AND CLEANING

- A. Repair and cure damaged finished surfaces of cast-in-place architectural concrete when approved by Architect. Match repairs to color, texture, and uniformity of surrounding surfaces and to repairs on approved mockups.
 - 1. Remove and replace cast-in-place architectural concrete that cannot be repaired and cured to Architect's approval.
 - B. Protect corners, edges, and surfaces of cast-in-place architectural concrete from damage; use guards and barricades.
 - C. Protect cast-in-place architectural concrete from staining, laitance, and contamination during remainder of construction period.
-

END OF SECTION 033300

SECTION 079200

JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes joint sealants for the following applications:

1. Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
2. Exterior joints in horizontal traffic surfaces.
3. Interior joints in vertical surfaces and horizontal nontraffic surfaces.
4. Interior joints in horizontal traffic surfaces.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- C. Preconstruction field test reports.
- D. Product test reports.

1.4 QUALITY ASSURANCE

- A. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates according to the method in ASTM C 1193 that is appropriate for the types of Project joints.

1.5 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.
 - 2. Nonmembrane Roof Sealants: 300 g/L.
 - 3. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 4. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Single-Component Neutral-Curing Silicone Sealant ES-1:
 - 1. Available Products:
 - a. Dow Corning Corporation; 791.
 - b. Dow Corning Corporation; 795.
 - c. GE Silicones; SilPruf NB SCS9000.
 - d. GE Silicones; UltraPruf II SCS2900.
 - e. Pecora Corporation; 865.
 - f. Pecora Corporation; 895.
 - g. Pecora Corporation; 898.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 50.
 - 4. Use Related to Exposure: NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.

D. Single-Component Mildew-Resistant Neutral-Curing Silicone Sealant ES-2:

1. Available Products:
 - a. Pecora Corporation; 898.
 - b. Tremco; Tremsil 600 White.
2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

E. Multicomponent Nonsag Urethane Sealant ES-3a:

1. Available Products:
 - a. Pecora Corporation; Dynatrol II.
 - b. Tremco; Dymeric 511.
 - c. Tremco; Vulkem 922.
2. Type and Grade: M (multicomponent) and NS (nonsag).
3. Class: 50.
4. Uses Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

F. Multicomponent Nonsag Urethane Sealant ES-3b:

1. Available Products:
 - a. Bostik Findley; Chem-Calk 500.
 - b. Pacific Polymers, Inc.; Elasto-Thane 227 R Type II (Gun Grade).
 - c. Polymeric Systems Inc.; PSI-270.
 - d. Tremco; Dymeric.
2. Type and Grade: M (multicomponent) and NS (nonsag).
3. Class: 25.
4. Additional Movement Capability: 40 percent movement in extension and 25 percent in compression for a total of 65 percent movement.
5. Use Related to Exposure: NT (nontraffic).
6. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

G. Multicomponent Nonsag Urethane Sealant ES-4:

1. Available Products:
 - a. Pacific Polymers, Inc.; Elasto-Thane 227 High Shore Type II (Gun Grade).
 - b. Pacific Polymers, Inc.; Elasto-Thane 227 Type II (Gun Grade).
 - c. Pecora Corporation; Dynatred.
 - d. Polymeric Systems Inc.; PSI-270.

2. Type and Grade: M (multicomponent) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: T (traffic).
5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.

H. Single-Component Pourable Urethane Sealant ES-5:

1. Available Products:
 - a. Bostik Findley; Chem-Calk 950.
 - b. Pecora Corporation; Urexpan NR-201.
 - c. Polymeric Systems Inc.; Flexiprene 952.
 - d. Schnee-Morehead, Inc.; Permthane SM7101.
 - e. Tremco; Tremflex S/L.
 - f. Tremco; Vulkem 45.
2. Type and Grade: S (single component) and P (pourable).
3. Class: 25.
4. Use Related to Exposure: T (traffic).
5. Uses Related to Joint Substrates: M,A, and, as applicable to joint substrates indicated, O.

2.4 LATEX JOINT SEALANTS

A. Latex Sealant LS-6: Comply with ASTM C 834, Type O P, Grade NF.

B. Available Products:

1. Bostik Findley; Chem-Calk 600.
2. Pecora Corporation; AC-20+.
3. Schnee-Morehead, Inc.; SM 8200.
4. Sonneborn, Division of ChemRex Inc.; Sonolac.
5. Tremco; Tremflex 834.

2.5 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) O (open-cell material) B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

- D. **Bond-Breaker Tape:** Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. **Primer:** Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. **Cleaners for Nonporous Surfaces:** Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. **Masking Tape:** Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. **Surface Cleaning of Joints:** Clean out joints immediately before installing joint sealants.
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
 - a. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
 - 2. Remove laitance and form-release agents from concrete.
 - a. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. **Joint Priming:** Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. **Masking Tape:** Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated. Refer to ASTM C 919 for use of joint sealants in acoustical applications.
- B. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 2. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses

3.3 JOINT-SEALANT SCHEDULE

- A. Joint applications indicated below include letter designations. Place these joint types in the location described in this schedule.
- B. Joint-Sealant Application JS-A: Exterior horizontal traffic isolation and contraction joints in cast-in-place concrete slabs.
 - 1. Joint Sealant: Multicomponent nonsag urethane sealant ES-4 or ES-5.
 - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- C. Joint-Sealant Application JS-B: Exterior vertical control and expansion joints in unit masonry.
 - 1. Joint Sealant: Multicomponent nonsag urethane sealant ES-3a or ES-3b.
 - 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

- D. Joint-Sealant Application JS-C: Interior sealant-pointed mortar joints and perimeter in glass unit masonry assemblies.
1. Joint Sealant: Single-component neutral-curing silicone sealant ES-1.
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- E. Joint-Sealant Application JS-D: Exterior perimeter joints between Masonry and frames of doors windows and louvers.
1. Joint Sealant: Multicomponent nonsag urethane sealant or Single-component nonsag urethane sealant ES-3a or ES-3b.
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range..
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- F. Joint-Sealant Application JS-E: Interior perimeter joints of exterior openings.
1. Joint Sealant: Latex sealant LS-6.
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.
- G. Joint-Sealant Application JS-F: Interior joints between plumbing fixtures and adjoining walls, floors, and counters.
1. Joint Sealant: Single-component mildew-resistant neutral-curing silicone sealant ES-2.
 2. Joint-Sealant Color: White.
- H. Joint-Sealant Application JS-G: Perimeter joints between interior wall surfaces and frames of interior doors and windows.
1. Joint Sealant: Latex sealant LS-6.
 2. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

SECTION 260501

ELECTRICAL

PART 1 - GENERAL

1.1 BASIC REQUIREMENTS

- A. General: Furnish and install all labor material, equipment, tools and services necessary to provide the complete and fully operational electrical systems diagrammatically represented on the plans and described in these specifications.
- B. Provide the electrical power distribution and lighting shown on the drawings.
- C. Code Compliance: Comply with all local, State, and National codes relating to public safety.
- D. Permits: Secure and pay for all necessary permits, licenses and inspections required by law.
- E. Site Investigation: Examine the site to determine conditions that will affect the work and include all work related to site conditions in the bid proposal.
- F. Materials: All materials shall be new and shall bear the Underwriters Laboratories label where UL has a label for that particular type of equipment.
- G. Workmanship: Perform the work with competent mechanics, skilled in their trades, timely placing all materials as the construction progresses.
- H. Submittals: Submit manufacturer's product data on all material proposed for the project.
- I. Trenching: Provide all excavation and backfill necessary for the installation of specified work. Conduit cover shall be minimum 18" in the park areas and 24" under parking and drive-ins in accordance with NEC Table 300-5.
- J. Service Laterals: Service conductors that are not encased in concrete and that are buried eighteen inches or more below grade shall have their location identified by a warning ribbon, with trace wire, that is placed in the trench at least twelve inches above the underground installation in accordance with NEC 300.5 D 3.
- K. Coordination: The electrical construction shall be coordinated with the work of other trades. Study the complete contract documents to determine the full scope of work and to identify work performed by other trades.
- L. Temporary Facilities: Provide temporary power and lighting, if required, during construction.
- M. Substitution: Materials and products of manufacturers other than those specified require the engineer's approval in writing. Submit shop drawings and product data for approval at least one week prior to the bid date.
- N. Handling: Handle electrical equipment, devices, and materials with care to prevent damage to finishes. Damaged equipment shall be replaced. Touch up paint shall be applied to scratches where approved by the Engineer/Architect.

- O. Guarantee: The Contractor shall guarantee the construction to be free from defect of material and workmanship for a period of one year from the date of final acceptance. Replace or repair all defective material and workmanship without cost to the Owner.

PART 2 - PRODUCTS

2.1 GROUNDING

- A. Ground the service entrance in accordance with NEC. Grounding electrodes shall be 5/8-inch diameter, 8 feet long steel rod with copper exterior. Bond the grounding electrode conductor to the ground rod with Cadweld thermal fusion connector.
- B. Provide a grounding conductor in each feeder and branch circuit.
- C. Provide a ground rod for each ole mounted fixture as detailed on the drawings.

2.2 RACEWAYS

- A. Underground conduit shall be rigid nonmetallic PVC, Schedule 40 with PVC couplings of the solvent cement type to provide complete watertight joints. Conduit and couplings shall be UL listed and labeled for direct burial. Provide galvanized rigid steel 90-degree elbows and watertight connections between nonmetallic conduit and steel conduit.
- B. Exposed conduit shall be rigid steel galvanized inside and out. Couplings shall be threaded rigid steel galvanized. Coat all exposed threads with zinc chromate.
- C. Underground rigid steel conduit shall be plastic coated.
- D. Before conductors are pulled into a conduit, thoroughly swab the conduit to remove foreign material and to permit the wire to be pulled into a clean, dry raceway.
- E. Provide all cast junction boxes, pull boxes or condulets as required to complete the raceway system.

2.3 CONDUCTORS

- A. Provide conductors of stranded soft-drawn annealed copper, 98% conductivity new building wire, insulated in accordance with NEC. Conductors shall be rated 600-volts, THHN/THWN and 75 degrees C. UL listed bolted pressure or spring connectors shall be properly sized for conductor sizes.
- B. Feeders shall be installed with their entire length in continuous section without joints or splices. No tap or splice shall be made in any conductor except in accessible locations. Insulate taps and splices equal to the adjoining conductor.

2.4 PANELBOARDS

- A. Distribution panelboards shall be NEMA PB 1, power and feeder distribution type secured with vault-type latch with tumbler lock; keyed alike. For doors more than 36 inches high, provide two

latches, keyed alike. Provide bolt-on circuit breakers for 125 Amp and larger over current protection devices. Provide plug-in circuit breakers for smaller than 125 Amp.

- B. Lighting and appliance branch circuit panelboards shall be NEMA PB 1, with plug-in circuit breakers.
- C. Panelboard enclosures shall be NEMA 3R. A panelboard shall be UL listed for service equipment when it has the service main breaker.
- D. All panelboards shall have dead-front safety construction, tin-plated aluminum or copper bus, compression type main and neutral lugs, equipment ground bus and molded case circuit breakers.
- E. Panels and breakers shall have the minimum interrupting capacity that is standard for the equipment voltage and as indicated on the drawings.
- F. Panels and breakers shall be manufactured by one of the following: Square D, GE or Siemens.

2.5 CIRCUIT BREAKER

- A. Circuit breakers shall be molded case, thermal magnetic type equipped with individually insulated, braced and protected connectors.
- B. Breakers shall have the minimum interrupting capacity that is the same as panel.
- C. Breakers shall be manufactured by the same manufacturer of the panel.

2.6 WIRING DEVICES

- A. Receptacles shall be constructed of high-impact resistant thermoplastic material with nylon face and thermoplastic back body. Duplex receptacles shall be 2-pole, 3-wire with green equipment ground screw and an automatic grounding system attached to the strap. The device shall be 20 amp, 125 volt, NEMA configuration 5-20R, back and side wired.
- B. Weatherproof receptacles shall be UL listed and labeled for damp locations.
- C. Ground fault circuit interrupter (GFCI) receptacles shall be a feed-through type wired to protect a single 20 Amp receptacle. GFCI receptacles shall be UL rated, Class 1 with 5 milliampere ground fault trip level and 20 Amp feed through.
- D. Exterior receptacles in wet locations shall have weatherproof cover in accordance with NEC 406.8(B). Provide hasp for pad lock.
- E. Devices shall be manufactured by one of the following: Leviton, Intermatic, P&S, GE, Hubbell, or Bryant.

2.7 LIGHTING

- A. Lighting fixtures shall be as defined on drawings complete with constant wattage autotransformer or regulating high-power-factor type ballast rated for 22 degrees F starting temperature and epoxy-encapsulated.
- B. Metal halide color temperature shall be 4000K and minimum color rendering index shall be 70CRI.
- C. Mount fixture level, plumb, and square with finish grade and secure according to the manufacturer's written instructions.
- D. Provide accessories, supports and concrete pads for mounting fixtures.
- E. Mount adjust and direct fixture as shown on drawings.
- F. Fixtures shall be installed complete with the specified lamps.

2.8 LIGHTING CONTROL DEVICES

- A. Photoelectric Relay: Shall be solid-state single-pole, double-throw dry contacts rated to operate the branch circuit voltage. Light-level monitor range shall be 0 to 3500 fc with an adjustment for turn-on and turn-off levels. Time delay shall prevent false operation. Weatherproof enclosure UL labeled for exterior use in wet locations. Tork model #2107 or approved equal.

2.9 STRUT SYSTEM

- A. The bolted metal framing system shall be made of channel, fittings and hardware meeting AISI Specification for the Design of Cold-Formed Steel Structural Members. Provide Unistrut Series P2000 or approved equal manufactured by B-Line. Channel shall be pre-galvanized with hot-dip galvanized fittings and electro-galvanized hardware. Finish all cut edges with cold galvanizing.

2.10 RACEWAY AND CONDUCTOR IDENTIFICATION

- A. Marker Tapes: Vinyl or vinyl-cloth, self adhesive wrap-around type, with circuit identification legend machined printed and laminated with clear, weather and chemical-resistant coating.

2.11 TRANSFORMERS

- A. Low voltage, distribution transformers shall be ventilated, NEMA 250, Type 3R with rain shield. Comply with NEMA ST 20 and listed and labeled as complying with UL1561. Insulation Class shall be 220 deg C, UL component- recognized insulation system with a maximum of 150 deg C rise above 40 deg C ambient temperature. Provide two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.

2.12 POWER PEDESTAL

- A. Provide a weatherproof outlet post with receptacle and cover of heavy duty PVC with cover and lockable hasp. Receptacle shall be 20 amp grounding, weatherproof, GFCI. Comply with NEC 406.8 (B) (1). Base shall include mounting holes and template for mounting on concrete foundation. Device shall be Intermatic model WP2000 or approved equal.

2.13 COMPANY SWITCH

- A. Provide a 100 Amp company switch with connection chamber, shunt trip protection of connection chamber and indicator lights. The service is 100 Amp 120/208 Volt, 3-phase, 4-wire. Indicator lights shall indicate phase voltage available on the branch breaker.
- B. Provide the unit in a NEMA 3R steel enclosure with grey powder coat finish.
- C. Service connection shall be through conduit to lugs on the main breaker. The switch shall be rated suitable for use as Service entrance equipment.
- D. The main breaker shall be UL listed molded case, 3-pole with a current interrupt rating of 65,000AIC at 240V.
- E. The Main breaker shall contain a shunt-trip mechanism that will trip the breaker when the micro-switch monitoring the access door to the connection chamber is opened.
- F. Load connection bus-bars in the connection chamber shall contain a dual-rated solderless lug for cable connection. Lugs shall accept cable 4/0 cable.
- G. Provide CAM type outlets color code and with spring-loaded covers.
- H. A permanent warning label attached to the enclosure shall specify the proper sequence for connection and removal of cable in accordance with NEC Art 520-53K3. An additional warning label shall note that the connection chamber door must be closed and the main breaker re-set for the switch to operate properly.
- I. Unit shall meet or exceed all applicable NEC standards and shall be UL Listed. A label denoting the UL Listing shall be permanently affixed to the unit.
- J. Provide the equipment model numbers listed on the drawings or an approved equal that meets these specifications.
- K. Shop drawings shall be submitted to demonstrate the proposed equipment will meet the space restraints shown in the STAGE EQUIPMENT ENCLOSURE detail.

PART 3 - EXECUTION

3.1 TESTING

- A. All equipment and systems shall be tested and demonstrated to operate in accordance with the specifications and drawings.
- B. Test all wiring and devices as sections of construction are completed and replace any defective equipment, materials or installation.

- C. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions.
- D. Provide all equipment and properly calibrated instruments necessary to test the electrical system for shorts and grounds. Megger all wiring for shorts between conductors and for grounded and open circuits. Faulty wiring shall be removed and replaced.

END OF SECTION 260501

SECTION 311100

SITE CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Divisions 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Protection of existing features.
- B. Clearing and grubbing.
- C. Debris removal.

1.3 RELATED SECTIONS

- A. Excavation backfill and grading for site work outside of building - Section 312200.
- B. Grass seeding for slope protection and erosion control - Section 313510.
- C. Temporary erosion and sediment control during construction - Section 015713.

PART 2 - PRODUCTS

- 2.1 Not Applicable.

PART 3 - EXECUTION

3.1 GENERAL

- A. Site clearing and grubbing shall consist of the removal and disposal of trees, stumps, brush, roots, vegetation, logs, rubbish, and other objectionable matter from the construction area.

3.2 PREPARATION FOR WORK

- A. Verify that existing plant life designated to remain, if any, is tagged or identified, and protected as described in the Specifications.
- B. Verify and protect survey control.

3.3 PROTECTION OF EXISTING FEATURES

- A. Locate, identify, and protect utilities to remain.
- B. Protect trees, plant growth, and features designated to remain.
- C. Protect bench marks and survey control from damage or displacement.

3.4 CLEARING AND GRUBBING

- A. The designated construction area shall be cleared of all trees, brush, shrubbery, and plants not indicated on Drawings to be preserved. Trees and brush designated to be left in place shall be carefully trimmed as directed and shall be protected from scarring, barking, or other injuries during construction operations. Pruned limbs over 2 inches in diameter shall be treated by painting the exposed ends with an approved asphaltic material. Stumps, roots, and other objectionable material shall be removed from areas requiring fill or from borrow sites and/or material sources to the complete extent necessary to prevent objectionable matter from becoming mixed with the material to be used on construction.
 - B. Unless otherwise provided, all merchantable timber removed, as previously specified, shall become the property of the Contractor. It is the intent of this specification to provide for the removal and disposal of all obstructions and objectionable materials not specifically provided for elsewhere by the Contract Documents.
-
- C. Remove existing concrete and asphalt paving, curb, gutter, walks, and other items shown or described to be removed in the Contract Documents.
 - D. Remove trees, shrubs, and other plant life within the site shown or described to be removed in the Contract Documents. Remove tree, shrub stumps, and root system to a depth of 24 inches below existing grades. Remove grass and ground cover root system to a depth of 4 inches.
- 3.5 DEBRIS REMOVAL
- A. Removed material shall become the property of the Contractor. Contractor shall remove debris, rock, and extracted plant life from site and legally dispose.
- 3.6 EROSION CONTROL
- A. Provide erosion control measures necessary to maintain site. Protect against both wind and rainfall erosion.
 - B. Reference Division 1 - Section 015713 and Division 31 - Section 313510 for more specific requirements for erosion control.

END OF SECTION 311100

SECTION 312200

EXCAVATION, BACKFILL, AND GRADING FOR SITE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Divisions 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. The furnishing of all labor, materials and equipment to complete all demolition, excavation, filling, and compacting; to provide protection of embankments and cuts; and, to remove and dispose of all surplus materials and debris; as required. The work included in this Section is limited to the area defined in the drawings.
- B. Quality Assurance.
- C. Materials.
- D. Excavation.
- E. Filling Areas.
- F. Grading.
- G. Non-treated Subgrade Preparation.
- H. Trench Backfill.
- I. Sheeting, Shoring and Bracing.
- J. Testing and Laboratory Service.

1.3 RELATED SECTIONS

- A. Applicable Sections of Division 1 - General Requirements.
- B. Applicable Sections of Division 31 – Earthwork.
- C. Applicable Sections of Division 32 – Exterior Improvements.
- D. Applicable Sections of Division 33 – Utilities.
- E. Applicable Sections of the Reference Specifications.
- F. Special Provisions.

1.4 REFERENCES

- A. Reference Publications:

1. NCTCOG Standard Specifications for Public Works Construction, latest edition, as modified in the Contract Documents.
2. Latest version of Texas Department of Transportation (TxDOT), Standard Specifications for Construction of Highways, Streets and Bridges.
3. Geotechnical Investigations prepared for the Owner/Developer.

1.5 QUALITY ASSURANCE

- A. Lines and Grades: Construction lines and grades shall be established at the site by a competent surveyor or engineer employed by the Contractor. Any additional staking shall also be provided by the Contractor.
- B. Subsurface Data: Logs of borings represent only the conditions at the point of the boring at the time the boring was made. Copies of the log of borings, if available, are furnished for general information only. The data given may or may not correspond to the conditions encountered by the Contractor, and minor variation will not be used as a basis for a claim of changed conditions.
- C. Debris and Unsuitable Materials: Remove debris, vegetation, rubbish, and other perishable or objectionable matter. Dispose of debris and unsuitable materials off-site.

PART 2 - PRODUCTS

2.1 GENERAL

- A. This part shall include the furnishing of all materials of the dimensions and types as shown on the Drawings or as specified.

2.2 MATERIALS

- A. Select Fill: Select fill material, as required for construction, shall consist of uniformly blended clayey sand which has a liquid limit less than 30 and a Plasticity Index between 4 and 15. Less than 50 percent by weight shall pass the Number 200 sieve.
- B. Clay Fill: Suitable, clean material excavated on-site (or off-site if similar to onsite material) may be used as fill material. Suitable material shall consist of clay soils classified as CH according to the unified soil classification system. Clay soil used as fill shall have a Plasticity Index between 20 and 45.
- C. Granular Material: Shall be a graded, well draining material conforming to fine aggregate as described in ASTM C-33-85.
- D. Utility Embedment and Backfill Material: Materials installed as required by specific class of embedment noted on plans or in City standard specifications and details.
- E. On-site Soils: All on-site soils used for construction shall be free of debris such as bricks, concrete, steel, wood and other vegetative matter, asphalt, plastic, etc.
- F. Debris: Stumps, limbs, vegetable matter, trash, rubbish, and otherwise objectionable material encountered in excavating shall become the property of the Contractor and shall be disposed of off-site.

PART 3 - EXECUTION

3.1 GENERAL

- A. This part shall include the placing of all specified materials at the locations and elevations as shown on the Drawings.
- B. The work performed hereunder shall conform in every respect to the Contract Documents, applicable city and state requirements, applicable local ordinances, and regulations of the Occupational Safety and Health Administration (OSHA). In the event that the Contract Documents do not adequately specify materials, methods of construction, or workmanship of any portion of the proposed work, the NCTCOG Standard Specifications for Public Works Construction, as amended in the Contract Documents, shall apply.

3.2 EXCAVATION

- A. All excavation shall be made in such manner as to permit all surfaces to be brought to final line and grade within plus or minus 0.1 foot. Over excavation shall be restored by the Contractor at his own expense. Finished grades consistently high or low will not be acceptable and shall be corrected by the Contractor at his expense.
- B. Unsuitable, soft or yielding material present at pavement subgrade shall be removed to a minimum depth of 2 feet below finish subgrade elevations or to a depth determined by the Owner, depending on the type of material removed. Finished subgrade for paving areas shall be proof rolled with a heavy (25 to 50 ton) pneumatic tired roller to determine location of soft spots. Soft areas shall be removed and reworked to meet project requirements.
- C. Finished subgrade shall be inspected by the Contractor's on-site geotechnical/testing laboratory for determination that subgrade meets project specifications. Provide reports certifying that subgrades meet project specifications.
- D. Utility trench excavation shall conform to applicable trench excavation protection and safety requirements.

3.3 FILLING AREAS

- A. Fills shall be constructed as required to meet the lines and grades indicated on the Drawings. If rock cuttings are used, they shall be broken or crushed so that the maximum dimension is 4 inches. All rock is to be used in the bottom of fills. No rocks will be allowed in the upper 24 inches of the fill.
- B. Equipment for compacting fills shall be sheeps-foot rollers, rubber-tired rollers, and other Owner-approved equipment capable of obtaining required density.
- C. The combined excavation and fill placement shall be such that the material when compacted in the fill will be blended sufficiently to secure the best practicable degree of compaction. The suitability of the materials shall be subject to approval of the testing laboratory. Successive loads of material shall be dumped, then spread and mixed to give a horizontal layer of not more than 8 inches in depth, loose measurement. After each layer of fill has been spread to the proper depth it shall be thoroughly manipulated with a disc plow or other suitable and approved equipment until the material is uniformly mixed, pulverized, and brought to a uniform approved moisture content.
- D. All filling shall be made in such a manner as to permit all surfaces to be brought to final line and grade within plus or minus 0.1 foot. Finished grades consistently high or low will not be acceptable and shall be corrected by the Contractor.
- E. Any material, whether undisturbed in place or fill, having a moisture content too high for proper compaction shall be dried by aeration until the moisture content is lowered to a point where

satisfactory compaction may be obtained. If the moisture of the fill material is too low, water shall be added to the material, and the material shall be thoroughly mixed by blading and discing to produce a uniform and satisfactory moisture content.

- F. If, in the opinion of the testing laboratory, the rolled surface of any layer or section of the fill is too smooth to bond properly with the succeeding layer or adjacent section, the surface shall be roughened by discing or scarifying to the satisfaction of the testing laboratory before placing succeeding layers or adjacent sections.

3.4 GRADING

- A. All excavated or filled areas shall be brought to final line and grade by finish grading, paving, or placement of surface materials. Grades not otherwise shown shall be uniform levels or slopes between elevation points and conforming to adjacent graded areas. In areas requiring clay fill material, the material shall be placed and compacted in evenly distributed layers, each layer 8 inches or less in depth before compaction and grading. The compaction requirement for general site fill shall range from 95% to 100% of maximum density (-2 to +5 percentage points above optimum moisture) as determined by ASTM D-698 (Standard Proctor Density) or as directed by the on-site geotechnical/testing laboratory for specific types of material. In general, areas adjacent to roads, structures, or other finished surfaces shall be graded to provide positive drainage to drainage collection facilities.
- B. Grades shown on plans are finished grades. Contractor shall coordinate proper placement of the required depth of topsoil in areas requiring topsoil. Contractor shall also coordinate proper subgrade elevations required to achieve finish grades. Topsoil material shall conform to the requirements of the Contract Documents.

3.5 NON-TREATED SUBGRADE PREPARATION

- A. All subgrade under walks and other areas where lime or other treatment is not described shall be prepared by scarifying the top six (6) inches of the material below finish subgrade elevation with disc plow or other suitable and approved equipment. The moisture content shall be adjusted by wetting or aerating to optimum as determined by the testing laboratory. The material shall then be recompacted to the required density (92% - 98% of optimum) as determined by ASTM D-698 (Standard Proctor Density). Finish subgrade shall be a uniformly graded surface with no loose material such as rocks, clods, or other debris present.

3.6 TRENCH BACKFILL

- A. All materials used for trench filling shall be on-site soils, except where "Sand Backfill" or other materials are called for in the Drawings or in the Specifications.
- B. Trench backfill shall be compacted to a minimum of 95% of the maximum or slightly above optimum moisture density content as determined by ASTM D698 (Standard Proctor Density) or as directed by the on-site geotechnical/testing laboratory for specific types of material.
- C. A distinction is made between trench backfill and utility embedment. The requirements of this item pertain only to trench backfill. Utility embedments are described in the standard specifications, as modified herein.

3.7 SHEETING, SHORING, AND BRACING

- A. Trench safety systems, as required, shall be designed and provided by the Contractor and shall conform to applicable trench excavation protection requirements of these contract documents and specifications.

3.8 TESTING AND LABORATORY SERVICE

- A. Testing shall comply with applicable sections of the referenced specification, modified as noted.
- B. Fill and subgrade compaction: The testing laboratory shall make tests of in-place density in accordance with ASTM D2922 at points selected by the Owner. A minimum rate of one density test for each 5,000 square feet per lift will be made, unless otherwise directed by the Owner.
- C. Utility backfill compaction: The testing laboratory will make tests of in-place density in accordance with ASTM D2922 at points selected by the Owner. For utility construction, a minimum of one density test will be made for every 100 linear feet on every other backfill lift, unless otherwise directed by the Owner. Each utility line constructed shall have a minimum of one density test made on every other backfill lift. Backfill operations at inlets, manholes, retaining walls, and other structures will be monitored by the testing laboratory, with density tests made at the above stated frequency. It will be the responsibility of the Contractor to notify the Owner and testing laboratory prior to starting backfill operations.
- D. Reports: The testing laboratory shall send copies of the reports to the following:
 - 1. OWNER 1 copy
 - 2. CONTRACTOR 1 copy
 - 3. ENGINEER 1 copy
 - 4. ARCHITECT 1 copy
 - 5. RECORD 1 copy

END OF SECTION 312200

SECTION 313510

GRASS SEEDING FOR SLOPE PROTECTION AND EROSION CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Items required for preparing ground, providing for sowing of seeds and fertilizing, mulching with straw, watering, weed control, and other management practices required for erosion control and to obtain a grass cover. Areas requiring seeding for erosion control will include the drainage ditch embankment and all areas disturbed by construction, including the working easement.

1.2 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Divisions 1 Specification Sections, apply to this Section.

1.3 RELATED SECTIONS

- A. Temporary erosion and sediment control during construction - Section 015713.
- B. Site clearing and grubbing - Section 311100.
- C. Excavation, backfill and grading for site work - Section 312200.

1.4 REFERENCES

- A. Latest version of Texas Department of Transportation (TxDOT), Standard Specifications for Construction of Highways and Streets and Bridges.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements:

1. Seed shall comply with U.S. Department of Agriculture rules and regulations under the Federal Seed Act.
2. Bags of fertilizer shall be fully labeled complying with applicable state fertilizer laws and shall bear the name, trade name, trademark, warranty of producer, and analysis of contents.
3. Planting material shall conform to Texas Department of Transportation requirements for rural area species in sandy soils as shown in this Section.

B. Contractor's Qualifications:

1. The work of this Section shall be performed by a Contractor specializing in seeding and/or landscape installations.
2. Guarantee all materials to be of quality and quantity as specified herein.

C. Water: For watering plantings, use water free of impurities injurious to plant growth.

1.6 SUBMITTALS

A. Certificates of Conformance or Compliance:

1. Seed: Type, purity, and germination rate analysis.
2. Fertilizer: Manufacturer's guaranteed analysis.
3. Hydromulch Fiber: Manufacturer's guaranteed analysis.
4. Tackifier: Manufacturer's guaranteed analysis.

1.7 PRODUCT HANDLING

A. Seed:

1. Furnish seed in sealed standard containers.
2. Seed which has become wet, moldy, or otherwise damaged in transit or in storage shall not be used.
3. Wet, moldy, or otherwise damaged seed will be rejected and removed from site.

B. Fertilizer: Deliver to site in sealed bags.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Seed: Refer to Planting Schedule this Section.

B. Fertilizer: Complete fertilizer, for use with hydromulch, with minimum 50 percent nitrogen derived from organic sources. The dryweight percentage shall be 18-6-12 (N-P-K), also containing zinc and iron.

C. Wood Cellulose Fiber Mulch:

1. Specially prepared wood cellulose fiber, for use with hydraulic application of grass seed and fertilizer, processed to contain no growth or germination inhibiting factors and dyed appropriate color to facilitate visual metering of application of materials. Green is preferable.
2. Containing not in excess of 10 percent moisture, air dry weight basis.
3. Fibers become uniformly suspended in slurry tank mixture to form homogeneous slurry.

D. Tackifier: Provide a binding agent to hold mulch, fiber, and seed in place. Tackifier shall be water-soluble or shall be remaining in suspension during the application process.

1. Source: Hydro-Tack, N-Tack, or Terra-Tack.

E. Water: Free from oil, acid, alkali, salt, and other substances harmful to growth of grass.

PART 3 - EXECUTION

3.1 GENERAL

A. Accomplish seeding and mulching work and seeding and fertilizing work within the planting periods specified in paragraph entitled "Planting Schedule" of this Section.

B. If factors prevail to such an extent that satisfactory results are not likely to be obtained, stop any phase of the work and resume work when desired results are likely to be obtained.

C. Conduct seeding and mulching operations across slope.

- D. Accomplish seeding and mulching on all disturbed areas and as specified on areas indicated on Drawings, on all areas disturbed during construction, on all fill areas, on graded areas, and 20 feet on each side of new roadways, drainage channels, outfall, berms and all borrow and stockpile areas.

3.2 INSPECTION AND TEST

A. Seed:

1. Each lot of seed may be resampled and retested in compliance with latest rules and regulations under Federal Seed Act at discretion of Owner.
2. Make resampling and retesting by or under supervision of Owner.
3. If these tests reveal seed to be below specified pure live seed content, plant additional seed to compensate for deficiency at no additional cost to Owner.
4. Seed retests: Conducted by approved laboratory.
5. Make allowance for actual pure live seed content of specified grasses in determining actual planting rate.

B. Fertilizers:

1. Retain fertilizer bags, and upon completion of project, a final check of total quantities of fertilizer used will be made against total area treated.
2. If minimum rates of application have not been met, distribute additional quantities of these materials to make up minimum application specified.

- C. Mulch: At least five (5) days prior to commencement of mulching operations, notify Owner of sources from which mulch materials are available and quantities thereof.

3.3 SEED BED AND PREPARATION

A. General:

1. Perform seeding after designated areas for seeding and fertilizing have been graded and smoothed to finished lines and grades and typical cross-sections.
2. Equipment necessary for proper preparation of ground surface and for handling and placing required materials shall be on hand and in good condition before work is started.

B. Grading:

1. Maintain grades on areas to be seeded in true and even condition without ruts or tracks.
2. Maintenance shall include any necessary repairs to previously graded area prior to planting of seed.

C. Tillage:

1. Accomplish in such manner as to prepare seed bed.
2. Use tractors with adequate horsepower and heavy duty tillage equipment to accomplish specified tillage operations.
3. Till areas with heavy duty disc, as necessary, followed by disking with disc harrow and smoothing with weighted spike tooth harrow, railroad irons, or bridge timber float drag.

4. Cultivate seed bed to state of good tilth so that soil particles on surface are small enough and lie close enough together to prevent seed from being covered too deep for optimum germination.
5. Leave areas smooth for ease of mowing.
6. Depth of tillage: 4 inches.

D. Cleanup:

1. Prior to seeding, clear surface of stone, stumps, or other objects larger than 3 inches in thickness or diameter and of roots, brush, wire, grade stakes, and other objects that might be a hindrance to maintenance operations.
2. Mow, rake, and remove vegetation that may interfere with operations from site.

3.4 APPLICATION OF FERTILIZER

- A. Apply fertilizer simultaneously with seed and mulch in hydraulic equipment using specified rate of application.

3.5 PLANTING SEED

A. General:

1. Conduct seeding equipment calibration tests as means of determining coverage per load to plant seed at specified rates.
2. If unplanted skips are noted after germination and growth of grass, seed unplanted areas with grasses that were to have been planted at no additional cost to Owner.

B. Seeding:

1. Rate of application: Refer to Planting Schedule in this Section.
2. Uniformly plant one-half of total amount of seed to depth of 1/4 inch to 1/2 inch by use of approved grain drills, native grass seed drills, Brillion Cultipacker seeder or equivalent; or by broadcasting seed and harrowing or raking lightly to cover seed.
3. Spray on other one-half of total amount of seed with hydraulic equipment in combination with fertilizer and mulch.

3.6 APPLICATION OF MULCH

- A. Area to be seeded shall first be cultipacked with Brillion Cultipacker or equivalent.
- B. Make application of wood cellulose fiber mulch slurry with hydraulic equipment and accomplish immediately upon completion of final tillage.
- C. Hydraulically spray slurry on ground to form blotter-like ground cover uniformly impregnated with grass seed which, after application, will allow absorption of moisture and allow rainfall or mechanically applied watering to percolate to underlying soil.
- D. Apply wood cellulose fiber mulch at a rate of 50 pounds per 1000 square feet in combination with fertilizer at rate of 10 pounds per 1000 square feet and seed at rate prescribed in paragraph, "Planting Schedule" in this Section. Contractor to repeat fertilizer (10 pounds per 1000 square feet) in 40 to 65 days.
- E. Use hydraulic equipment application of wood fiber mulch having built-in agitation system with operating capacity sufficient to agitate, suspend, and mix homogeneously slurry containing up to 40 pounds of fiber plus combined total of 70 pounds of fertilizer solids for each 100 gallons of water.

- F. Slurry Lines: Large enough to prevent stoppage.
- G. Accomplish application of mulch slurry same day as completion of final tillage.
- H. Keep mulch moist by daily application of water, if necessary, for minimum of ten days or until seeds in mulch have germinated and rooted in soil.

3.7 MAINTENANCE OF TURF

A. General:

- 1. Contractor is responsible for maintaining areas during planting period and until other work under contract has been completed.
- 2. Maintenance shall consist of protection, replanting, maintaining existing grades, and repair of erosion damage.

B. Protection:

- 1. Protect seeded and mulched areas against traffic or other use immediately after seeding is completed.
- 2. Maintain protection of these areas until completion of work under contract.

C. Replanting:

- 1. Prepare, reseed, and remulch areas on which less than six live growing grass plants per square foot are present ten days after planting.
- 2. Replant as specified for original planting.
- 3. Perform replanting required without cost to Owner.

D. Maintenance of Grades and Repair of Erosion Damage:

- 1. Contractor is responsible for maintaining grades of slopes after commencement of planting operations and during maintenance period.
- 2. Promptly repair any damage to finished surface grades.
- 3. Promptly repair damage in the event erosion occurs from rainfall or other causes.
- 4. Correct ruts, ridges, tracts, and other surface irregularities and replant areas where required prior to acceptance.

3.8 WATERING AND MAINTENANCE

- A. Apply water after compaction and seeding. Apply water using portable pipe or hose lines with rotating sprinklers within 24 hours after seeding. Sprinkling may be done with water trucks and hoses in certain locations where it is impractical to use portable lines or hoses. Supervise sprinkling to prevent runoff of water. The Contractor shall furnish all pumps, hoses, pipe lines, water trucks, and sprinkling equipment required. Water with approved watering equipment in compliance with the schedule of 14,000 gal/acre weekly for 7 weeks or as required to achieve grass coverage, whichever is greater. Do not water at rates exceeding 5,000 gal/acre/hr. to prevent runoff. Water/Irrigate in compliance with the following schedule:

- 1. Bermuda Grass: 14,000 gal./acre for 7 – 10 weeks
- 2. Native Grasses: 14,000 gal./acre for 12 -16 weeks

3.9 WEEDING

- A. Keep all seeded areas relatively free from weeds and undesirable grasses using approved methods, materials, and timing.

3.10 DISEASE AND INSECT/PEST CONTROL

- A. Upon discovery of any disease or insect pest infestation, identify or have identified the nature or species of infestation and submit the proposed method of control for approval prior to application of control measures.

3.11 MOWING

- A. Should the height reach 3-1/2 inches or greater on the average before final acceptance, mow the grass to a height of 2-1/2 inches. Mow as required until work is accepted.

3.12 PLANTING SCHEDULE

- A. Minimum percentage by weight of pure live seed in each lot of seed shall be 85 percent: seed planted at rate per acre indicated under pure live seed required per acre. Note: Percent Pure Live Seed = Percent Purity times Percent Germination.
- B. Seed shall be treated with fungicide.
- C. Weed seed shall not exceed 10 percent by weight of total of pure live seed and other material in mixture.
- D. Johnson grass, ragweed, nutgrass, or other noxious seed in mixture will be cause for rejection of seed.
- E. Optimal planting period is February 1 through May 15th. If planting occurs outside of the optimal planting period stated, planting period may extend upon approval of the owner.

END OF SECTION 313510

SECTION 321313

PORTLAND CEMENT CONCRETE PAVING (CIVIL)

PART 1 - GENERAL

1.1 GENERAL:

- A. The Conditions of the Contract and applicable requirements of Division 1 – General Requirements apply to the work of this Section. Applicable sections of the North Central Texas Council of Government (NCTCOG) Standard Specifications for Public Works Construction as modified herein, also apply.
- B. The City of Lancaster requirements shall also apply.

1.2 SECTION INCLUDES:

- A. The furnishing of all labor, material and equipment to complete placement of all Portland Concrete Pavement as shown in the plans.

1.3 RELATED SECTIONS:

- A. Applicable Sections of Division 1 – General Requirements.
- B. Applicable Sections of Division 31 – Earthwork.
- C. Applicable Sections of Division 32 – Exterior Improvements.
- D. Applicable Sections of the Referenced Specifications.
- E. Special Provisions.

1.4 REFERENCE SPECIFICATIONS:

- A. All work covered in this Section shall be governed by the latest edition of the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction as amended and/or supplemented by these Specifications. These Specifications and Special Provisions govern the reference Specification. Any item not modified or amended by these Specifications shall be deemed correct in the reference Specifications.
- B. Work not described herein or in the NCTCOG Standard Specifications shall be governed by the latest version of Texas Department of Transportation (TxDOT), Standard Specifications for Construction of Highways, Streets and Bridges.

PART 2 - PRODUCTS

2.1 GENERAL:

- A. This part shall include the furnishing of all material of the dimensions and types as shown on the Drawings or as established by the Engineer.

2.2 MATERIALS:

- A. Materials shall be in accordance with the applicable portions of the NCTCOG Standard Specifications Part 2, Materials.

PART 3 - EXECUTION

3.1 GENERAL:

- A. This part shall include the placing of all specified materials at the locations and elevations as shown on the Drawings or as established by the Engineer.
 - B. The work performed hereunder shall conform in every respect to the Contract Documents, applicable City requirements, applicable local ordinances, and regulations of the Occupational Safety and Health Administration (OSHA). In the event that the Contract Documents do not adequately specify materials, methods of construction, or workmanship of any portion of the proposed work, the NCTCOG Standard Specifications for Public Works Construction, as amended in the Contract Documents, shall apply.
-

C. INSTALLATION:

- 3.2 Construction methods shall be in accordance with the NCTCOG Standard Specifications, as amended by these Specifications.

END OF SECTION 321313

SECTION 321314
PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pavement markings

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Pavement Markings Layout: For each parking area.

1.3 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.
 1. Review methods and procedures related to concrete pavement marking.

1.4 PROJECT CONDITIONS

- A. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials or 55 deg F for water-based materials], and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 PAVEMENT MARKINGS

- A. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than 45 minutes.
 1. Color: White, or as indicated.
- B. Fire Lane Striping Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than 45 minutes.
 1. Color: White text on red background, configuration as required by City Ordinance

PART 3 - EXECUTION

3.1 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow concrete paving to cure for a minimum of 28 days and be dry before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.
 - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.
 - 2. Broadcast glass beads uniformly into wet markings at a rate of 6 lb/gal.

3.2 PAVEMENT MARKINGS SCHEDULE

- A. Schedule is found on site plans.

END OF SECTION 321312

SECTION 321316
DECORATIVE CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes colored concrete paving.
- B. Related Sections:
 - 1. Division 3 Section "Concrete" for cast-in-place concrete paving and architectural concrete with other finishes for sidewalks, and retaining walls.
 - 2. Division 7 Section "Joint Sealants" for joint sealants in expansion and contraction joints within decorative concrete paving and in joints between decorative concrete paving and asphalt paving or adjacent construction.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of product, ingredient, or admixture requiring color, selection.
- C. Samples for Verification: For each type of exposed color.
- D. Other Action Submittals:
 - 1. Design Mixtures: For each decorative concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- E. Qualification Data: For qualified Installer and ready-mix concrete manufacturer.
- F. Material Certificates: For the following, from manufacturer:
 - 1. Cementitious materials.
 - 2. Steel reinforcement and reinforcement accessories.
 - 3. Fiber reinforcement.
 - 4. Admixtures.
 - 5. Curing compounds.
 - 6. Applied finish materials.
 - 7. Bonding agent or epoxy adhesive.
 - 8. Joint fillers.

- G. Material Test Reports: For each of the following:
 - 1. Aggregates. Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- H. Field quality-control reports.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer of decorative concrete paving systems.
- B. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").
- C. Source Limitations: Obtain decorative concrete paving products and each type or class of cementitious material of the same brand from same manufacturer's plant, and obtain each aggregate from single source.
- D. Concrete Testing Service: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures.
- E. ACI Publications: Comply with ACI 301 unless otherwise indicated.
- F. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockups of full-thickness sections of decorative concrete paving to demonstrate typical joints; surface color, pattern, and texture; curing; and standard of workmanship.
 - 2. Build mockups of decorative concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Architect and not less than 96 inches by 96 inches.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- G. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to decorative concrete paving, including but not limited to, the following:
 - a. Concrete mixture design.
 - b. Quality control of concrete materials and decorative concrete paving construction practices.
 - 2. Require representatives of each entity directly concerned with decorative concrete paving to attend, including the following:

- a. Contractor's superintendent.
- b. Decorative concrete paving Installer.

1.5 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 - 1. Use flexible or uniformly curved forms for all curves. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 STEEL REINFORCEMENT

- A. Recycled Content: Provide steel reinforcement with an average recycled content of steel so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
- C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the cementitious materials, of the same type, brand, and source, indicated in Division 32 Section "Concrete Paving."
- B. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following :

- a. Bon Tool Co.
- b. Brickform.
- c. Butterfield Color.
- d. ChemMasters.
- e. Davis Colors.
- f. Dayton Superior Corporation.
- g. Decosup Inc.
- h. Dynamic Color Solutions, Inc.
- i. Elementis Pigments.
- j. Hoover Color Corporation.
- k. Lambert Corporation.
- l. QC Construction Products.
- m. Scofield, L. M. Company.
- n. Solomon Colors, Inc.
- o. Specialty Concrete Products, Inc.
- p. Stampcrete International Ltd.
- q. SureCrete Design Products.

- C. Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type I, Class B, manufactured for colored concrete.

1. For integrally colored concrete, curing compound shall be pigmented type approved by coloring admixture manufacturer.

2.4 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.5 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
- B. Proportion mixtures to provide normal-weight concrete same for concrete paving.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below decorative concrete paving to identify soft pockets and areas of excess yielding.
 - 1. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Division 31.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.
- B. Protect adjacent construction from discoloration and spillage during application of color hardeners, release agents, stains, curing compounds, and sealers.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.

1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
1. Locate expansion joints at intervals of 50 feet unless otherwise indicated.
 2. Extend joint fillers full width and depth of joint.
 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent decorative concrete paving:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
 - a. Tolerance: Ensure that grooved joints are within 3 inches either way from centers of dowels.
 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 - a. Tolerance: Ensure that sawed joints are within 3 inches in both directions from center of dowels.
 3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt or sleeve one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.

- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.
- K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
 - 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 - 2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
 - 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.

- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

3.8 INTEGRALLY COLORED CONCRETE FINISH

- A. Integrally Colored Concrete Finish: After final floating, apply the following finish:
 - 1. Medium -Textured Broom Finish is the typical finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, medium-line texture.
 - 2. Coarse sandblast finish – used where indicated. Match Architect-approved sample from sample series to be prepared by the Contractor.

3.9 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Compound: Apply curing compound immediately after final finishing. Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas that have been subjected to heavy rainfall within three hours after application. Maintain continuity of coating, and repair damage during curing period.
 - 1. Cure integrally colored concrete with a pigmented curing compound.

3.10 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
 - 1. Elevation: 3/4 inch.
 - 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 - 3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/2 inch.
 - 4. Lateral Alignment and Spacing of Dowels: 1 inch.
 - 5. Vertical Alignment of Dowels: 1/4 inch.
 - 6. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches of dowel.
 - 7. Joint Spacing: 3 inches.
 - 8. Contraction Joint Depth: Plus 1/4 inch, no minus.

9. Joint Width: Plus 1/8 inch, no minus.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests: Testing and inspecting agency shall make additional tests at Contractor's expense of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- G. Decorative concrete paving will be considered defective if it does not pass tests and inspections.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- I. Prepare test and inspection reports.

3.12 REPAIRS AND PROTECTION

- A. Remove and replace decorative concrete paving that is broken or damaged or does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect decorative concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain decorative concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321316

SECTION 328400
PLANTING IRRIGATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Furnish all work and materials, appliances, tools, equipment, facilities, transportation, point of connection and all other services required for the installation of a complete underground permanent, as shown on drawings and/or specified herein. When the term "Contractor" is used in this section, it shall refer to the irrigation Contractor.
- B. Related Work Specified Elsewhere:
 - 1. Turfs and Grasses: Section 329200.
 - 2. Plants: Section 329300.
 - 3. Native Grass Seeding: Section 329400.

1.2 QUALITY ASSURANCE

The following Codes, Regulations, Reference Standards, and Specifications apply to work included in this section: ASTM: D2241, D2464, D2466, D2564, and D855.

1.3 WARRANTY AND MAINTENANCE

- A. The Contractor shall warranty material and workmanship for one year after final acceptance including repair and replacement of defective materials, workmanship, and labor.
- B. Maintenance during warranty shall include, but not necessarily be limited to, the following:
 - 1. Adjustment of sprinkler height and plumb to compensate for settlement and/or plant growth.
 - 2. Backfilling of all trenches.
 - 3. Adjustment of head coverage (arc of spray) as necessary.
 - 4. Unstopping heads plugged by foreign material.
 - 5. Drip System:
 - a. Remove disc stack and rinse with water and replace every 6 months.
 - b. Compare the controller runtimes and frequency to the to the application rate for Techline CV at the spacing used. If the amount of water in inches/hour is insufficient or exceeds the requirement of the plant, adjust accordingly.
 - c. Refer to "Techline Design Manual" by Netafimusa.com.
 - 6. Adjustment of controller as necessary to insure proper sequence and watering time.
 - 7. All maintenance necessary to keep the system in good operating order. Repair of damage caused by vandals, other contractors or weather conditions shall be considered extra to these specifications.
- C. Warranty and maintenance after final acceptance does not include alterations as necessitated by re-landscaping, re-grading, addition of trees or the addition, and/or changes in sidewalks, walls, driveways, etc.
- D. Installations must declare compliance with section 1903.251, Texas Occupations Code.

1.4 SUBMITTALS

- A. The Contractor shall submit shop drawings or manufacturer's "cut sheet" for each type of sprinkler head, pipe, controller, valves, check valve assemblies, valve boxes, wire, conduit, fittings, drip irrigation lines and components, and all other types of fixtures and equipment proposed to install on the job. The submittal shall include the manufacturer's name, model number, equipment capacity, and manufacturer's installation recommendation, if applicable, for each proposed item.
- B. No partial submittal will be accepted and submittals shall be neatly bound into a brochure and logically organized. After the submittal has been approved, substitutions will not be allowed except by written consent of the Owner's Representative.
- C. Shop drawings shall include dimensions, elevations, construction, details, arrangements, and capacity of equipment, as well as manufacturer's installation recommendations.

1.5 "APPROVED EQUAL" SUBSTITUTIONS

Several items in this section and on the plans are specified by a manufacturer's brand name and catalog number, followed by the phrase "or approved equal". This is not intended to unduly restrict competitive procurements or bidding, but is done to assure a minimum standard of quality which is believed to be best for the item specified.

1.6 CODES/PERMITS

- A. All work under this section shall comply with the provisions of these Specifications, as illustrated on the accompanying drawings, or as directed by the Owner's Representative and shall satisfy all applicable local codes, ordinances, or regulations of the governing bodies and all authorities having jurisdiction over this Project.
- B. Installation of equipment and materials shall be done in accordance with requirements of the National Electrical Code, City of Dallas Plumbing Code, and standard plumbing procedures. The drawings and these Specifications are intended to comply with all the necessary rules and regulations; however, some discrepancies may occur, the Contractor shall immediately notify the Owner's Representative in writing of the discrepancies and apply for an interpretation. Should the discovery and notification occur after the execution of a contract, any additional work required for compliance with the regulations shall be paid for as covered by these Contract Documents.
- C. The Contractor shall give all necessary notices, obtain all permits, and pay all costs in connection with his work; file with all governmental departments having jurisdiction; obtain all required certificates of inspection for his work and deliver to the Owner's Representative.
- D. The Contractor shall include in the work any labor, materials, services, apparatus, or drawings in order to comply with all applicable laws, ordinances, rules and regulations whether or not shown on the drawings and/or specified.
- E. The installation of the irrigation system shall be made by an individual or firm duly qualified with a minimum of five years experience installing systems of similar size and scope, and licensed under Article No. 8751 VTCS, Titled "Licensed Irrigators Act", S.B. No. 259 as passed by the 66th Texas Legislature.

1.7 EXISTING UTILITIES

- A. Locations and elevations of various utilities included with the scope of this work have been obtained from the most reliable sources available and should serve as a general guide without guarantee to accuracy. The Contractor shall examine the Site and verify to his own satisfaction the locations and elevation of all utilities and availability of utilities and services required. The

Contractor shall inform himself as to their relation to the work and the submission of bids shall be deemed as evidence thereof. The Contractor shall repair at his own expense, and to the satisfaction of the Landscape Architect, for damage to any utility shown or not shown on the plans.

- B. Should utilities not shown on the plans be found during excavations, Contractor shall promptly notify the Landscape Architect for instructions as to further action.
- C. Contractor shall make necessary adjustments in the layout as may be required to connect to existing stub-outs, should such stub-outs not be located exactly as shown and as may be required to work around existing work, at no increase in cost to the Owner. All such work will be recorded on record drawings and turned over to the Landscape Architect prior to final acceptance.

1.8 RETRO-FIT

- A. Various locations marked "RETRO-FIT" on the plan includes:
 - 1. Sprinkler pressure line re-routing (do not exceed pipe flows greater than 5fps).
 - 2. Existing gate valves, Controllers, control valves, drip irrigation shall be repaired, replaced and or re-routed in the field to best fit properties impacted.
 - 3. Follow all installation details shown on irrigation detail sheet.
 - 4. All adjustments made to other property owner's irrigation systems shall be approved in writing by all parties impacted (BEFORE COMENCING ANY WORK).

1.9 RECORD DRAWINGS

- A. Record dimensioned locations and depths for each of the following:
 - 1. Point of connection to proposed backflow device as shown on plan.
 - 2. Sprinkler pressure line routing (provide dimensions for each 100 lineal feet (maximum) along each routing, and for each change in directions).
 - 3. Gate valves.
 - 4. Sprinkler control valves (buried only).
 - 5. Control wire routing.
 - 6. Drip irrigation assemblies.
 - 7. Other related items as may be directed by the Owner's Representative.
- B. Locate all dimensions from two permanent points (buildings, monuments, sidewalks, curbs, or pavements).
- C. Record all changes which are made from the Contract drawings, including changes in the pressure and non-pressure lines.
- D. Record all required information on a set of blackline prints of the Contract drawings. Do not use these prints for any other purpose.
- E. Maintain information daily. Keep Contract drawings at the Worksite at all times and available for review by the Owner's Representative.
- F. When record drawings have been approved by the Owner's Representative, transfer all information to a set of reproducible mylars using permanent ink or provide a bond copy and electronic file on CD of the final record as-built drawings. Changes using ball-point pen are not acceptable. Make dimensions accurately at the same scale used on original Drawings, or larger. If photo reduction is required to facilitate controller chart housing, notes or dimension must be a minimum 1/4 inch in size.

- G. Reproducible mylars and/or bonds and CD will be furnished by the Owner cost for printing and handling.

1.10 CONTROLLER CHART

- A. Do not prepare chart until record drawings have been approved by the Owner's Representative.
- B. Provide one controller chart for the stations used on the automatic controller(s).
 - 1. Chart may be a reproduction of the record drawing, if the scale permits fitting within the controller door. If photo reduction prints are required, keep reduction to maximum size possible to retain full legibility.
 - 2. Chart shall be blackline print of the actual system, showing the area covered by that controller.
- C. Identify the area of coverage of each remote control valve, using a distinctly different pastel color, drawn over the entire area of coverage.
- D. Following approval of chart by the Owner's Representative, it shall be hermetically sealed between two layers of 20 mil. thick plastic sheet.
- E. Chart must be completed and approved prior to final acceptance of the irrigation system.

1.11 OPERATING AND MAINTENANCE MANUALS

- A. Provide individual bound manuals detailing operating and maintenance requirements for irrigation systems.
- B. Manuals shall be delivered to the Owner's representative for review and approval no later than 10 days prior to completion of work. Revise manual as required.
- C. Provide descriptions of all installed materials and systems in sufficient detail to permit maintenance personnel to understand, operate, and maintain the equipment.
- D. Provide the following in each manual:
 - 1. Index sheet, stating Irrigation Contractor's name, address, telephone number, and name of person to contact.
 - 2. Duration of guarantee period.
 - 3. Equipment list providing the following for each item:
 - a. Manufacturer's name.
 - b. Make and model number.
 - c. Name and address of local manufacturer's representative.
 - d. Spare parts list in detail.
 - e. Detailed operating and maintenance instructions of major equipment.
 - 4. Recommended programs for watering by season.

1.12 CHECKLIST

- A. Provide a signed and dated checklist, and deliver to the Owner's Representative prior to final acceptance of the work.
- B. Use the following format:
 - 1. Plumbing permits: if none required, so note.
 - 2. Material approvals: approved by and date.
 - 3. Pressure line tests: by whom and date.
 - 4. Record Drawings: received by and date.
 - 5. Controller charts: received by and date.
 - 6. Materials furnished: received by and date.

7. Operation and maintenance manuals: received by and date.
8. System and equipment operation instructions: received by and date.
9. Manufacturer's warranties if required: received by and date.
10. Written guarantee: received by and date.
11. Lowering of heads in lawn areas: if incomplete, so state.

1.13 ELECTRIC POWER

Electric power to operate the controller shall be furnished by the Electrical Contractor unless otherwise noted on the plans. Service wiring to the controller cabinet shall be furnished by the Irrigation Contractor.

1.14 WATER FOR TESTING

Unless noted otherwise on the plans or elsewhere, water is available on the site necessary for testing, flushing, and jetting.

1.15 BORINGS, SLEEVES AND ELECTRICAL CONDUITS

Sleeves and electrical conduits are the responsibility of the Irrigation Contractor to install prior to paving or related construction and should be installed as noted on the approved irrigation plan. Contractors shall be responsible for locating all sleeves and conduits at no additional cost to the Authority. Borings under existing paving will be required where noted on the drawings and shall be provided at no additional cost to the Owner. Borings shall be a minimum of 18 inch depth and new pipes shall be incased in Schedule 40 PCV sleeves.

1.16 ATTIC STOCK - SPARE PARTS

The Contractor shall supply the Owner with five parts each of irrigation system components excluding controller, mainline pipe and lateral pipe. These items will be kept for use by the Owner after the Organic Landscape Maintenance for One (1) Year (Section 02980) period is completed.

1.17 COMMISSIONING

- A. This Section specifies a system which will be commissioned as part of the construction process. Documentation and testing of these systems, as well as training of the Owner's operation and maintenance personnel, is required in cooperation with the Owner's Commissioning Coordinator.
- B. Refer to Division 1 Section 01810, Commissioning, for detailed commissioning requirements.
- C. Commissioning requires the participation of this Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents. The general commissioning requirements and coordination are detailed in the Division 1 Section 01810 referenced above. This Contractor shall be familiar with all parts of the Commissioning Section and the commissioning plan issued by the Commissioning Coordinator and shall execute all commissioning responsibilities assigned to them in the Contract Documents.

1.18 POINT OF CONNECTION

- A. Verify main, meter location, and water pressure at the site, if minimum residual water pressure is less than required, notify owner's representative prior to construction. Contractor shall notify the owner's representative of such and shall receive owners' approval prior to any construction.
- B. Follow all state and local codes.

PART 2 - PRODUCTS

2.1 GENERAL

Unless otherwise noted on the plans, all materials shall be new and unused. The irrigation equipment catalog numbers used for reference in these Specifications are to establish minimum quality standards and may be substituted with an "approved equal" as outlined in Paragraph 1.06 of this section, unless specifically requested by the campus maintenance staff and noted as having no "approved equal" to be accepted.

2.2 POLYVINYL CHLORIDE PIPE (PVC PIPE)

PVC pipe manufactured in accordance with ASTM Standards noted herein.

- A. Marking and Identification: PVC pipe shall be continuously and permanently marked with following information: Manufacturer's name, size, type of pipe, and material, PVC number, Product Standard number, and the NSF (National Sanitation Foundation) Seal.
- B. PVC pipe fittings: Shall be of the same material as the PVC pipe specified and compatible with PVC pipe furnished. Solvent weld type shall be for Schedule 40.
- C. PVC Pipe: Lateral and Mainline pipe shall be Class 200 solvent weld, SDR-21, PS 22-70 for all sizes 3/4" - 3". All 1/2" pipe shall be solvent weld SDR- 13.5, Class 315.
- D. Flexible PVC Risers (Nipples): All flexible PVC nipples shall be made from virgin PVC material, and shall comply with ASTM D2287, shall be tested at 200 P.S.I. static pressure for 2 hours and have a quick burst rating of a minimum 400 P.S.I. Flexible PVC pipe nipples shall be factory assembled only.

2.3 SWING JOINTS

Swing joints shall be O-ring seal type. Use Lasco or approved equal.

2.4 WIRE AND SPLICES

- A. All wire shall be single strand solid copper, minimum 14 gauge with type UF insulation which is Underwriters Laboratory approved for direct underground burial when used in a National Electrical Code Class II Circuit (30 volts AC or less) as per Articles 725 and 300. Voltage drop shall be taken into consideration.
- B. All wire shall be color coded so that the common wire shall have white insulation and the signal wires shall have red insulation.
- C. All splices shall be made with King one step Dry splices Tan or Larger.
- D. All connectors shall be UL listed, rated 600 volt, for PVC insulated wire. No wire splices shall be buried.

2.5 MANUAL VALVES

- A. Manual valves 2 1/2" and smaller shall be all brass, globe type with composition disc rated at 150 pounds W.O.G.
- B. All valves shall have wheel handles unless cross handles are called for on the plan.

2.6 VALVE BOXES – AMATEK

- A. A box shall be provided for all valves.
- B. Valve boxes shall be made of high-strength plastic suitable for turf irrigation purposes.

- C. Boxes shall be suitable in size and configuration for the operability and adjustment of the valve.
- D. Extension sections will be used as appropriate to the depth of piping.
- E. All valve box covers shall bolt down or have locking mechanisms and shall be colored black.

2.7 POP-UP SPRAY, MICRO SPRAY, ROTOR AND BUBBLER HEADS

- A. Pop-up spray, rotor and bubbler heads are specified on the drawings.
- B. Two bubbler head shall be provided per each tree at 2" caliper and larger and one bubbler head for each 1" caliper tree per locations as shown on the plans.
- C. Spray heads shall have a minimum 4" pop-up or 12" pop-up as designated on the drawings. The sprinkler body and all related parts shall be plastic cyclac or polycarbonate. They shall have a spring retraction for positive return action of the pop-up nozzle. The spring for retraction and the adjustable nozzle screw shall be made of corrosion resistant materials.
- D. All heads are to be operated and site adjusted to match precipitation rate of all heads in the zone with proper nozzle selection and arc adjustments.
- E. MICRO-SPRAYS -The nozzle shall be constructed of corrosion and UV-resistant plastic. The nozzle shall have a pop-up stem that when under water pressure, pops up an additional inch. It shall also have a stainless steel retraction spring to retract the stem when water pressure is released. The stem shall have an integral elastomeric flow bushing for maintaining a constant flow rate over the operating pressure range of 25 to 60 PSI (1.7 to 4.1 bars; 172 to 413 kPa). The nozzle shall be protected from debris by a stainless steel screen that is integral to the pop-up stem. The nozzle shall have standard female threads that are compatible with the threaded riser on Hunter spray heads as well as some other manufacturer's spray heads. The nozzle shall carry a two-year, exchange warranty (not prorated). Must be installed in Institutional spray body.

2.8 ELECTRIC CONTROLLER (PERMANENT IRRIGATION)

- A. Electric irrigation controller shall be capable of operating the number of stations as indicated on the drawings. The system is designed to operate only one section valve at a time, unless otherwise noted. The controller will be specified on the irrigation plan.
- B. Power source shall be standard 117± volt 60 Cycle AC. Output for operation of companion solenoid actuated valves shall be 24 volts 60 Cycle AC.
- C. Operation of the controller shall be full automatic, incorporating one 24 hour clock and 14 day calendar per controlled number of electric valves shown on the plan to start the sprinkling cycle any hour or hours of the day or night of any day or days over a repeating 14 day period.
- D. The controller shall be capable of repeating watering cycles as required with a maximum delay between the ending of one cycle and the beginning of the next not to exceed 2 hours. Control shall provide optional semi-automatic operation whereby the automatic cycle may be started independent of the clock and manual operation whereby any station may be operated by hand independent of all timing mechanism. The choice of automatic day or hour programming shall be available to the operator on the face of the control panel without the use of tools.
- E. The automatic controller shall be equipped with rainproof housing.
- F. Provide automatic rain/freeze shutoff with controller.

2.9 BATTERY OPERATED CONTROLLER (TEMPORARY IRRIGATION)

- A. The controller shall resist moisture intrusion and be waterproof to a depth of 12 feet. It shall operate for one full year on a 9-volt alkaline battery. The controller shall have 9 daily start times available and run times available from 0 to 240 minutes in 1-minute increments. The controller shall have a weekly 7-day schedule that allows user to choose day(s) of week for desired watering or an optional 31-day interval schedule. The controller shall be capable of manual operation and shall have a programmable rain delay of between 1 and 7 days. All programming shall be accomplished by use of selection buttons with user feed back provided by a LCD display. Program backup shall be provided by a non-volatile memory circuit that will hold the program data indefinitely. The controller shall have a rubber cover that attaches over the display area and shall be compatible with micro-switch based weather sensors.
- B. The SVC battery-operated controller shall consist of a programming module that is pre-wired to a DC latching solenoid. The programming module shall attach to the valve by a solenoid adapter. The DC latching solenoid supplied shall screw into and operate any Hunter PGV, HPV, SRV and ICV valve. The controller shall activate a single valve zone by way of the latching solenoid. The SVC shall also be available pre-attached to a PGV 1-inch, globe valve with flow-control and either Female Pipe Threads or BSP threads.
- C. The controller shall be installed in accordance with the manufacturer's published instructions. The controller shall carry a conditional two year exchange warranty. The automatic controller(s) shall be the SVC single-station series, as manufactured for Hunter Industries Incorporated, San Marcos, California.

2.10 ELECTRIC REMOTE CONTROL GLOBE VALVES

- A. Electric remote control valves shall have plastic bodies and covers and shall be globe-type diaphragm valves of normally closed design.
- B. Commissioning requires the participation of this Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents. The general commissioning requirements and coordination are detailed in the Division 1 Section 01810 referenced above. This Contractor shall be familiar with all parts of the Commissioning Section and the commissioning plan issued by the Commissioning Coordinator and shall execute all commissioning responsibilities assigned to them in the Contract Documents.
- C. A flow stem adjustment shall be included in each valve.

2.11 BACKFLOW PREVENTER

- A. A double-check assembly shall be located and sized as shown on the plans.
- B. This assembly shall be installed in a box and shall conform to the City Plumbing Codes.
- C. Use Rectangle Jumbo Plastic Amatek box.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Design Pressure: This irrigation system has been designed to operate with a minimum static inlet water pressure as indicated on the drawing. The Contractor shall take a pressure reading

prior to beginning construction. If the pressure reading is 5% less than above, the Contractor shall notify the Owner's Representative.

- B. **Contractor Responsibility:** The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in equipment usage, area dimensions or water pressure exist that might not have been considered in the engineering. Such obstructions or differences shall be brought to the attention of the Owner's Representative in writing. In the event this notification is not performed, the Contractor shall assume full responsibility for any revision necessary.
- C. **Staking:** Before installation is started, place a stake or flag where each sprinkler is to be located, in accordance with drawing. Staking shall be approved by the Owner's Representative before proceeding.
- D. **Piping Layout:** Piping layout is diagrammatic. Route piping around existing trees and root zones in such a manner as to avoid damage to plantings. Where access is restricted, bore under large existing trees to avoid damage and exposure of the root system. Do not dig within the ball of newly planted trees or shrubs.
- E. In areas where trees are present, trenches will be adjusted on site to provide a minimum clearance of four times the trunk diameter of the tree (at its base) between any tree and any trench.
- F. All material and equipment shall be delivered to the Worksite in unbroken reels, cartons or other packaging to demonstrate that such material is new and of a quality and grade in keeping with the intent of these Specifications.
- G. Refer to plan details for drip installation.
- H. Spray heads and Rotor heads cannot be located closer than 4" of any sidewalk, driveway or foundation.

3.2 EXCAVATION AND TRENCHING

- A. The Contractor shall perform all excavation to the depth indicated in these Specifications and Contract drawings. The banks of trenches shall be kept as nearly vertical as practicable. Trenches shall be wide enough to allow a minimum of 4" between parallel pipelines or electrical wiring. Where rock excavation is required, or where stones are encountered in the bottom of the trench that would create a concentrated pressure on the pipe, the rock or stones shall be removed to a depth of six (6) inches minimum below the trench depth indicated. The over depth rock excavation and all excess trench excavation shall be backfilled with loose, moist earth or sand, thoroughly tamped. Whenever wet or otherwise unstable soil that is incapable of properly supporting the pipe is encountered in the trench bottom, such shall be removed to a depth and length required, and the trench backfilled to trench bottom grade as hereinafter specified, with coarse sand, fine gravel or other suitable material.
- B. Bottom of trench grade shall be continued past ground surface deviations to avoid air pockets and low collection points in the line. The minimum cover specifications shall govern regardless of variations in ground surface profile and the occasional deeper excavation required at banks and other field conditions. Excavation shall be such that a uniform trench grade variation will occur in all cases where variations are necessary.
- C. Trench excavation shall comprise the satisfactory removal and disposition of all materials, and shall include all shoring and sheeting required to protect the excavation and to safeguard employees.

- D. During excavation, material suitable for backfilling shall be stockpiled in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and prevent slides or cave-ins. Material unsuitable for backfilling shall be wasted as directed by the Owner's Representative. When excavated material is of a rocky nature and the topsoil or any other layer of excavated material is suitable for pipe bedding and backfill in the vicinity of the pipe, such material shall be separately stockpiled for use in such bedding and pipe backfill operations, unless satisfactory imported material is used.
- E. All excavations and backfill shall be unclassified and covered in the basic bid. No additional compensation will be allowed for rock encountered.
- F. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of the excavations to their original conditions in a manner acceptable to the Owner's Representative.

3.3 PIPE INSTALLATION

- A. Sprinkler Mains: Sprinkler mains are that portion of piping from water source to electric valves. This portion of piping is subject to surges since it is a closed portion of the sprinkler system. Sprinkler mains shall be installed in a trench with a minimum of 18 inches of cover.
- B. Lateral Piping: Lateral piping is that portion of piping from electrical valve to sprinkler heads. This portion of piping is not subject to surges since it is an "open end" portion of the sprinkler system. Lateral piping shall be installed in a trench with a minimum of 12 inches of cover.
- C. Remove lumber, rubbish, and rocks from trenches. Provide firm, uniform bearing for entire length of each pipeline to prevent uneven settlement. Wedging or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe before welding, and keep piping clean during and after laying pipe.
- D. PVC pipe shall not be installed where there is water in the trench, nor shall PVC pipe be laid when temperature is 40 deg. F or below or when rain is imminent. PVC pipe will expand and contract as the temperature changes. Therefore, pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction.

3.4 PVC PIPE AND FITTING ASSEMBLY

- A. Solvent: Make solvent-welded joints following standards noted herein. Thoroughly clean pipe and fittings of dirt, dust, and moisture with an approved PVC primer before applying solvent.
- B. PVC to Metal Connection: Work metal connections first. Use a non-hardening pipe dope such as Permatex No. 2 or "Teflon" tape on threaded PVC to metal joints. Use only light wrench pressure.
- C. Threaded PVC Connections: Where required, use threaded PVC adapters into which pipe may be welded.

3.5 HYDROSTATIC TESTS

Pressure Test: After the pipe is laid, the joints completed, and the trench partially backfilled, leaving the joints exposed for examination, the newly laid piping or any valved section of main pressure line piping shall, unless otherwise specified, be subjected for four hours to a hydrostatic pressure test of normal city water pressure. Each valve shall be opened and closed during the test. Enclosed pipe, joints, fittings, and valves shall be carefully examined during the partially open trench test. Joints showing visible leakage shall be replaced or remade, as necessary. Cracked or defective pipe, joints, fittings, or valves discovered in consequence of this pressure test shall be repeated until the test results are satisfactory. All replacement and repair shall be at contractor's cost.

3.6 CONTROL WIRE INSTALLATION

- A. All control wire less than 500 feet in length shall be continuous without splices or joints from the controller to the valves. Connections to the electric valves shall be made within 18 inches of the valve using connectors specified in Paragraph 2.4 of this section, unless otherwise approved by the Owner's Representative in writing.
- B. All control wires shall be installed at least 18 inches deep. Contractor shall obtain the Owner's Representative's approval for wire routing when installed in a separate ditch. Control wires may be installed in a common ditch with piping; however, wires must be installed a minimum of 4 inches below or to one side of piping.
- C. All wire passing under existing or future paving, sidewalk, construction, etc., shall be encased in PVC Schedule 40 conduit extending at least 2 feet beyond edges of paving, sidewalks, or construction.

3.7 POP-UP SPRAY, MICRO-SPRAY, ROTORY AND BUBBLER HEADS

- A. Provide heads and nozzles as specified and install in locations as shown on the Contract Drawings.
- B. Pop-up spray and micro-spray heads shall be installed on a "flex" pipe connector as detailed. Rotary heads shall be installed on a double swing joint connected to the lateral pipe. Bubbler shall be a tree well flexible riser-bubbler head on a flex pipe. Provide wire staple to secure the bubbler to the top of the root ball. Keep heads a minimum of 4 inches from paved surfaces.
- C. Heads shall be installed with underside of flange flush with the finished grade.
- D. Contractor will be required to adjust heads as necessary after establishment of grass or other plant material.

3.8 QUICK COUPLING VALVES

- A. Quick coupling valves shall be installed at 100 foot on center along mainline with a ball valve preceding the QC for shut off.
- B. Quick coupling valves shall be installed with the underside of flange flush with the finished grade.
- C. Quick coupling valves shall be installed on a swing joint assembly as detailed on the submitted and approved shop drawings.
- D. Under the warranty, the Contractor shall return after grass is established and adjust valves and valve boxes to proper grade.

3.9 MANUAL VALVES

- A. Manual valves shall be sized and located where shown on the Contract drawings.
- B. Valve boxes shall be adjusted to be flush with finished grade.
- C. Valve boxes shall be properly supported and of sufficient construction that tractors, mowers or other equipment crossing over the boxes will not push boxes down and crush the pipe, valve, or box.

3.10 VALVE AND VALVE BOX PLACEMENT

- A. A ball valve shall precede each valve to provide shut off for repair of valves.

- B. All manual, electric, and quick coupling valves shall be in boxes as specified in Paragraph 2.6 of this section, and shall be set with a minimum of six (6) inches of space between their top surface and the bottom of the valve box. The base of the box shall be filled with pea gravel per manufacturer's installation instructions.
- C. Valves shall be fully opened and fully closed to ensure that all parts are in operating condition.
- D. Valve boxes shall be set plumb, vertical, and concentric with the valve stem.
- E. Any valve box which has moved from this required position so as to prevent the use of the operating wheel of the valve shall be reset by the Contractor at his own expense.

3.11 ELECTRIC CONTROLLER

- A. Electric controller shall be located as shown on the plans and shall be capable of operating the number of stations indicated.
- B. The system is designed to operate only one section at a time, unless otherwise noted on the plans in strict accordance with the manufacturer's published installation instructions.

3.12 ELECTRIC REMOTE CONTROL VALVES

- A. Remote control valves shall be located and sized as shown on the plans. All electrical connections shall be made when the weather is dry with connection kits as specified in Paragraph 2.4 of this section in strict accordance with manufacturer's recommended procedures. All remote control valves shall be installed in a horizontal position, in accordance to the manufacturer's published installation instructions.
- B. It shall be the responsibility of the Contractor to furnish and install the proper size wire on each of the low voltage circuits from the master control center to the various electric remote control valves.
- C. Consideration shall be given to each circuit for allowance of voltage drop and economy consistent with accepted practices of electrical installation. Under no circumstances shall the voltage of any branch circuit be reduced more than proper due to length of run exceeding the maximum allowable for the wire size used.

3.13 BACKFILL AND COMPACTION

- A. After system is operating and required tests and inspections have been made, the trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, gravel, soft shale, or other approved materials, free from large clods of earth or stone. Rock, broken concrete, or pavement, and large boulders shall not be used as backfill material. The backfill shall be thoroughly compacted and evened with the adjacent soil level.
- B. Compact trenches in areas to be planted by thoroughly flooding the backfill. Compact all other areas by flooding or hand tamping. The jetting process may be used in areas when flooding.
- C. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to a minimum of 90% density.
- D. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for compaction, then refilled and compacted with the surface restored to the required grade and left in a completed surface condition as described above.

- E. Specifically tamp backfill under heads and around the flange of heads for one foot (1') by a suitable means after trench backfill has dried from flooding to prevent heads loosening in the ground.

3.14 FINAL ADJUSTMENT

- A. After installation has been completed, make final adjustment of sprinkler system prior to Owner's Representative's final inspection.
- B. Completely flush system to remove debris from lines by removing nozzle from heads on ends of lines and turning on system.
- C. Check sprinklers for proper operation and proper alignment for direction of throw.
- D. Check each new section for operating pressure and balance to other sections by use of flow adjustment on top of each valve.
- E. Check nozzling for proper coverage. Prevailing wind conditions may indicate that arc or angle of spray should be other than as shown on drawings. In this case, change nozzles to provide correct coverage and furnish record data to Owner's Representative with each change.
- F. After system is thoroughly flushed and ready for operation, each section of sprinklers shall be adjusted to control pressure at heads. Use the following method, one section at a time:
 - 1. Remove last head on section and install a temporary riser above grade. Install tee with pressure gauge attached on top of riser and re-install head with nipple onto tee.
 - 2. Correct operating pressure at last head of each section as follows: Spray Heads - 20-25 psi; rotor heads - 30 to 40 psi (and as recommended by the manufacturer).
 - 3. After replacing head, at grade, tamp thoroughly around head.

3.15 CLEAN-UP

- A. The Worksite shall be thoroughly cleaned of all waste materials and all unused or salvaged materials, equipment, tools, etc.
- B. After completion of the work, areas disturbed shall be leveled and the Worksite shall be raked clean and left in an orderly condition.

3.16 TEMPORARY IRRIGATION FOR GRASS ESTABLISHMENT

The contractor shall provide temporary irrigation for all new turf areas. Temporary irrigation may include equipment securely staked above grade. It shall be the contractor's responsibility to provide complete, consistent temporary coverage in order to establish a viable, mowable stand of grass. Any above grade equipment shall be removed by the contractor upon acceptance of the turf by the owner.

PART 4 - METHOD OF MEASUREMENT

MEASUREMENT:

Landscape Irrigation Systems described in this section will be paid for on a lump sum basis wherein no measurement will be made.

PART 5 BASIS OF PAYMENT

PAYMENT:

- A. Landscape Irrigation Systems will be paid for at the Contract lump sum, which price will be full compensation for furnishing and installing equipment; shop drawings; providing all submittals and warranties; furnishing all labor, materials, tools, equipment; and incidentals necessary to complete the work as described in this section and related other sections of these Specifications and plans, as well as maintenance until final acceptance.

- B. Payment will be made under:

<u>Number</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02975 - 1	Landscape Irrigation System	Lump Sum

END OF SECTION 328400

SECTION 329100
LANDSCAPE SOILS

PART 1 - GENERAL

1.1 SCOPE:

- A. This Section specifies all soil materials designated as "Planting Mix", on the drawings or in the Specifications.

1.2 REFERENCES:

- A. Related Work Specified elsewhere
1. Section 329200 – Turf and Grasses
 2. Section 329300 – Plants
 3. Section 329400 – Native grass Seeding

1.3 SUMMARY

- A. Section Includes
1. Improved Top Soil
 2. Landscape Bed Soil
 3. Turf Soil

1.4 DEFINITIONS

- A. CFR: Code of Federal Regulations
- B. Clopyralid: Herbicide used to control broadleaf weed.
- C. Compost: a stable humus material created by combining organic wastes (e.g. yard trimmings, food wastes, manures) in proper ratios into piles, rows, or vessels; controlling temperature, moisture and oxygen to achieve accelerated decomposition; and adding bulking agents (e.g. wood chips), as necessary, to provide air space; allowing the finished material to fully stabilize and mature through a curing period.
- D. pH: A measure of the soil acidity or Soil alkalinity. An acid solution has a pH value less than 7, while a basic solution always has a pH larger than 7. The pH can affect the availability of nutrients in the soil.
- E. pH Balanced Compost: A combination of fully composted cotton burrs and local landscape trimmings such as grass, leaves and brush. Has a balanced pH between 5.5-6.5 and a Solvita® Compost Maturity Index Value of 7 or higher; and adds an average of 1.44 pounds of (N) Nitrogen, .22 pounds of (P) Phosphorus and .9 pounds of (K) Potassium.
- F. Picloram: Herbicide used to control woody plant material such as trees and shrubs.
- G. Professional Compost: A combination of fully composted landscape trimmings such as grass, leaves, brush, and wood chips. Has a Solvita® Compost Maturity Index Value of 7 or higher; and adds an average of 1.1 pounds of (N) Nitrogen, .13 pounds of (P) Phosphorus and .8 pounds of (K) Potassium.

- H. Solvita® Maturity Test: A diagnostic test that measures the amount of Carbon Dioxide and Ammonia present in compost.
- I. Screened Planting Soil: Very fine existing, native surface topsoil screened to keep soils open.
- J. Screened Sharp Sand: Deep sand that is excavated from a minimum of 20 feet below ground level, minimizing the chances of nut sedge and traces of other noxious weed and grass seed, screened to keep sand open.
- K. TCEQ: Texas Commission on Environmental Quality
- L. Washed Concrete Sand: Coarse sand that has been washed clean of clay, silt, and weed seed, and has been screened for consistency.

1.5 SUBMITTALS

- A. Submittal to be sent to Owner for approval 30 days before purchasing and delivery to site.
- B. Product Data: For each type of product indicated.
- C. Product Certificates: Showing soil analysis from a qualified soil-testing laboratory.
- D. Samples: To be submitted with the following conditions and items
 - 1. Representative samples of material shall be provided to the Owner from the supply source.
 - 2. 1 gallon of material to be provided in a clear, re-sealable, plastic bag.
 - 3. Product Certificate

1.6 QUALITY ASSURANCE

- A. Soil Analysis: For each soil type, furnish soil analysis and a written report by a qualified soil test laboratory.
 - 1. The soil-testing laboratory shall oversee soil sampling
 - 2. Report suitability of tested soil for plant growth.
 - a. Recommendations for nitrogen, phosphorus, and potassium and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals; if present, provide additional recommendations for corrective actions.
- B. Soil Testing Laboratory: Subject to compliance with requirements, Laboratories that may be incorporated into the work include, but are not limited to:
 - 1. Ana-Lab Corp: Arlington, Texas at (817) 917-9216
 - 2. Xenco Labs: Dallas, Texas at (214) 902-0300

1.7 DELIVERY

- A. Do not dump or store materials near structures, utilities, walkways and pavements, or on existing turf areas or plants
- B. Provide erosion-control measures to prevent erosion or displacement of materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways
- C. Accompany each delivery of material with appropriate certificates.

PART 2 – PRODUCTS

2.1 MANUFACTURES

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to:
 - 1. Soil Building Systems: Dallas, Texas at (972) 831-8181
 - 2. Living Earth Technology: Dallas, Texas at (972) 869-4332

2.2 IMPROVED TOP SOIL

- A. A pre-mixed soil created as a low-level organic planting medium to provide maximum plant growing results, without significant settling over time.
- B. pH: 7.5 – 8.7
- C. Particle Sizes: 98.5% pass through a ½" screen. 99% will pass through a ¾" screen.
- D. Color: Light to medium brown.
- E. Weight: 2000 – 2200 lbs. per cubic yard
- F. Free of: Contains no treated or used lumber, pine bark, man made chemicals, raw manure, or spent mushroom compost waste. Also there are not trace elements of the herbicides Clopyralid or Picloram.
- G. Composition Ratios: 25% Professional Compost, 50% Screened Planting Soil , and 25% Screened Sharp Sand

2.3 LANDSCAPE BED SOIL

- A. A soil that is pre-mixed in optimum proportions with soil amendments to create a medium for maximum growing results of routine plants.
- B. pH: 6.5 – 7.6
- C. Particle Sizes: 98.5% pass through a ½" screen. 99% will pass through a ¾" screen.
- D. Color: Medium brown
- E. Weight: 1900 – 2250 lbs. per cubic yard
- F. Free of: Contains no treated or used lumber, pallets, pine bark, man made chemicals, raw manure, or spent mushroom compost waste. Also there are not trace elements of the herbicides Clopyralid or Picloram.
- G. Ratios: 50% Balanced Compost, 25% Screened Planting Soil , and 25% Screened Sharp Sand

2.4 TURF SOIL

- A. A very loose textured soil created to settle minimally over time with an exceptional percolation capacity, yet will retain enough moisture to adequately supply the vegetation.
- B. pH: 7.4 – 8.3

- C. Particle Sizes: 98.5% pass through a ½" screen. 99% will pass through a ¾" screen.
- D. Color: Medium Tan.
- E. Weight: 2000 – 2200 lbs. per cubic yard
- F. Free of: Contains no treated or used lumber, pine bark, man made chemicals, raw manure, or spent mushroom compost waste.
- G. Composition Ratios: 25% pH Balanced Compost, 75% Washed Concrete Sand.

2.5 ADDITIONAL SOIL INFORMATION

- A. Meet or exceed the time and temperature standards set in TCEQ., Chapter 332, Subchapter B, Part 23.
- B. Meet federal Specifications under guidelines of 40 CFR, Part 503, Standards for Class A Bio-solids.
- C. Have a high concentration of aerobic composted organic matter as determined by ASTM D-5268 at 824°F.

PART 3 – EXECUTION

3.1 GENERAL:

- A. This part shall include the placing of all specified soil at the locations and elevations as shown.
- B. Soil mixes shall be mixed in proportions as specified for each soil mix. Thoroughly blend mix to a consistency relatively free of clods, at depth specified or as indicated on drawings.
- C. Use an extensive aerobic composting process that includes
 - 1. Scheduled turns with a minimum of 5 turns.
 - 2. Completely composted for a minimum of 6 to 12 months
- D. The work performed herewith, shall conform in every respect to the Contract Documents, the applicable local ordinances and sanitary codes, the regulations of the State Health Department, the regulations of the Occupational Safety and Hazardous Administration (OSHA) and the regulations of the Environmental Protection Agency (EPA). In the event that the contract documents do not adequately specify materials, methods of construction or workmanship of any portion of the proposed work, the Standards of the Trade shall govern.

3.2 CLEANING, REMOVAL, AND REPAIR

- A. Promptly remove materials spilled on pavement adjacent to plant areas. Repair existing lawns damaged by operations under this contract. Repair shall include finish grading and seeding, or turf, as required to match existing grade and lawn, and maintenance of repaired areas.
- B. Waste or excess material to be placed or disposed of as directed by OWNER.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT:

- A. Soil for the work shown on the plans shall be measured by the cubic yard

4.2 PAYMENT:

- A. The accepted quantities of Soil shall be paid for at the unit bid price per cubic yard.
- B. The unit bid price shall be full compensation for furnishing, hauling, and mixing soils; and for all equipment and incidentals necessary to complete work.
- C. The preceding provisions for payment shall not be interpreted to provide payment for soil used for backfill operations or other soils needed to complete construction for which provision is otherwise made in the contract.

END OF SECTION 329100

SECTION 329200
TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Seeding.
 - 2. Sodding.
- B. Related Sections:
 - 1. Planting Irrigation: Section 328400.
 - 2. Landscape Soils: Section 329100.
 - 3. Turfs and Grasses: Section 329200.

1.2 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- I. Surface Soil: Whatever soil is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Certification of grass seed.
 - 1. Certification of each seed mixture for turfgrass sod.
- C. Product certificates.

1.4 QUALITY ASSURANCE

- A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 1. Pesticide Applicator: State licensed, commercial.
- B. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory.
 - 1. The soil-testing laboratory shall oversee soil sampling.
 - 2. Report suitability of tested soil for turf growth.
 - a. State recommendations for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals; if present, provide additional recommendations for corrective action.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

1.6 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
 - 1. Seeded Turf: 60 days from date of planting completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
 - 2. Sodded Turf: 30 days from date of planting completion.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: State-certified seed of grass species as follows:
 - 1. Full Sun: Bermuda, Lovegrass.
 - 2. Sun and Partial Shade: Proportioned by weight as follows:
 - a. 25 percent Bahia Grass.
 - b. 25 Percent Fescue Grass.
 - c. 38 percent Annual Ryegrass.
 - d. 12 percent Unhulled Bermuda Grass
 - 3. Shade: Proportioned by weight as follows:
 - a. 75 percent Fescue Grass
 - b. 25 percent Unhulled Bermuda Grass.

2.2 TURFGRASS SOD

- A. Turfgrass Sod: Number 1 Quality/Premium, including limitations on thatch, weeds, diseases, nematodes, and insects, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.
- B. Turfgrass Species: Sod of grass species as follows:
 - 1. Full Sun: Bermuda.
 - 2. Sun and Partial Shade: Bermuda
 - 3. Shade: St. Augustine

2.3 ORGANIC SOIL AMENDMENTS

- A. Turf Soil: Reference Section 329100

2.4 FERTILIZERS

- A. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.5 PLANTING SOILS

- A. Turf Soil: Reference Section 329100

2.6 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Sphagnum Peat Mulch: Partially decomposed sphagnum peat moss, finely divided or of granular texture, and with a pH range of 3.4 to 4.8.

2.7 PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.1 TURF AREA PREPARATION

- A. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Apply fertilizer directly to subgrade before loosening.
 - 2. Apply 2-inch layer of Turf Soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil with existing soil.
 - 3. After blending operations are complete apply 1-inch finish layer of Turf Soil.
 - 4. Spread planting soil to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Reduce elevation of planting soil to allow for soil thickness of sod.
- B. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 - 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 - 2. Loosen surface soil to a depth of at least 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till soil to a homogeneous mixture of fine texture.
 - a. Apply fertilizer directly to surface soil before loosening.
 - 3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
 - 4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove

ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

- D. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- E. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 SEEDING

- A. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. For Bermuda Hydromulch, sow seed at a total rate of 1 lb/1000 sq. ft.
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
- E. Protect seeded areas from hot, dry weather or drying winds by applying planting soil within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

3.3 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across angle of slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.
- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.4 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and

replant bare or eroded areas and mulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

- B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain height appropriate for species without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings.
- C. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

3.5 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
 - 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches .
 - 2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

END OF SECTION 329200

SECTION 329300

PLANTS

PART 1 - GENERAL

1.1 REQUIREMENTS

- A. Contractor shall provide all items, articles, materials, operations or methods listed, mentioned, or scheduled on the Drawings, specified herein, or both, including all labor, materials, equipment - and incidentals necessary or required for their installation and completion.

1.2 SUMMARY

- A. Section Includes:
 - 1. Plants
 - 2. Planting Soils
 - 3. Tree Stabilization
 - 4. Landscape Edgings
- B. The work covered by these specifications consists of furnishing all plants and other materials, labor equipment and appliances and performing all operations in connection with the planting of trees, shrubs, lawn, ground covers, and other such material in strict accordance with these specifications and the applicable drawings.

1.3 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
 - 1. Section 328400 – Planting Irrigation
 - 2. Section 329200 – Turf and Grasses
 - 3. Section 329100 – Landscape Soils
 - 4. Section 312000 – Earthworks

1.4 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1-2004 for type and size of plant required.
- C. Containerized Stock: Plants dug with firm, natural balls of earth in which they are grown; wrapped with burlap, tied rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball. The rootball is then placed within a container lined with expanda-grow and packed with mulch around the rootball.
- D. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than sizes indicated; wrapped with burlap, tied, rigidly

supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1-2004.

- E. **Duff Layer:** The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- F. **Fabric Bag-Grown Stock:** Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.
- G. **Finish Grade:** Elevation of finished surface of planting soil.
- H. **Manufactured Topsoil:** Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- I. **Pesticide:** A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- J. **Pests:** Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- K. **Planting Area:** Areas to be planted.
- L. **Plant; Plants; Plant Material:** These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- M. **Root Flare:** Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- N. **Stem Girdling Roots:** Roots that encircle the stems (trunks) of trees below the soil surface.
- O. **Subgrade:** Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- P. **Subsoil:** All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- Q. **Surface Soil:** Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- R. **Mineral Mulch:** Landscape mulch used as top dressing that is created from stone, recycled porcelain, or recycled concrete. Products include, but are not limited to: riverbank stone, crushed pit-run rock, granite chips, marble chips, crushed brick, volcanic rock, or decomposed granite.

1.5 ABBREVIATIONS

- A. **B&B Balled and Burlapped**

- B. Gal. Gallon
- C. O.C. On Center
- D. Cal. Caliper
- E. C.T. Clear Trunk Top of Ball to First Branching

1.6 STANDARDS

A. Qualifications

1. The Landscape Contractor shall be a company specializing in landscape installation.

B. Standards

1. American Nursery and Landscape Association (ANLA) Standard: American Standard for Nursery Stock (ANSI Z60.1-2004)
2. Hortus III
3. Peat Moss; Peat, Humus; and Peat, Reed Sedge. Federal Specification: Q-P=166E
4. Fertilizers; Mixed Commercial. Federal Specification O-F-241D
5. American Joint Committee on Horticulture Nomenclature "Standardized Plant Names", latest edition.

C. Source Quality Control

1. Analysis and standards: products packaged in sealed containers shall be labeled with manufacturer's certified analysis. The composition of bulk materials shall be tested by an approved laboratory in accordance with procedures established by the Association of Official Agricultural Chemists, wherever applicable or as specified by products specifications referenced herein.
2. Provide trees, shrubs and plants of quantity, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60.1 "American Standard for Nursery Stock". Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice and free of disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions, or disfigurement. Where formal arrangements or consecutive order of trees or shrubs are shown, select stock for uniform height and spread, and label with number to assure symmetry in planting.
3. Inspection: The Owner may inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size and quality. Owner retains right to further inspect trees and shrubs for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from the project site.

D. Substitutions

1. Non-availability: If specified landscape material is not obtainable, submit to Owner proof of non-availability and proposal for use of equivalent material. Adjustments will be made at no additional cost to the Owner. If replacements are downsized, credits to the Owner will be based on comparable cost differentials customary for material and sizes involved.
2. Sizes: Plants shall be supplied at the sizes specified. Plants of larger size may be used if acceptable to Owner, and increase shall be at no additional cost to the Owner.
3. B & B or container plants may be substituted for plants designated "bare root," and container plants may be substituted for those designated "B & B".

1.7 SUBMITTALS

A. Certification

1. All landscape materials shall be from stock inspected and certified by authorized governmental authorities. The stock shall comply with governmental regulations prevailing at the supply source and the job site.

B. Samples

1. Representative samples of the following materials shall be provided to the Owner from the supply source being used.
2. Ground cover and shrubs: representative samples to be provided in lieu of tagging individual plants.
3. Trees to be tagged and approved by the Owner prior to installation.
4. Steel Edging
5. Landscape Filter Fabric
6. Tree collars
7. Bark mulch
8. Mineral Mulch

C. Submit project schedule indicating the dates of each of the following items:

1. Delivery of plant material to the site.
2. Planting.
3. Lawn seeding.
4. Substantial completion of the work.

D. Submit the following items:

1. Manufacturer's data or "cut sheet" for:
 - a. Mulch
 - b. Weed control product (herbicide fumigant)
 - c. Soil amendments product literature and delivery tickets. Submit original delivery tickets for soil amendment material.
 - d. Fertilizers

E. Submit documentation to the Landscape Architect within ten (10) days after award of Contract that all plant material is available. Contractor shall be responsible for all material listed on the plant lists. Any and all substitutions due to unavailability must be requested in writing prior to confirmation of ordering. All materials shall be subject to inspection by the Landscape Architect and Owner at any time after confirmation of ordering.

F. The Contractor shall submit specifications of any item being used on site upon the request of the Landscape Architect.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
2. Pesticide Applicator: State licensed, commercial.

B. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory.

1. The soil-testing laboratory shall oversee soil sampling.
2. Report suitability of tested soil for plant growth.

- a. State recommendations nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals; if present, provide additional recommendations for corrective action.
- C. Provide quality, size, genus, species, and variety of plants indicated, complying with applicable requirements in ANSI Z60.1.
- D. Pre-installation Conference: Conduct conference at Project site.

1.9 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. General

- 1. Store materials only in sections approved by the Owner's representative.
- 2. Packaged Materials: deliver packaged materials in unopened containers showing weight, analysis and name of manufacturer. During shipment and storage on site, protect materials from breakage, moisture, heat or other damage.

B. Plant Materials

- 1. Shipping shall be scheduled to minimize on site storage of plants. Stock shall not be shipped until the planting preparations have been completed.
- 2. Labels: shipments of plants shall be clearly identified, with legible labels stating correct name and size of plant, securely attached to individual plants, or to bundles of like variety and size.
- 3. During shipment plants shall not be bent, stacked, or bound in a manner that damages bark, breaks branches, deforms root balls or destroys natural shape.
- 4. Transport plant material in closed vehicles or in open vehicles with the entire load properly covered for protection from drying winds, heat, freezing or other exposure that may be harmful.
- 5. If delays beyond the Contractor's control occur after delivery, plants shall be kept watered and protected from sun, wind, and mechanical damage; root balls shall be covered with topsoil or mulch. Do not remove container grown stock from containers until planting time. Contractor will mass store all container growth stock if a freeze below 30°F is forecasted by the National Weather Service. Contractor will then heavily mulch all exposed edges of the mass of containers to provide protection for root balls. Owner/Landscape Architect will reject all material not so protected during such an event.
- 6. Handle plants at all times in accordance with the best horticultural practices. Lift B & B materials from the bottom of the ball only. Plants handled otherwise will be subject to rejection. Balled and burlapped plants which have cracked or broken balls are not acceptable and shall not be planted. Trees moved by winch or crane shall be thoroughly protected from chain marks, girdling, or bark slippage by approved methods. No tree, whether container, containerized, or B&B grown, shall be lifted by the trunk.

1.10 JOB CONDITIONS

A. General

- 1. Prior to beginning work the Contractor shall examine and verify the acceptability of the job site, and notify the Owner of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected or resolved in writing by the Owner.
- 2. Protection where planting occurs in close proximity to other site improvements. Adequate protection shall be given to all features prior to commencing work. Any items damaged during planting operations shall be promptly repaired to their original condition at no cost to the Owner.

B. Utilities

1. Have all underground utilities located by servicing agencies. In the vicinity of utilities, hand excavate to minimize possibility of damage to underground utilities.
- C. Water
 1. On site sources of water will be available. Contractor is responsible for coordinating the supply source with Owner's representative.
- D. Excavation
 1. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Owner before planting. Refer to Construction Documents for rock removal locations.
- E. Work Schedule
 1. Schedule upon authorization to proceed with the work. Submit two copies of the project work schedule to the Owner and Owner's representative indicating the dates of each of the following items:
 - a. Tagging of plants in nurseries
 - b. Demolition of existing lawn, shrubs, trees, etc.
 - c. Staking of plant locations on the site
 - d. Delivery of topsoil to the site
 - e. Delivery of plant material to the site
 - f. Projected completion date
 2. Notify Owner in advance of any deviations from schedule.
- F. Coordination With Other Work
 1. Proceed with and complete landscape work as rapidly as portions of the site become available, working within the seasonal limitations for each kind of landscape work required.

1.11 SPECIAL PROJECT WARRANTY

- A. Lawns
 1. Warranty grass areas through specified one (1) year maintenance period, and until final acceptance.
- B. Trees and Shrubs
 1. All trees and shrubs are to be warranted for a period of one year after date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Contractor's control.
- C. Removal and Replacement
 1. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition during warranty period. Make replacements during growing season prior to end of warranty period. Replace trees and shrubs which are in doubtful condition at end of warranty period; unless, in opinion of Owner, it is advisable to extend warranty period for a full growing season.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

A. Quality

Provide trees, shrubs, and other plants- of size, genus, species and variety shown and specified for landscape work. All plant material shall comply with recommendations and requirements of ANSI Z60.1-2004 "American Standard of Nursery Stock".

B. Plant Quantities

Landscape contractor shall be responsible for all quantities per drawings and specification by landscape architect. Plant quantities have been provided as a convenience only and shall not be considered absolute. Landscape architect shall be notified if discrepancies occur. Otherwise, the contractor is to bid their own verified quantities per landscape plan.

C. Plant Material

All planting stock shall be nursery grown (container or containerized material preferred) in accordance with good horticultural practice. Plants shall be free of disease, insects, eggs, larvae, and defects such as knot, sun-scald, injuries, abrasions, or disfigurement. They shall be sound, healthy and vigorous, of uniform growth, typical of the species and variety, well-formed, free from irregularities, with the minimum quality conforming to American Standard of Nursery Stock.

D. Size

The minimum acceptable sizes of all plants shall be measured before pruning and with branches in normal position. Unless otherwise designated on the plant list, all plant dimensions shall conform to those listed in ANSI A60.1-2004, American Standard for Nursery Stock.

1. Height is indicated with a tolerance. The smaller dimension is the minimum acceptable; the larger dimension represents the maximum permissible except with approval of Owner. The average dimension of all plants must at least equal the average of the tolerance figures shown.
2. Spread shall meet the minimum dimensions specified in all directions, and must be considered as pivoting on center of plant. Where tolerance is shown between two spread dimensions, the smaller dimension is the minimum acceptable. Spread shall average on the median of the range indicated.
3. Caliper is the trunk diameter taken at a specified distance above root collar as described in ANSI Z60.a.
4. Tree balls shall be 9" in diameter for each inch of trunk diameter.

E. Condition

Condition is the factor controlled by vitality and ability to survive and thrive.

1. Ground covers - provide plants established and well rooted in removable containers or integral peat pots and with not less than the minimum number and length of runners required by ANSI Z60.1-2004 for size shown. Refer to plant list for specific types.
2. Evergreen shrubs - provide those shown and listed on landscape plans. Provide normal quality evergreens with well balanced form complying with requirements.
3. Balled and burlapped (B & B) plants shall have a firm, natural, ball of earth sufficient diameter and depth to encompass the fibrous and feeding root systems necessary for full recovery of the plant. Balls shall be securely wrapped with burlap and bound with cord. Ball sizes shall meet the requirements of the ANSI Z60.1-2004.
4. Container grown plants shall have the roots well established in the soil mass and shall have grown in the container for at least one growing season, as approved by the owner/Landscape Architect, or sufficient time to form a well established root system within the soil mass. Containers shall be large enough to provide earth-root mass of adequate size to support the plant tops being grown. Plants, other than ground covers, over established in the container, as evidenced by pot bound root ends, will not be accepted.

F. Plant Selection

Plant materials shall be subject to final approval by the Owner and/or Owner's representative at the site before installation.

2.2 MISCELLANEOUS LANDSCAPE MATERIALS

- A. Staking and guying materials
 1. Anchor stakes for guying shall be steel T-Posts 2 X 2 X 72 inches. Refer to the landscape drawing for typical tree planting and staking.
 2. ArborTie Green by Deep Root Partners, L.P., San Francisco, CA (800) 458-7668.
 3. Flags for marking guys shall be 18-inch (50mm) sections of white one-inch (2.5 cm) diameter PVC pipe.
 4. Landscape weed barrier. Weed Arrest, Dupont landscape fabric, Soil Check or approved substitute.
- B. Mulch top dressing. Mulch to be double shredded red cedar mulch or approved equal.
- C. Mineral Mulch
 - a. Type: Decomposed Granite
 - b. Size Range: 1/8"-1/2"
 - c. Color: Uniform tan-beige color range acceptable to Landscape Architect
- D. Herbicide
Pre-emergent application of Treflan 5% granules or approved substitute.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Layout
Stake locations of individual tree and shrub locations and outline areas for multiple plantings: Owner to approve before start of planting work. Make minor adjustments as may be necessary with Owner's approval.

3.2 PREPARATION OF PLANTING BEDS AND PITS

- A. Removal
Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps, and other extraneous material harmful or toxic to plant growth.
- B. Planting Soil Mixture
Mix specified soil amendments and fertilizers with topsoil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days. All planting shall be done in prepared soil composed of the following:
Trees, Shrubs and Groundcover:
Landscape Bed Spoil Reference Section 329100
NOTE: Contractor may submit alternates to Owner if soil conditions dictate other mixture. Authorization to substitute must be in writing from Owner.
- C. Planting Beds
Soil amendments shall be mixed in place by spreading all materials evenly over the entire area to be prepared and rototilling 4-inches of prepared soil mix thoroughly until a homogenous mixture is achieved to a full depth of 6-inches. After rototilling operations are complete, place a 2-inch finish layer of Landscape Soil. Top finish bed should be 1-inch above adjacent finished grade to allow for placement and settlement of 3-inch mulch layer. Mulch to be thoroughly watered after installation to control wind displacement.

D. Planting Pits

1. Planting pits shall be round, with vertical sides and flat bottoms and sized in accordance with specified plant types.
2. If rotating augers or other mechanical diggers are used to excavate holes, the vertical sides of the pits, usually burnished to a hard smooth surface by the rotating blade, shall be scarified, fractured, or otherwise broken down to eliminate the impervious wall.
3. Loosen or scarify the bottom of all plant pits to a depth of 6 inches. Minimum diameter of pits shall be as follows: 2 x diameter of rootball; in rock 2.5 diameter of rootball.
4. Dispose of rock and subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
5. Fill excavations for trees and shrubs with water and allow to percolate out before planting.

E. Fertilizer Application

Refer to soil amendment Section 2.2 for application rates of commercial fertilizers.

3.3 EXCAVATION FOR TREES AND SHRUBS

A. Balled and Burlapped (B & B) Trees and Shrubs

Make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowance for setting of ball on a layer of compacted backfill. Allow for 3" settling of planting soil mixture.

B. Container Grown Stock

For container grown stock excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.

3.4 PLANTING TREES AND SHRUBS

A. Container Grown Stock

Set container grown stock as specified for balled and burlapped stock, remove all containers; remove bottoms of wooden boxes after partial backfilling so as not to damage root balls. Dish top of backfill to allow for mulching.

B. Containerized Stock

Set containerized grown stock as specified for balled and burlapped stock, remove all containers. Dish top of backfill to allow for mulching.

C. Balled and Burlapped (B & B) Stock

Set balled and burlapped (B & B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from top 1/3 of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

D. Mulching

1. Schedule: mulching shall take place within 48 hours after planting.
2. Bark Mulch Type: Shredded red cedar mulch or approved equal.
3. Prior to the installation of mulch and weed barrier, all areas to be covered shall be weed free and shall be treated with a pre-emergent herbicide.

4. Mulch plant beds and individual tree and shrub planting pits with bark mulch to a uniform depth of 3 inches. Mulch shall be kept out of the crowns of shrubs and off building, sidewalks, light standards, and other structures.
5. Mineral Mulch:
 - a. Apply 6 inch average thickness of mineral mulch extending over whole surface of planting area, and finish level with adjacent grades. Do not place mulch within 3 inches of trunks or stems. Refer to 2.2D for the mineral mulch specification.

E. Pruning

Thin out and shape trees and shrubs in accordance with standard horticultural practice:

General Pruning:

- a. After planting, prune the branches of deciduous stock to balance the loss of roots in such a manner as to retain the natural form of the plant type. Pruning shall be done by workmen experienced in this type of work.
- b. Trimmings shall be removed from the site.

1. Trees:

- a. Prune trees by removing all dead wood, badly-formed, interfering limbs, and sufficient other growth to insure healthy and symmetrical growth of new wood. Up to one-third of the branches may be removed. The proportion is, in all cases, subject to the approval of the Owner.
- b. In the case of multiple leaders, preserve the one which will best promote the symmetry of the tree, and remove or cut back the remainder so that they will not compete with the selected leader. Cut back surrounding top branches to conform to the leader.

2. Shrubs:

Prune shrubs by removing all dead wood and broken branches, thinning out canes and cutting back or removing unsymmetrical branches. Pruning shall result in a loose outline conforming to the general shape of the shrub type. Do not use hedge shears.

F. Staking and Guying

1. Guying and staking operation shall be completed as shown on the drawing details immediately after planting.
2. Stakes and guys shall be removed by and become the property of the Contractor at the end of the warranty period. Guy and stake all trees 6" caliper or less. Three guys shall be spaced equally about the tree. Contractor to install the ArborTie Green guy per the manufacturers recommendations.

3.5 PLANTING GROUND COVER

A. Spacing

Space plants as shown or scheduled.

B. Planting

Dig holes large enough to allow for spreading of roots and backfill with planting soil. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water. Water thoroughly after planting, taking care not to cover crowns of plants with wet soils.

C. Mulch

Mulch areas between ground cover plants to a depth of 3".

3.6 EXISTING DECIDUOUS TREE PRUNING

- A. Prune trees by removing all dead wood, badly-formed, interfering limbs, and sufficient other growth to insure healthy and symmetrical growth of new wood. Up to one-third of the branches may be removed. The proportion is, in all cases, subject to the approval of the Owner.

3.7 MECHANIZED TREE SPADE PLANTING

- A. Trees may be planted with an approved mechanized tree spade at the designated locations. Do not use tree spade to move trees larger than the maximum size allowed for a similar field-grown, balled-and-burlapped root-ball diameter according to ANSI Z60.1-2004, or larger than the manufacturer's maximum size recommendation for the tree spade being used, whichever is smaller.
- B. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.
- C. Cut exposed roots cleanly during transplanting operations.
- D. Use the same tree spade to excavate the planting hole as was used to extract and transport the tree.
- E. Plant trees as shown on Drawings, following procedures in "Tree, Shrub, and Vine Planting" Article.
- F. Where possible, orient the tree in the same direction as in its original location.

3.8 MAINTENANCE

- A. Maintenance during installation shall begin immediately after each plant is planted and shall continue as required until 1) the date of Final Acceptance, or 2) for a period of no less than 60-days, whichever results in maintenance concluding on the later calendar date.
- B. Plants shall be inspected, at least once per week, by the Contractor during the installation period, and until Final Acceptance.
 - 1. Plants shall be pruned and mulch replaced as required.
 - 2. Stakes, guys, and eroded tree saucers shall be repaired or replaced as required.
 - 3. Remove grass and weeds from planting beds, including rot growth.
 - 4. Other work such as spraying with approved insecticides, herbicides, and fungicides to control pests, shall be done to insure plant survival in a healthy growing condition.
- C. If the irrigation system is inoperative, the Contractor shall hand water all plant material from a source approved by the Owner's representative. The Owner shall be responsible for irrigation of all plants only after the entire automatic irrigation system is operative, complete and accepted.

The Contractor shall be responsible to inspect, at least weekly, all tree plantings and deep water if necessary to supplement the surface irrigation.

- D. Dead plants shall be removed and replaced immediately at the Contractor's expense during the maintenance period and during the one-year guaranty period from date of Final Acceptance.
- E. The Contractor shall be responsible for trash and litter removal from all landscaped areas prior to Final Acceptance.

3.9 CLEAN UP AND PROTECTION

A. After Planting

When planting in an area has been completed, the area shall be cleared of all debris, soil piles, and containers.

B. Repairs:

1. Repair any damage to existing landscape, utilities, paving, or other improvements as a result of work related to this section.

3.10 INSPECTION AND ACCEPTANCE

A. Inspection and Acceptance of Work

1. Notify the Owner in writing of the completion of work.
2. Within 10 days after notification of completion of work, the Owner will inspect the work and prepare a Notice of Provisional Acceptance along with a list of items that require completion or correction.
3. Issuance of the Notice of Provisional Acceptance shall constitute the start of the one (1) year maintenance period and one (1) year guarantee period for portion accepted. See sub-paragraph C.1 below for guarantee period extension.

B. Final Acceptance Inspection Of Work

The final inspection of all work or phase of work under the contract will be made by the Owner, Contractor and Owner's Representative at the completion of the sixty (60) day maintenance period described in preceding paragraph 3.8 A. If all work is approved and accepted, notice shall be issued in writing by the Owner.

C. Guarantee

1. All plants provided and planted by the Contractor shall be guaranteed for a period of one (1) year from the date of Final Acceptance. Final Acceptance will be certified after all plants are in place in accordance with Contract Documents, but having been in full leaf for a minimum of three (3) weeks. In the event the warranty period of one year would expire prior to aforementioned requirement, the warranty period shall be extended and terminate when the plants have been in full leaf for a minimum of three (3) weeks. Plants, including trees which have partially died so that shape, size or symmetry has been damaged, shall be considered subject to replacement. In such case, the opinion of the Landscape Architect shall be final.
2. Replacement plants shall be at least the same overall size of the adjacent plants at the time of replacement. All work associated with replacement shall be at no cost to the Owner.
3. Any damage, including ruts in lawn or bed areas, incurred in making replacements shall be immediately repaired by the Contractor at no additional cost.
4. The guarantee shall apply to any growing condition through which like materials that have been established could be expected to survive. The guarantee shall not apply after Final Acceptance to plants that are subjected to harm beyond the Contractor's control including injury by storms, fires, hail, or mechanical injury by humans or machines, hail, extreme hot or cold conditions, insects, theft or natural disaster.
5. At the end of the 12-month warranty period, inspection may be made by the Owner's representative upon receiving written request from Contractor at least 14 days prior to the anticipated date. Any plant deemed by the Owner's representative to be replaced shall be removed from the site. These and any plants missing due to Contractor's negligence shall be replaced as soon as

conditions permit during normal planting season, at no additional cost to the Owner.

6. Seasonal color plants will be guaranteed for a period coinciding with their normal season of growth, and plants not in a healthy, vigorous growing condition shall be replaced at the installer's expense.

END OF SECTION 329300

SECTION 329310

TRANSPLANTING TREES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. All work under this contract includes labor and equipment for the digging and relocation of existing trees, in accordance with the drawings and as herein specified

1.2 PERFORMANCE REQUIREMENTS

- A. The work performed in this section is to be performed by a contractor with a minimum of 5 years experience in transplanting large plant materials and who owns the equipment that will be used to perform such work.
- B. All work to be performed in compliance with the American Standard for Nursery Stock, Section 2.2.2, and the National Arbor Standards for moving existing plant materials.

1.3 EQUIPMENT

- A. Any tree spade used to perform this work must have the capability of digging rootballs a minimum of 40 in. in width. Machinery must be in good condition with minimum tolerance between cutting blades. All blades must be free of bends which interfere with normal operation. The tree spade must be mounted on a suitably stable machine capable of supporting the mass of all dug materials and be heavy enough to force all blades into the soil to the proper depth. Dig the pits to receive the machine-transplanted trees with machines of like size to that which is used to dig the tree to be transplanted.

1.4 CONSTRUCTION

- A. Locate all underground utilities prior to transplant operation.
- B. Center trees in the machine when dug. Observe caution to prevent damage to the tree branches and trunks while backing onto or driving away from the tree.
- C. Cut roots protruding from the digging spades flush with the rootball before planting.
- D. Trees must be planted in the new locations the same day they are removed with no holes left open overnight.
- E. Brace deciduous or coniferous plant materials in the manner commonly practiced by the nursery industry. Skid plates and bracing may be directly attached to the tree trunk by clean nails. Protect the integrity of the trunk, limbs, and rootball at all times.
- F. Backfill trees with approved topsoil. Water in the backfill after each 12 in. layer of backfill.
- G. Construct a uniform, circular soil berm, 8 in. in height and 15 in. in width, to create a water basin around each tree. Place berm beyond edge of tree pit, but no more than 6 in. from the edge of the tree pit.

- H. Add 4 in. of shredded cypress mulch within the water basin. Apply mulch within 24 hours of tree planting.
- I. Water transplanted trees immediately after planting, again within 24 hours of the initial watering and as directed. Apply water in the required quantity where shown on the plans or as directed. All watering will be paid for under Item 168 "Vegetative Watering".
- J. Apply an approved root stimulator immediately after planting tree. Follow manufacturer's recommendations for application rates.
- K. Stake trees according to the details shown in the plans.

END OF SECTION 329310

SECTION 329400
NATIVE GRASS SEEDING

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. Items required for preparing ground, providing for sowing of seeds and fertilizing, mulching with straw, watering, weed control, and other management practices required for erosion control and to obtain a grass cover.
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1.2 RELATED SECTIONS:

- A. Section 328400 – PLANTING IRRIGATION
- B. Section 329200 – TURF AND GRASSES
- C. Section 329100 – LANDSCAPE SOILS

1.3 REFERENCES:

- A. TxDOT – Texas Department of Transportation 1993 Standard Specifications for
 - 1. Construction of Highways and Streets and Bridges – ‘Blue Book’.

1.4 QUALITY ASSURANCE:

- A. Regulatory Requirements:
 - 1. Seed shall comply with U.S. Department of Agriculture rules and regulations under the Federal Seed Act.
 - 2. Bags of fertilizer shall be fully labeled complying with applicable State fertilizer laws and shall bear the name, trade name, trademark, warranty of producer, and analysis of contents.
 - 3. Planting material shall conform to Texas Department of Transportation requirements for rural area species in sandy soils as shown in this Section.
- B. Contractor's Qualifications:
 - 1. The work of this section shall be performed by a Contractor specializing in seeding and/or landscape installations.
 - 2. Guarantee all materials to be of quality and quantity injurious to plant growth.
- C. Water: For watering plantings, use water free of impurities injurious to plant growth.

1.5 SUBMITTALS:

- A. Submittal procedures: Section 013300.
- B. Certificates of Conformance or Compliance:
 - 1. Seed: Type, purity and germination rate analysis.
 - 2. Fertilizer: Manufacturer's guaranteed analysis.
 - 3. Hydromulch fiber: Manufacturer's guaranteed analysis.
 - 4. Tackifier: Manufacturer's guaranteed analysis.

1.6 PRODUCT HANDLING:

A. Seed:

1. Furnish seed in sealed standard containers.
2. Seed, which has become wet, moldy, or otherwise damaged in transit or in storage shall not be used.
3. Wet, moldy, or otherwise damaged seed will be rejected and removed from site.

B. Fertilizer: Deliver to site in sealed bags.

PART 2 - PRODUCTS

2.1 MATERIAL:

A. Seed: Refer to Planting Schedule this Section PART 3, 3.11.

B. Fertilizer: Complete fertilizer, for use with hydromulch, with minimum 50 percent nitrogen derived from organic sources. The dry weight percentage shall be 18-6-12 (N-P-K), also containing zinc and iron.

C. Wood Cellulose Fiber Mulch:

1. Specially prepared wood cellulose fiber, for use with hydraulic application of grass seed and fertilizer, processed to contain no growth or germination inhibiting factors, and dyed appropriate color to facilitate visual metering of application of materials. Green is preferable.
2. Containing not in excess of 10 percent moisture, air-dry weight basis.
3. Fibers become uniformly suspended in slurry tank mixture to form homogeneous slurry.

D. Tackifier: Provide a binding agent to hold mulch, fiber and seed in place. Tackifier shall be water-soluble or shall be of remaining in suspension during the application process.

1. Source: Hydro-Tack, N-Tack, or Terra-Tack

E. Water: Free from oil, acid, alkali, salt and other substances harmful to growth of grass.

PART 3 - EXECUTION

3.1 GENERAL

A. Accomplish seeding and mulching work and seeding and fertilizing work within the planting periods specified in paragraph entitled "Planting Schedule" of this Section.

B. If factors prevail to such an extent that satisfactory results are not likely to be obtained, stop any phase of the work and resume work when desired results are likely to be obtained.

C. Conduct seeding and mulching operations across slope.

D. Accomplish seeding and mulching on all disturbed areas and as specified on areas indicated on Drawings, on all areas disturbed during construction, all fill areas, graded areas, 20 feet on each side of new roadways, drainage channels, outfall, berms and all borrow and stockpile areas.

3.2 INSPECTION AND TEST

A. Seed:

1. Each lot of seed may be resampled and retested in compliance with test rules and regulations under Federal Seed Act at discretion of Owner.

2. Make resampling and retesting by or under supervision of Owner.
 3. If these tests reveal seed to be below specified pure live seed content, plant additional seed to compensate for deficiency at no additional cost to Owner.
 4. Seed retests: Conducted by approved laboratory.
 5. Make allowance for actual pure live seed content of specified grasses in determining actual planting rate.
- B. Fertilizers:
1. Retain fertilizer bags and upon completion of project, final check of total quantities of fertilizer used will be made against total area treated.
 2. If minimum rates of application have not been met, distribute additional quantities of these materials to make up minimum application specified.
- C. Mulch: At least five (5) days prior to commencement of mulching operations, notify Owner of sources from which mulch materials are available and quantities thereof.

3.3 SEED BED AND PREPARATION:

- A. General:
1. Perform seeding after designated areas for seeding and fertilizing have been fine graded and smoothed to finished lines and grades and typical cross-sections.
 2. Equipment necessary for proper preparation of ground surface and for handling and placing required materials shall be on hand and in good condition before work is started.
- B. Grading:
1. Maintain grades on areas to be seeded in true and even condition without ruts or tracks.
 2. Maintenance shall include any necessary repairs to previously graded area prior to planting of seed.
- C. Tillage:
1. Accomplish in such manner as to prepare seed bed.
 2. Use tractors with adequate horsepower and heavy duty tillage equipment to accomplish specified tillage operations.
 3. Place a 2-inch layer of improved Top Soil on top of existing soil and till into existing soil.
 4. Depth of tillage: 4 inches.
 5. Till areas with heavy duty disc, as necessary, followed by disking with disc harrow, and smoothing with weighted spike tooth harrow, railroad irons, or bridge timber float drag.
 6. Cultivate seed bed to state of good tilth so that soil particles on surface are small enough and lie close enough together to prevent seed from being covered too deep for optimum germination.
 7. After soil is tilled and smoothen, top dress soil with a 1-inches of improved top soil.
 8. Leave areas smooth for ease of mowing.
- D. Cleanup:
1. Prior to seeding, clear surface of stone, stumps, or other objects larger than 1 inches in thickness or diameter and of roots, brush, wire, grade stakes, and other objects that might be a hindrance to maintenance operations.
 2. Mow, rake and remove vegetation that may interfere with operations from site.

3.4 APPLICATION OF FERTILIZER:

- A. Apply fertilizer simultaneously mulch in hydraulic equipment using specified rate of application.

3.5 PLANTING SEED:

- A. Seeding:
 - 1. Rate of application: Refer to Planting Schedule in this Section.
 - 2. Uniformly plant seed to depth of ¼ inch to ½" by use of approved grain drills, native grass seed drills, Brillion Cultipacker seeder or equivalent; or by broadcasting seed and harrowing or raking lightly to cover seed.

3.6 APPLICATION OF MULCH: DO NOT MIX SEED WITH HYRDOMULCH SLURRY

- A. Area to be seeded shall first be cultipacked with Brillion Cultipacker or equivalent.
- B. Make application of wood cellulose fiber mulch slurry with hydraulic equipment and accomplish immediately upon completion of final tillage.
- C. Hydraulically spray slurry on ground to form blotter-like ground cover uniformly impregnated with grass seed which, after application, will allow absorption of moisture and allow rainfall or mechanically applied watering to percolate to underlying soil.
- D. Apply wood cellulose fiber mulch at a rate of 50 pounds per 1000 square feet in combination with fertilizer at rate of 10 pounds per 1000 square feet. Contractor to repeat fertilizer (10 pounds per 1000 square feet) in 40 to 65 days.
- E. Use hydraulic equipment application of wood fiber mulch having built-in agitation system with operating capacity sufficient to agitate, suspend, and mix homogeneously slurry containing up to 40 pounds of fiber plus combined total of 70 pounds of fertilizer solids for each 100 gallons of water.
- F. Slurry Lines: large enough to prevent stoppage.
- G. Accomplish application of mulch slurry same day as completion of final tillage.
- H. Keep mulch moist by daily application of water, if necessary, for minimum of ten days or until seeds in mulch have germinated and rooted in soil.

3.7 MAINTENANCE OF TURF:

- A. General:
 - 1. Contractor is responsible for maintaining areas during planting period and until other work under contract has been completed.
 - 2. Maintenance shall consist of protection, replanting, maintaining existing grades, and repair of erosion damage.
- B. Protection:
 - 1. Protect seeded and mulched areas against traffic or other use immediately after seeding is completed.
 - 2. Maintain protection of these areas until completion of work under contract.
- C. Replanting:
 - 1. Prepare, reseed and re-mulch areas on which less than six live, growing grass plants per square foot are present ten days after planting.
 - 2. Replant as specified for original planting.
 - 3. Perform replanting required without cost to Owner.
- D. Maintenance of Grades and Repair of Erosion Damage:
 - 1. Contractor is responsible for maintaining grades of slopes after commencement of planting operations and during maintenance period.
 - 2. Promptly repair any damage to finished surface grades.

3. Promptly repair damage in the event erosion occurs from rainfall or other causes. Correct ruts, ridges, tracts, and other surface irregularities and replant areas where required prior to acceptance.

3.8 WATERING AND MAINTENANCE:

Apply water after compaction and seeding. Apply water using portable pipe or hose lines with rotating sprinklers within 24 hours after seeding. Sprinkling may be done with water trucks and hoses in certain locations where it is impractical to use portable lines or hoses. Supervise sprinkling to prevent runoff of water. The Contractor shall furnish pumps, hoses, pipe lines, water trucks and sprinkling equipment required. Water with approved watering equipment in compliance with the schedule of 14,000 gal/acre weekly for 7 weeks, or as required to achieve grass coverage, whichever is greater. Do not water at rates exceeding 5,000 gal/acre/hr., to prevent runoff. Water/Irrigate in compliance with the following schedule:

1. Bermuda Grass: 14,000 gal./acre for 7 – 10 weeks
2. Native Grasses: 14,000 gal./acre for 12 -16 weeks

3.9 WEEDING:

- A. Keep all Permanent Lawn areas relatively free from weeds and undesirable grasses, using approved methods, materials and timing.

3.10 DISEASE AND INSECT/PEST CONTROL:

- A. Upon discovery of any disease or insect pest infestation, identify or have identified the nature or species of infestation and submit the proposed method of control for approval prior to application of control measures.

3.11 PLANTING SCHEDULE:

- A. Minimum percentage by weight of pure live seed in each lot of seed shall be as follows: seed planted at rate of 4 lbs per acre indicated under pure live seed required per acre. Note:
Percent Pure Live Seed = Percent Purity times Percent Germination.
- B. Seed shall be treated with fungicide.
- C. Weed seed shall not exceed 10 percent by weight of total of pure live seed and other material in mixture.
- D. Johnson grass, ragweed, nutgrass or other noxious seed in mixture will be caused for rejection of seed.
- E. Optimal planting schedule is to occur between February 1st through May 15th. If planting is to occur outside of optimal planting period stated above, planting period may be extended upon approval of owner.

END OF SECTION 329400

SECTION 329500
DECOMPOSED GRANITE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Materials related to Decomposed Granite Walkway Paving.

1.2 RELATED SECTIONS

- A. 312000 Earth Moving:** Refer to this section for subgrade preparation requirements and for the specification for subbase.

1.3 SUBMITTALS

- A. Product Data:** For each type of product indicated, including soils.
- B. Samples of specified materials.**

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of materials** so that installation occurs immediately following subgrade preparation.

PART 2 - PRODUCTS

2.1 DECOMPOSED GRANITE GRANULAR MATERIAL

- A. Decomposed Granite:** Naturally or artificially-graded mixture of natural or crushed granite, including 90% passing a $\frac{3}{4}$ " sieve with no more than 12% of fines passing a No. 200 sieve. Include adequate binder materials to hold granite in place following installation and compaction.
- B. Subbase:** Refer to Section 312200.

2.2 GEOTEXTILE FILTER FABRIC

- A. Composite Fabric:** Woven, needle-punched polypropylene substrate bonded to a nonwoven polypropylene fabric, 4.8 oz./sq. yd..

2.3 EDGE CONFINEMENT PRODUCTS

- A. Steel Edge Trim: 6-inch tall steel edge material of minimal 3/32-inch thickness, continuous lengths of 10-feet, minimum, with rolled safety top edge and driven pin securement system.

PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION AND DECOMPOSED GRANITE WALKWAY INSTALLATION

- A. Prepare subgrade same as indicated in Section 312000. At areas requiring fill, install select fill specified in Section 312000 and moisturize and compact as specified, including number of lifts required to reach bottom elevation of subbase material.
- B. Install subbase material 6-inches in thickness and moisturize and compact in a single lift as specified in Section 312000.
- C. Install geotextile filter fabric immediately following installation of subbase. Prior to installation of decomposed granite, install edging at limits of walkway by driving through first lift of subbase to crimp geotextile filter fabric into place. Install securement for edging. Backfill edging so that it will not be displaced laterally by decomposed granite course.
- D. Install 6-inch lift of decomposed granite top course. Maintain well-graded mix of granular material, fines and binder material to produce compactable surface. Encourage settlement into place and compact to firm condition.

3.2 MAINTENANCE

- A. Maintain new walkway by making repairs to any settled areas or materials which become displaced during construction closeout.

END OF SECTION 329500

SECTION 329550

SITE FURNITURE

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work includes: Furnish all labor, materials, shop drawings, specifications, services and equipment required.

1.2 SUBMITTALS

- A. Five (5) copies of manufacturer's product cut sheets must be submitted to the Landscape Architect seven (7) days prior to ordering. Cut sheets to include product name, model number, dimensions, colors, and materials. Contractor shall not order site furniture until Contractor receives written approval of products submitted.

PART 2 - PRODUCTS

2.1 BENCHES

- A. Urbanscape (1-866-903-7143)
 - 1. Model: Woodridge: WO11195 - 6' Bench
 - 2. Mounting System: In-ground and/or surface mounted
 - 3. Seat Color: Black
 - 4. Leg Color: Black

2.3 LITTER RECEPTACLE

- B. Urbanscape (1-866-903-7143)
 - 1. Model: Woodridge: WO3F32P – 32 Gallon Receptacle
 - 2. Mounting System: In-ground and/or surface mounted
 - 3. Color: Black

PART 3 - EXECUTION

3.1 INSPECTION

- A. Furnishings shall be inspected by the Owner/Landscape Architect for condition relating to damage in shipping or construction defects.

3.2 INSTALLATION

- A. Per Manufacturer's Specifications (unless otherwise noted).

3.3 CLEAN UP

- A. Clean up all debris caused by the work of this section, keeping the premises clean and neat at all times.

END OF SECTION 329550

ADDENDUM

To: Bidders of Lancaster Amphitheater and Trail Improvements **Date:** December 21, 2010
From: David Buchanan **AVO:** 27305
Email: dbuchanan@halff.com **Project:** Lancaster Amphitheater and Trail Improvements

Subject: Addendum No. 1

The following is a list of changes made to the plans and specifications. The changes are outlined by item number, as well as plan sheet number. Acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject the Proposer to disqualification. This addenda consist of three (03) written pages and the attached addendum Drawings and Specification sections enumerated.

Drawings:

- ITEM 1. Refer to Sheet C1.01
 - a. The originally issued sheet is replaced by the attached updated **C1.01**.
- ITEM 2. Refer to Sheet L1.00
 - a. The originally issued sheet is replaced by the attached updated **L1.00**.
- ITEM 3. Refer to Sheet L1.01
 - a. The originally issued sheet is replaced by the attached updated **L1.01**.
 - b.
- ITEM 4. Refer to Sheet L1.02
 - c. The originally issued sheet is replaced by the attached updated **L1.02**.
- ITEM 5. Refer to Sheet L2.03
 - a. The originally issued sheet is replaced by the attached updated **L2.03**.
- ITEM 6. Refer to Sheet L3.01
 - a. The originally issued sheet is replaced by the attached updated **L3.01**.
- ITEM 7. Refer to Sheet L3.02
 - a. The originally issued sheet is replaced by the attached updated **L3.02**.
- ITEM 8. Refer to Sheet L3.03
 - a. The originally issued sheet is replaced by the attached updated **L3.03**.
- ITEM 9. Refer to Sheet L4.01
 - a. The originally issued sheet is replaced by the attached updated **L4.01**.
- ITEM 10. Refer to Sheet L5.01
 - a. The originally issued sheet is replaced by the attached updated **L5.01**.



1201 North Bowser Road
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(214) 346-6200
Fax (214) 739-0095

ITEM 11. Refer to Sheet L5.02

- a. The originally issued sheet is replaced by the attached updated **L5.02**.

Specifications:

ITEM 12. Specification Section – TABLE OF CONTENTS

- a. Refer to page 1. Deleted section 012100 ALLOWANCES.

ITEM 13. Specification Section – PROPOSAL FORM

- a. Refer to page 1. Updated Bid Opening Date and Time shall read January 11, 2011.
- b. Refer to page 2. Deleted CLEARING AND GRUBBING Item.
- c. Refer to page 4. Updated EA quantities for SEATING AREA CONCRETE PAD shall read 10.
- d. Refer to page 5. Updated SF quantities for DECOMPOSED GRANITE shall read 13,790.
- e. Refer to page 7. The additional line items have been added:
 - "25 6' BENCH, AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE FOR THE SUM OF _____ DOLLARS AND _____ CENTS PER EACH, BUDGETED QUANTITY OF 10 EACH
 - 26 TRASH RECEPTACLE, AS SHOWN AND SPECIFIED, COMPLETE AND IN PLACE FOR THE SUM OF _____ DOLLARS AND _____ CENTS PER EACH, BUDGETED QUANTITY OF 10 EACH"
- f. Refer to page 9. Updated SF quantities for BERMUDA HYDROMULCH shall read 86,850.
- g. Refer to page 10. Deleted BERMUDA GRASS SOD Item.
- h. Refer to page 12. Updated SF quantities for 4" THICK BROOM FINISH CONCRETE UPGRADE FROM DECOMPOSED GRANITE shall read 12,980.
- i. Refer to page 13. Deleted TOTAL ALLOWANCES COSTS Item.
- j. Updated all ITEM NO. to reflect PROPOSAL FORM updates and additions.

ITEM 14. Specification Section – ALLOWANCES

- a. Deleted section 012100 ALLOWANCES.

ITEM 15. Specification Section – ALTERNATES

- a. Revised Section 3.1 SCHEDULE OF ADD ALTERNATES shall read:

"A. Alternate No. 1: Add installation of concrete at the southern trail extension in lieu of decomposed granite.

- 1. Base Bid: 1,623 linear feet x 8 feet wide decomposed granite trail extension.
- 2. Alternate: Upgrade to 1,623 linear feet x 8 feet wide concrete trail extension.
- 3. Refer to Drawings for configuration of trail layout."

- b. Deleted Alternate No. 2: Add installation of (5) Five steel Benches with concrete base.



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- c. Deleted Alternate No. 3: Add installation of (5) Five steel Trash Receptacles with concrete base.

Attachments: Drawings and Specifications with changes/additions or deletion.

Copies: File

**City of Lancaster Community Park Amphitheater
Specifications
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011000	SUMMARY	3
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DIVISION 32 - EXTERIOR IMPROVEMENTS		
321313	PORTLAND CEMENT CONCRETE PAVING	2
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321316	DECORATIVE CONCRETE PAVING.....	10
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329200	TURF AND GRASSES.....	6
329300	PLANTS	13
329310	TRANSPLANTING TREES	2

329400	NATIVE GRASS SEEDING	5
329500	DECOMPOSED GRANITE	2
329550	SITE FURNITURE	1

¹ Addendum No. 1, December 21, 2010

PROPOSAL FORM

Bid Opening Date and Time: 2:00 pm, Tuesday, January 11th, 2011¹
To: City of Lancaster, County of Dallas, State of Texas
For: Lancaster Community Park Amphitheater
Project No. 27305

Pursuant to the foregoing "Notice for Bidders", the undersigned bidder, having thoroughly examined the contract documents, including plans, specifications, the site of the project, with an understanding of the amount of work to be done and the prevailing conditions, hereby proposes to do all the work, furnish all labor, equipment, and material (except as specified to be furnished by the City), that is necessary to fully complete all of the work as provided in the plans and contract documents and subject to the inspection and approval of the City of Lancaster, Texas, and binds himself upon acceptance of this Proposal to execute a contract and furnish an approved Performance Bond, Payment Bond, Maintenance Bond, and such other bonds, if any, as may be required by the contract documents for the performing and completing of said work. Contractor proposes to do the work within the time stated and for the following sums:

ITEM NO.	DESCRIPTION WITH BID PRICE WRITTEN IN WORDS	UNIT	BUDGETED QUANTITY	UNIT COST	EXTENDED COST
BASE BID ITEMS					

SITE PLAN

1	MOBILIZATION FOR THE SUM OF	LS	1		
	_____ DOLLARS				
	AND _____ CENTS				
	PER LUMP SUM			\$ _____	\$ _____
2	SWPPP DESIGN AND MAINTENANCE, COMPLETE IN PLACE FOR THE SUM OF	LS	1		
	_____ DOLLARS				
	AND _____ CENTS				
	PER LUMP SUM			\$ _____	\$ _____

SECTION 012300

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ADD ALTERNATES

- A. Alternate No. 1: Add installation of concrete at the southern trail extension in lieu decomposed granite.

1. Base Bid: 1,623 linear feet x 8 feet wide decomposed granite trail extension.
2. Alternate: Upgrade to 1,623 linear feet x 8 feet wide concrete trail extension.
3. Refer to Drawings for configuration of trail layout.¹

END OF SECTION 012300

¹ Addendum No. 1, December 21, 2010



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Fax (214) 739-0095

ADDENDUM

To:	Bidders of Lancaster Amphitheater and Trail Improvements	Date:	January 6, 2011
From:	David Buchanan	AVO:	27305
Email:	dbuchanan@halff.com	Project:	Lancaster Amphitheater and Trail Improvements

Subject: Addendum No. 2

The following is a list of changes made to the plans and specifications. The changes are outlined by item number, as well as plan sheet number. Acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject the Proposer to disqualification. This addenda consist of one (01) written page only.

Drawings:

ITEM 1. Refer to Sheet E1.01

- a. Relocate the service main disconnect to the electrical equipment enclosure.
- b. Provide a 100/3 circuit breaker in Panel A to serve the Company Switch and change the Panel A main breaker to 125A.
- c. Reduce the feeder to Panel B and to the Company Switch to 4#2, #6G, 1 1/2"C.

Copies: File

Bid Request Number	2011-13 Addendum 2	Organization	Lancaster Purchasing
Title	Lancaster Community Park Amphitheater	Bid Creator	Dawn Berry Purchasing Agent
Description	Although we are legally required to accept pay	Email	dberry@lancaster-tx.com
Bid Type	ITB	Phone	(972) 218-1329
Issue Date	11/8/2010 8:00:01 AM Central	Fax	(972) 218-3621
Close Date	1/11/2011 2:00:00 PM Central		

Responding Suppliers

Name	City	State	Response Submitted	Lines Responded	Response Total
Northstar Construction, Inc.	Fort Worth	TX	1/11/2011 1:48:03 PM CST	39	\$384,700.00
Corbet Group, Inc.	Dallas	TX	1/11/2011 1:21:36 PM CST	39	\$426,010.54
JDC CONSTRUCTION COMP	wylie	TX	1/11/2011 1:29:21 PM CST	39	\$450,205.00
SCM Construction Inc	DeSoto	TX	1/11/2011 1:53:48 PM CST	39	\$451,285.37
MDI Inc. General Contractors	Coppell	TX	1/11/2011 1:47:02 PM CST	39	\$491,427.00
Green Scaping	Ft. Worth	TX	1/11/2011 1:47:21 PM CST	39	\$504,784.70
Bluebay Construction	Houston	TX	1/11/2011 1:00:00 PM CST	39	\$505,514.10
ENCINO LANDSCAPE, INC	CLEVELAND	TX	1/11/2011 10:10:54 AM CST	39	\$511,932.00
3i Construction	Dallas	TX	1/11/2011 1:59:51 PM CST	39	\$541,167.61

REVISED

Lancaster Community Park Amphitheater

Seq. #	Description	Quantity	Units	Unit Price	Extended Price
1	Mobilization	1	LS	\$ 23,000.00	\$ 23,000.00
2	SWPPP Design & Maintenance	1	LS	\$ 3,000.00	\$ 3,000.00
3	Temporary Sign	1	EA	\$ 500.00	\$ 500.00
4	Site Demolition	1	LS	\$ 15,000.00	\$ 15,000.00
5	Erosion Control	1000	LF	\$ 2.00	\$ 2,000.00
6	Tree Transplanting	20	EA	\$ 340.00	\$ 6,800.00
7	Site Grading	1	LS	\$ 18,000.00	\$ 18,000.00
8	Concrete Flume	0	EA	\$ -	\$ -
9	8" Thick Rock Riprap	0	SF	\$ -	\$ -
10	4" Thick Light Broom Finish Conc.	17680	SF	\$ 3.20	\$ 56,576.00
11	4" Thick Rock Salt Finish Conc. Stage	1970	SF	\$ 4.50	\$ 8,865.00
12	Seating Area Concrete Pad	10	EA	\$ 200.00	\$ 2,000.00
13	8" Concrete Mow Strip	191	LF	\$ 10.00	\$ 1,910.00
14	Accessibility Ramp	0	EA	\$ -	\$ -
15	Decomposed Granite	810	SF	\$ 2.70	\$ 2,187.00
16	Sunports Pavilion Footings	4	EA	\$ 1,000.00	\$ 4,000.00
17	Concrete Retaining Wall 'A'	25	LF	\$ 190.00	\$ 4,750.00
18	Concrete Retaining Wall 'B'	8	LF	\$ 135.00	\$ 1,080.00
19	Concrete Terrace Walls	273	LF	\$ 60.00	\$ 16,380.00
20	Stage Equipment Enclosure	1	EA	\$ 3,500.00	\$ 3,500.00
21	Transformer TA Enclosure	1	LS	\$ 3,200.00	\$ 3,200.00
22	Light Pole Foundations	6	EA	\$ 650.00	\$ 3,900.00
23	Retaining Wall Signage	1	LS	\$ 2,000.00	\$ 2,000.00
24	Grant Program Plaque	1	EA	\$ 2,000.00	\$ 2,000.00
25	6' Bench	6	EA	\$ 1,250.00	\$ 7,500.00
26	Trash Receptacle	6	EA	\$ 850.00	\$ 5,100.00
Site Plan Total					\$ 193,248.00

Lighting Plan

27	Lighting & Elect Sys.(except stage, etc..)	1	LS	\$ 21,000.00	\$ 21,000.00
28	Permanent Stage Lighting	1	LS	\$ 15,000.00	\$ 15,000.00
29	Vender Receptacles	1	LS	\$ 10,000.00	\$ 10,000.00
30	Pedestrian Trail Lighting	1	LS	\$ 26,000.00	\$ 26,000.00
31	Company Switch for Stage Power	1	LS	\$ 15,000.00	\$ 15,000.00
Lighting Plan Total					\$ 87,000.00

Landscaping Plan

32	Bermuda Mulch	43425	SF	\$ 0.08	\$ 3,474.00
33	Buffalo Hydromulch	20820	SF	\$ 0.10	\$ 2,082.00
34	1 Gal. Gulf Muhly Grass	426	EA	\$ 9.50	\$ 4,047.00
35	3" Cal. Shumard Red Oak	35	EA	\$ 300.00	\$ 10,500.00
Landscape Plan Total					\$ 20,103.00

Irrigation Total

36	Irrigation System	1	LS	\$ 25,000.00	\$ 25,000.00
Irrigation Plan Total					\$ 25,000.00

Total Cost-Base Bid-Site Plan					\$ 193,248.00
Total Cost-Base Bid-Lighting Plan					\$ 87,000.00
Total Cost-Base Bid-Landscape Plan					\$ 20,103.00
Total Cost-Base Bid-Irrigation Plan					\$ 25,000.00
Total Base Bid Cost					\$ 325,351.00

★ North Trail Quantity equal to Revised South Trail (From South of Library to Plaza)(833 lf)

ORIGINAL

Lancaster Community Park Amphitheater

Seq. #	Description	Quantity	Units	Unit Price	Extended Price
1	Mobilization	1	LS	\$ 23,000.00	\$ 23,000.00
2	SWPPP Design & Maintenance	1	LS	\$ 3,000.00	\$ 3,000.00
3	Temporary Sign	1	EA	\$ 500.00	\$ 500.00
4	Site Demolition	1	LS	\$ 15,000.00	\$ 15,000.00
5	Erosion Control	1000	LF	\$ 2.00	\$ 2,000.00
6	Tree Transplanting	20	EA	\$ 340.00	\$ 6,800.00
7	Site Grading	1	LS	\$ 18,000.00	\$ 18,000.00
8	Concrete Flume	1	EA	\$ 1,300.00	\$ 1,300.00
9	8" Thick Rock Riprap	36	SF	\$ 8.00	\$ 288.00
10	4" Thick Light Broom Finish Conc.	17680	SF	\$ 3.20	\$ 56,576.00
11	4" Thick Rock Salt Finish Conc. Stage	1970	SF	\$ 4.50	\$ 8,865.00
12	Seating Area Concrete Pad	10	EA	\$ 200.00	\$ 2,000.00
13	8" Concrete Mow Strip	191	LF	\$ 10.00	\$ 1,910.00
14	Accessibility Ramp	1	EA	\$ 1,500.00	\$ 1,500.00
15	Decomposed Granite	13790	SF	\$ 2.70	\$ 37,233.00
16	Sunports Pavilion Footings	4	EA	\$ 1,000.00	\$ 4,000.00
17	Concrete Retaining Wall 'A'	25	LF	\$ 190.00	\$ 4,750.00
18	Concrete Retaining Wall 'B'	8	LF	\$ 135.00	\$ 1,080.00
19	Concrete Terrace Walls	273	LF	\$ 60.00	\$ 16,380.00
20	Stage Equipment Enclosure	1	EA	\$ 3,500.00	\$ 3,500.00
21	Transformer TA Enclosure	1	LS	\$ 3,200.00	\$ 3,200.00
22	Light Pole Foundations	6	EA	\$ 650.00	\$ 3,900.00
23	Retaining Wall Signage	1	LS	\$ 2,000.00	\$ 2,000.00
24	Grant Program Plaque	1	EA	\$ 2,000.00	\$ 2,000.00
25	6' Bench	10	EA	\$ 1,250.00	\$ 12,500.00
26	Trash Receptacle	10	EA	\$ 850.00	\$ 8,500.00
Site Plan Total					\$ 239,782.00
Lighting Plan					
27	Lighting & Elect Sys,(except stage, etc.)	1	LS	\$ 21,000.00	\$ 21,000.00
28	Permanent Stage Lighting	1	LS	\$ 15,000.00	\$ 15,000.00
29	Vender Receptacles	1	LS	\$ 10,000.00	\$ 10,000.00
30	Pedestrian Trail Lighting	1	LS	\$ 26,000.00	\$ 26,000.00
31	Company Switch for Stage Power	1	LS	\$ 15,000.00	\$ 15,000.00
Lighting Plan Total					\$ 87,000.00
Landscaping Plan					
32	Bermuda Mulch	86850	SF	\$ 0.08	\$ 6,948.00
33	Buffalo Hydromulch	20820	SF	\$ 0.10	\$ 2,082.00
34	1 Gal. Gulf Muhly Grass	426	EA	\$ 9.50	\$ 4,047.00
35	3" Cal. Shumard Red Oak	35	EA	\$ 400.00	\$ 14,000.00
Landscape Plan Total					\$ 27,077.00
Irrigation Total					
36	Irrigation System	1	LS	\$ 25,000.00	\$ 25,000.00
Irrigation Plan Total					\$ 25,000.00
Alternate Bid Items					
1A	4" Thick Broom Upgrade from Decomp.	12980	SF	\$ 0.45	\$ 5,841.00
Alt 1 Total					\$ 5,841.00
Total Cost-Base Bid-Site Plan					\$ 239,782.00
Total Cost-Base Bid-Lighting Plan					\$ 87,000.00
Total Cost-Base Bid-Landscape Plan					\$ 27,077.00
Total Cost-Base Bid-Irrigation Plan					\$ 25,000.00
Total Base Bid Cost					\$ 378,859.00
Total Alternates Cost					\$ 5,841.00
Total Project Cost					\$ 384,700.00