



CARROLLTON
TEXAS

CITY OF CARROLLTON

GENERAL CONDITIONS

AND

SPECIFICATIONS

FOR

**REQUEST FOR PROPOSAL FOR
THOMAS BASEBALL FIELDS RENOVATIONS
AND IMPROVEMENTS
RFP # 16-019**

**CLOSING DATE
THURSDAY, APRIL 14, 2016
1:30 PM**

**PRE-BID MEETING
THOMAS BASEBALL COMPLEX
1950 PERRY ROAD
CARROLLTON, TEXAS 75006
TUESDAY, APRIL 5, 2016 @ 9:00AM**

NOTICE TO BIDDERS

Sealed RFP's will be received by the city of Carrollton, Carrollton, Texas, at the office of Vince Priolo, Purchasing Manager, City Hall Building, 1945 E. Jackson Road, Carrollton, Texas 75006-1790 until the hour 1:30 PM on the 14th day of April, 2016 at which time bids duly delivered and submitted will be considered for supplying the following:

RFP FOR THOMAS BASEBALL FIELDS RENOVATIONS AND IMPROVEMENTS RFP # 16-019

The terms "bid" and "proposal" used in this document have the same meaning.

The submitted bids will be opened on at 1:30 PM on the due date above at the place designated for the submission of bids.

Bidders shall have performed similar scope of work within the past calendar year. Bidders are expected to inspect the site of the work and to inform themselves regarding local conditions and conditions under which the work is to be done. All bidders must comply with the rules and regulations for the Americans with Disabilities Act of 1990.

Instructions to Bidders, Proposal Forms, Specifications, Plans and Contract Documents may be examined without charge at the office of the Purchasing Manager, City Hall, 1945 E. Jackson Road, Carrollton, Texas 75006-1790. This bid is also on the City's website at <http://www.cityofcarrollton.com/index.aspx?page=424>.

Any bid received after stated closing time will be returned unopened. If bids are sent by mail to the Purchasing Manager, the bidder shall be responsible for actual delivery of the bid to the Purchasing Manager before the advertised date and hour for opening of bids. If mail is delayed by the postal service, courier service, an ISP – internet service provider or in the internal mail system of the city of Carrollton beyond the date and hour set for the bid opening, bids thus delayed will not be considered and will be returned unopened.

Information concerning the bid specifications may be obtained by contacting Kim Bybee, Carrollton Parks Athletics Manager, at kim.bybee@cityofcarrollton.com. All emails to Kim should also copy Vince Priolo.

Information on the bid process/procedures may be obtained from Vince C. Priolo, Purchasing Manager at (972) 466-3115 or vince.priolo@cityofcarrollton.com.

Until the final award by the city of Carrollton, said City reserves the right to reject any and/or all bids, to waive technicalities, to re-advertise, to proceed otherwise when the best interests of said City will be realized hereby. Bids will be submitted sealed and plainly marked with the date and time of opening.

The city of Carrollton Municipal Building is wheelchair accessible. For accommodations or sign interpretive services needed for bid openings, please contact the Purchasing Office 48 hours in advance at (972) 466-3115.

City of Carrollton, Texas



Vince C. Priolo, Purchasing Manager

Publication Dates: March 27, 2016
April 3, 2016

Pre-Bid Meeting: THOMAS BASEBALL COMPLEX
1950 PERRY ROAD
CARROLLTON, TEXAS 75006
TUESDAY, APRIL 5, 2016 @ 9:00AM

GENERAL CONDITIONS

ADDENDA

It is the responsibility of the vendor to check for addenda. Addenda will be posted to the City's website: www.cityofcarrollton.com/purchasing

ANNUAL CONTRACT 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. The term of this contract will be for 1 year with 2 additional 1 year extensions.

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 Manager. Such consent shall not relieve the assignor of liability in event of default by their assignee.

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 method shown in the Proposal. 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

Bids may be submitted in person or by mail.

- Submit bids via mail to PO Box 110535, Carrollton, TX 75011-0535
- To submit a bid via mail, all documents must be returned and an original signature provided on the proposal to bidders sheet.
- The City is not responsible for mail service. See page 2, paragraph 2 of the Notice to Bidders.

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.*

COMPLETING INFORMATION

Bidder must fill in all information asked for in the blanks provided under each item. Failure to comply may result in rejection of the Bid at the City's option.

CONTRACT CLAUSE

All bidders understand and agree that the vendor's bid response will become a legally binding contract upon acceptance in writing by the City. This contract may be superseded only if replaced with a more extensive contract that is agreed to by both parties.

DEFAULT

In case of default of the successful bidder, the city of Carrollton may procure the articles from other sources and hold the bidder responsible for any excess cost occasioned thereby.

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, materialmen, 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.

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 Manager 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 Carrollton 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.

PROVISIONAL CLAUSES

The city of Carrollton 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 Manager 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.

PROPOSAL OF BIDDERS

The following bid is made for furnishing the materials/services for the city of Carrollton, Texas.

The undersigned declares that the amount and nature of the materials/services to be furnished is understood and that the nature of this bid is in strict accordance with the conditions set forth and is a part of this bid, and that there will at no time be a misunderstanding as to the intent of the specifications or conditions to be overcome or pleaded after the bids are opened.

The undersigned, in submitting this bid, 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.

The undersigned affirms that they are duly authorized to execute this contract that this company, corporation, firm, partnership or individual and has not prepared this bid in collusion with any other bidder, and that the contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned 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 bid.

**RFP FOR THOMAS BASEBALL FIELDS RENOVATIONS AND IMPROVEMENTS
RFP# 16-019**

Federal ID Number: _____

SIGNATURE

PLEASE INCLUDE W-9

DATE

PRINTED NAME

TITLE

COMPANY NAME

CONTACT PERSON (Must have knowledge of Bid)

BILLING ADDRESS

STREET

CITY

STATE

ZIP

MAILING ADDRESS

STREET

CITY

STATE

ZIP

PHONE NUMBER (metro/toll free)

FAX NUMBER

E-MAIL ADDRESS

HUB VENDORS: HUB vendors (Historically Underutilized Business) are vendors who’s company is owned by either a minority or woman. If you are classified as a HUB vendor and have certification to prove this, please respond below and attach a copy of your certification. If you would like to read the Texas bid statute which references HUB vendors, please follow this link <http://www.statutes.legis.state.tx.us/SOTWDocs/LG/htm/LG.252.htm>.

HUB Vendor Status: YES _____ (attach certification) NO _____

NO BID: If response is not received in the form of a “Bid” or “No Bid” bidder will be removed from bid list. Please give a specific reason as to why you are unable to bid, i.e.: we do not sell the required product/service. **No bids may be faxed to: 972-466-3175**

SPECIAL CONDITIONS

1. An Insurance Affidavit is included in the bid package and should be included with your bid response. This form is to be filled out by your insurance company and simply states that you will be able to comply with the insurance requirements if chosen for this bid award.
2. A 5% Bid Bond should be submitted with your proposal, or in lieu, a cashiers check. Payment and Maintenance bonds will be required of the company chosen to do this work, so please factor this cost into your proposal. The city bond forms are included in this package.
3. Please submit a copy of the signed Contract Agreement with your proposal.
4. The RFP will be evaluated based on project completion (10%) price and meeting specifications (50%) and the experience/references of the company being the other 40%.
5. Contractor shall provide all labor, supervision, materials, and equipment, necessary to complete the project.
6. Project estimate is \$425,000 but this is subject to the bids received and revision by the City of Carrollton.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURED	INSURERS AFFORDING COVERAGE	NAIC #
	INSURER A:	
	INSURER B:	
	INSURER C:	
	INSURER D:	

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

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY HOLDER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS (Minimum)	
		GENERAL LIABILITY				EACH OCCURANCE	\$ 250,000
		<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	\$
		<input type="checkbox"/> CLAMES MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person)	\$
		<input type="checkbox"/> _____				PERSONAL & ADV INJURY	\$ 100,000
		<input type="checkbox"/> _____				GENERAL AGGREGATE	\$ 500,000
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS0COMP/OP AGG	\$
		<input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC					
		AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (Ea accident)	\$ 500,000
		<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$ 250,000
		<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$ 500,000
		<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	\$ 100,000
		<input type="checkbox"/> HIRED AUTOS					
		<input type="checkbox"/> NON-OWNED AUTOS					
		<input type="checkbox"/> _____					
		GARAGE LIABILITY				AUTO ONLY-EA ACCIDENT	\$
		<input type="checkbox"/> ANY AUTO				OTHER THAN EA ACC	\$
		<input type="checkbox"/> _____				AUTO ONLY: AGG	\$
		EXCESS/UMBRELLA LIABILITY				EACH OCCURRENCE	\$
		<input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE	\$
		<input type="checkbox"/> _____					\$
		<input type="checkbox"/> DEDUCTIBLE					\$
		<input type="checkbox"/> RETENTION					\$
		WORKERS COMPENSATION AND EMPLOYER' LIABILITY				<input checked="" type="checkbox"/> WC STATUTORY LIMITS	\$
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?				<input type="checkbox"/> OTHER	
		If yes, describe under SPECIAL PROVISIONS below				E.L. EACH ACCIDENT	\$ 500,000
						E.L..DIESEASE-EA EMPLOYEE	\$ 500,000
						E.L..DIEASE - POLICY LIMIT	\$ 500,000
						AGGREGATE	

City of Carrollton Purchasing Department P.O. Box 110535 Carrollton, TX 75011-0535	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
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CITY OF CARROLLTON, TEXAS

CONTRACT AGREEMENT

STATE OF TEXAS)

COUNTY OF DALLAS)

THIS AGREEMENT, made and entered into this _____ day of _____ A.D., 2016, by and between the City of Carrollton, a municipal corporation, located in the County of Dallas and State of Texas, acting through Beth Bormann, its Assistant City Manager, thereunto authorized so to do hereafter termed OWNER, and _____, County of _____, and State of _____ hereinafter termed CONTRACTOR.

WITNESSETH, that for and in consideration of the payments and agreements hereinafter mentioned, to be made and performed by the OWNER, and under the conditions expressed in the bond bearing even date herewith, the said CONTRACTOR, hereby agrees with the OWNER to commence and complete the construction of certain improvements described as follows:

**RFP# 16-019 FOR THOMAS BASEBALL FIELDS RENOVATIONS
AND IMPROVEMENTS**

and all extra work in connection therewith, under the terms as stated in the General Conditions of the Agreement and at CONTRACTOR'S own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the Proposal attached hereto, and in accordance with the Notice to Contractors, General and Special Conditions of Agreement, Plans and other drawings and printed or written explanatory matter thereof, and the Specifications and addenda thereof, together with the CONTRACTOR'S written proposal, the General Conditions of the Agreement, and the Performance and Payment Bonds hereto attached; all of which are made a part hereof and collectively evidence and constitute the entire contract.

The CONTRACTOR hereby agrees to commence work within ten (10) days after the date of written notice to do so shall have been given him, and to be 100% complete within _____ () calendar days after the date of the written Notice to Proceed work, subject to such extensions of time as are provided by the General and Special Conditions.

The OWNER agrees to pay the CONTRACTOR in current funds the price or prices shown in the proposal, which forms a part of this contract, such payments to be subject to the General and Special Conditions of the Contract.

IN WITNESS WHEREOF, the parties to these presents have executed this Agreement in the year and day above written.

The City of Carrollton

Owner

Contractor

By: _____
Erin Rinehart, Asst. City Manager

By: _____
(Print or Type Name)

Signature: _____

Title: _____

ATTEST:

ATTEST:

City Secretary

Date: _____
By Authority of Council Action Dated

Signature: _____

Approved as to Content:

Scott Whitaker, Parks Director

CONTRACTOR'S BID BOND

KNOW ALL MEN BY THESE PRESENTS,

That we , _____ Principal, and _____
_____, a corporation duly organized under the laws of the State of _____, and authorized
to issue surety bonds in the State of Texas, Surety herein, are held and firmly bound unto the City
of Carrollton, owner, in the sum of _____ 5% of amount bid _____ dollars
(\$_____) 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

**RFP# 16-019 FOR THOMAS BASEBALL FIELDS RENOVATIONS AND
IMPROVEMENTS**

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 _____ day of _____, 2016.

Principal

By: _____

Title: _____

(NAME OF SURETY)

By: _____

Title: _____

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 _____, 2016.

Principal

Surety

By:_____

By:_____

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 _____ 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 Carrollton (Owner), in the penal sum of _____ dollars (\$_____) 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 _____, 2016, for the RFP# 16-019 FOR THOMAS BASEBALL FIELDS RENOVATIONS AND IMPROVEMENTS 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 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 _____, 2016.

Principal

Surety

By: _____

By: _____

Title: _____

Title: _____

Address: _____

Address: _____

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

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT, _____ whose address is _____
_____, as PRINCIPAL, _____ an

_____, 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 Carrollton, Texas, hereinafter called CITY, a municipal corporation organized and existing under the laws of Texas, at Carrollton, Dallas County, Texas, the sum of _____ (\$ _____) in lawful money of the United States, for the payment of which sum will and truly to be made unto said City of Carrollton, 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.

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AND IMPROVEMENTS**

THIS obligation is conditioned, however, that whereas said _____ has this day of _____, 20____, entered into a written Contract with the said CITY to build and construct _____, located in the City of Carrollton, Texas, which Contract and the Plans 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 _____ 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 (2) years 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) years, 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 were 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 Article 5160 of Vernon's Annotated Civil Statutes, 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 gent 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 _____, 2016.

Principal

Surety

By: _____

By: _____

Title: _____

Title: _____

Address: _____

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

**GENERAL CONDITIONS FOR
CONSTRUCTION CONTRACT**

CITY OF CARROLLTON

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, General Conditions, Special Conditions, Specifications, Council of Governments Standard Specifications for Public Works, 1983 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 Carrollton, named and designated in the Contract Agreement. All notices, letters, and other communication directed to the Owner shall be addressed and delivered to:

City of Carrollton
P.O. Box 110535
Carrollton, Texas 75011-0535

Attn: Purchasing Department

- 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 therefor 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 judgement 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 manila envelope with the appropriate job name on 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 surety company used by the contractor must have a minimum rating of A VII.

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 five "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 and drawings 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.

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:

Owner has provided dimensions, elevations, and quantities for Contractor's reference only. 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 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 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 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 therefrom.

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 work shall be prosecuted to completion in accordance with the schedule provided for below and shall be 100% completed within calendar days specified in the final agreement from the date of the Notice to Proceed.

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 \$250.00 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 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 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 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 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 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 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. 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 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.

EXCAVATION SAFETY PROCEDURE

In a municipality or in the extraterritorial jurisdiction of a municipality as provided by the Municipal Annexation (Chapter 43) Texas Local Government Code, on construction projects in which excavation will exceed a depth of five feet, the bid document and the contract must include detailed plans and specifications for excavation safety systems.

Prior to execution of a contract the Contractor will be required to submit an excavation safety plan for the project. This excavation safety plan must be designed and sealed by a professional engineer registered in the State of Texas with professional experience in soil mechanics. The Contractor is responsible for obtaining borings and soil analysis as required for plan design. The excavation safety plan shall be designed in conformance with Occupational Safety and Health Administration (OSHA) Standards and Regulations.

After review of the excavation safety plan, the City Engineer will forward the reviewed plan to the appropriate city construction division for use in inspection. Plans for construction will not be released by the City Engineer until this plan is reviewed. Changes in the excavation safety plan after initiation of construction may not be cause for extension of time or change order, and will require the same

review process. Contractor accepts sole responsibility for compliance with all applicable safety requirements. The review is only for general conformance with OSHA Safety Standards. Release of the excavation safety plan by the City Engineer does not relieve Contractor from any property damage or bodily injury (including death) that arises from use of the excavation safety plan, from Contractor's negligence in performance of contract work, or from city's failure to note exceptions to the excavation plan. The safety plan shall remain the sole responsibility and liability of the Contractor. A separate pay item for an excavation and support system shall be included in the bid documents.

Contractors have three ways to meet OSHA standards for excavation safety. They are as follows:

1. Minimum angle of repose for sloping of the sides of excavations.
2. Utilization of trench box.
3. Shoring, sheeting and bracing methods.

Contractors electing to utilize the minimum angle of repose must submit:

1. Soil classification according to the unified soil classification system including water content and plasticity indexes, and a minimum angle of slope excavation.
2. A detailed plan of the excavation area and the impact on existing right-of-way and infrastructure.
3. Waiver of claim for delay of cost.

Contractors electing to utilize a trench box must submit:

1. Physical dimensions, materials, position in the trench, expected loads, and the strength of the box.
2. Waiver of claim for delay cost.

Contractors electing to utilize shoring, sheeting and bracing must submit:

1. Dimensions and materials of all uprights, stringers, crossbracing and spacing required to meet OSHA requirements.

2. Waiver of claim for delay cost.

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 Carrollton 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.

All required tests in connection with acceptance of source of materials shall be made at the Contractor's expense by a properly equipped laboratory of established reputation whose work and testing facilities are acceptable to the Owner. Any change in origin or method of reparation or manufacture of a material be routinely tested will require new tests. Reports of all tests shall be furnished to the Owner in as many copies as required.

27. GUARANTEE:

Contractor shall guarantee that all products are in accordance with the manufacturer'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 manufacturers policies.

Contractors warranty against defects in material and workmanship shall extend two years from the date of final payment.

28. INSURANCE:

The Contractor shall secure and maintain throughout the duration of this contract insurance of such types and in such amount as may be necessary to protect himself and the interest of the Owner against all hazards or risks of loss as hereinafter specified. The form and limits of such insurance, together with the underwriter thereof in each case, shall be acceptable to the Owner but regardless of such acceptance it shall be the responsibility of the Contractor to maintain adequate insurance coverage at all times. Failure of the Contractor to maintain adequate coverage shall not relieve him of any contractual responsibility or obligation.

Satisfactory certificates of insurance shall be filed with the Owner prior to starting any construction work on this contract. The certificates shall state that 30 days advance written notice will be given to the Owner before any policy covered thereby is changed or canceled.

The Contractor shall comply with all Federal, State and local laws and ordinances relating to Social Security, Unemployment Insurance, Pensions, etc.

28.1 WORKERS COMPENSATION INSURANCE COVERAGE:

(A) Definitions:

Certificate of coverage ("certificate") - copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity. **Persons providing services on the project ("subcontractor" in §406.096)** -

includes all persons or entities performing all or part of the services the

contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- (B) The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.
- (C) **The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.**
- (D) If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- (E) The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
 - (1) 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
 - (2) 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.
- (F) The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- (G) The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten 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.
- (H) The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are

required to be covered, and stating how a person may verify coverage and report lack of coverage.

- (I) The contractor shall contractually require each person with whom it contracts to provide services on a project, to:
 - (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, §401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - (2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
 - (3) 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 certificate of coverage ends during the duration of the project;
 - (4) obtain from each other person with whom it contracts, and provide to the contractor:
 - (a) a certificate of coverage, prior to the other person beginning work on the project; and
 - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, 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 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
 - (7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.

- (J) By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the Contractor who will provide services on the project will be covered by workers' compensation coverage for duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to

administrative penalties, criminal penalties, civil penalties, or other civil actions.

- (K) The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

28.2 COMPREHENSIVE AUTOMOBILE LIABILITY:

This insurance shall be written in comprehensive form and shall protect the Contractor against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles licensed for highway use, whether they are owned, nonowned, or hired.

The liability limits shall not be less than:

Bodily injury\$250,000/person
\$500,000/occurrence
Property Damage	...\$100,000/occurrence

The insurance shall be of the occurrence type and name the Owner as an additional insured.

28.3 COMPREHENSIVE GENERAL LIABILITY:

This insurance shall be written in comprehensive form and shall protect the Contractor against all claims arising from injuries to members of the public or damage to property of others arising out of any act of omission of the Contractor or his agents, employees, or subcontractors. In addition, this policy shall specifically insure the contractual liability assumed by the Contractor under the article entitled DEFENSE OF SUITS.

To the extent that the Contractor's work, or work under his direction, may require blasting, explosive conditions, or underground operations, the comprehensive general liability coverage shall contain no exclusion relative to blasting, explosion, collapse of buildings, or damage to underground property. The liability limits shall not be less than:

Bodily Injury\$250,000/person
\$500,000/occurrence
Property Damage	...\$500,000/occurrence
	...\$500,000/aggregate

The insurance shall be of the occurrence type and name the Owner as an additional insured.

28.4 BUILDER'S RISK: (NOT REQUIRED)

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.

28.5 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 coverages 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.

29. 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, materialmen, or suppliers the Contractor shall indemnify and save harmless the Owner and his officers and agents, from all losses, damages, costs, expenses, judgements, or decrees arising out of such action.

30. 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.

31. 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.

32. 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.

33. 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.

34. 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.

35. 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.

36. 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 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 estimates. After each estimate has been found acceptable, the Owner will pay to the Contractor on or about the 25th day of the month 90% 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.

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.

Specifications
for
THOMAS BASEBALL PARK
City of Carrollton, Texas



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SECTION 00300 -- Proposal Form

00300.1 TIME: 1:30 PM
00300.2 DATE: April 14, 2016
00300.3 TO: Purchasing Agent

Provide (3) three copies of the complete proposal form.

Gentlemen:

00300.4 STIPULATED SUM

The undersigned having examined the Contract Documents entitled:

THOMAS BASEBALL PARK IN CARROLLTON

and having visited the site of the proposed construction, and having familiarized himself with the local conditions affecting the cost of the work, and with all addenda to the said documents, hereby proposes to furnish all supervision, labor, materials, equipment, tools, and accessories and to do all work in accordance with said documents and addenda thereto. Total Base bid shall include a CONTINGENCY FUND of \$ 20,000. Total base bid, including contingency fund is:

_____ Dollars

(\$ _____)

Total Base Bid

Total Materials Incorporated into the Projects

\$ _____

Total Labor, Supervision and Materials Not Incorporated into the Projects

\$ _____

ADD -- ALTERNATES:

Alternate #1 -- Add – Alternate #1 -- Add – Brick Veneer @ Backstop – Field #1. Provide and Install 91 linear feet of Brick Veneer and Cap @ Backstop, sheet LA-2CD Detail J. Hereby proposes to furnish all supervision, labor, materials, equipment, tools, and accessories and to do all work in accordance with said documents and addenda thereto.

_____ Dollars(\$_____)

(\$_____)

* Total Materials Incorporated into Alternate Add #1

(\$_____)

* Total Labor, Supervision and Materials Not Incorporated into Alternate Add #1

(\$_____)

* These two numbers must equal the total Alternate Add #1 amount.

UNIT PRICES:

The undersigned agrees that the following unit prices will apply to adjust quantities of materials indicated on drawings. Prices are for materials furnished and installed. It is further agreed that the quantities of work to be done at unit prices and material to be furnished may be increased or diminished, as may be considered necessary in the opinion of the Owner's Representative, and that all quantities of work, whether increased or decreased, are to be performed at the unit prices set forth below except as provided for in the specifications. All unit prices are for addition or deletion.

Estimated quantities provided for individual items are estimates only. Contractor shall be responsible for formulating his own quantity take-off for all items. Provide the following breakdowns for the lump sum bid. *The sum of all base bid items shall equal the amount of the Total Base Bid stated above.* Items not stated in the bid form but shown on the plans shall be considered incidental to the project.

<u>QTY</u>	<u>UNIT</u>	<u>ITEM DESCRIPTION</u>	<u>UNIT PRICE</u>	<u>TOTAL AMOUNT</u>
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SITE COMPONENTS (FURNISH & INSTALL):

1	LS	Mobilization, barricades and project incidentals complete and in place.	\$ _____	\$ _____
1	LS	Site Earthwork complete and in place.	\$ _____	\$ _____
1	LS	Top Soil and Fill stockpile provided by Owner, distributed by contractor on-site as per plan elevations, complete and in place.	\$ _____	\$ _____
445	LF	Concrete Sidewalk 8 ft. Width (LA-1CD/A-D) complete and in place.	\$ _____	\$ _____
318	LF	Concrete Sidewalk 6 ft. Width (LA-1CD/A-D) complete and in place.	\$ _____	\$ _____
101	LF	Concrete Sidewalk 5 ft. Width (LA-1CD/A-D) complete and in place.	\$ _____	\$ _____
13,960	SF	Concrete Parking Lot (LA-1CD/A-E) complete and in place.	\$ _____	\$ _____
795	LF	Concrete Curb (LA-1CD/E) complete and in place.	\$ _____	\$ _____
1	EA	Concrete Bleachers Field #1 (LA-1L & LA-1G) (LA-1CD/F-I) complete and in place.	\$ _____	\$ _____
565	SF	Concrete Misc. (LA-1CD/A-D) complete and in place.	\$ _____	\$ _____
5,800	SF	Concrete Flatwork behind backstops (LA-1CD/A-D) complete and in place.	\$ _____	\$ _____

2	EA	Concrete Wheel Stop (LA-2CD/B-C) complete and in place.	\$ _____	\$ _____
1	EA	Parking Lot Lane Stripe painting (LA-1L) complete and in place.	\$ _____	\$ _____
1	EA	Parking Lot Accessible Signage and detectable warning 3'x8' (LA-2CD/A-C) complete and in place.	\$ _____	\$ _____
2	EA	12 FT. Width Driveway Approach as per City standards (LA-3CD) complete and in place.	\$ _____	\$ _____
1	EA	Concrete Steps w/ Railing (LA-1CD/G) complete and in place.	\$ _____	\$ _____
1	EA	Concrete Slab for Pre-Manufactured Building provided by Owner. (LA-2L) complete and in place.	\$ _____	\$ _____
2	EA	Shade Structure Install including all associated Concrete footings, Owner provided equipment and delivered to the site, complete and in place.	\$ _____	\$ _____
184	LF	20 FT. Backstop Fencing (LA-2CD/D-G) complete and in place.	\$ _____	\$ _____
102	LF	15 FT. Backstop Fencing (LA-2CD/D-G) complete and in place.	\$ _____	\$ _____
106	LF	6 FT. Fencing (LA-2CD/E) complete and in place.	\$ _____	\$ _____
4	EA	Gate (LA-2CD/F) complete and in place.	\$ _____	\$ _____
4	EA	Dugout Fencing with seating (LA-2CD/G) complete and in place.	\$ _____	\$ _____

DRAINAGE COMPONENTS (FURNISH & INSTALL):

1	EA	Curb Inlet 8 ft. (C-1) complete and in place.	\$ _____	\$ _____
155	LF	12" RCP (C-1) complete and in place.	\$ _____	\$ _____
1	EA	Connect to Existing 18" RCP (C-1) complete and in place.	\$ _____	\$ _____

9 EA Channel Grate 4' x 6", provide 6" concrete mow-edge at turf installation typical. (LA-1G, LA-2G, and LA-3G) complete and in place. \$_____ \$_____

425 LF 6" N-12 ADS Pipe complete and in place. \$_____ \$_____

EROSION CONTROL (FURNISH AND INSTALL):

1 EA Stabilized Construction Entrance/Exit complete and in place. \$_____ \$_____

1,014 LF Erosion Control Fence complete and in place. \$_____ \$_____

1 EA SWPPP Permit and Maintenance as required complete and in place. \$_____ \$_____

TURF COMPONENTS (FURNISH AND INSTALL):

18,449 SF Solid Sod Bermuda Grass complete and in place. \$_____ \$_____

MISC. SITE ELEMENTS (FURNISH & INSTALL):

2 EA Elec. misc. existing scoreboard control & elec. outlet, relocate (LA-1L & LA-3L) complete and in place. \$_____ \$_____

1 EA Elec. misc provide conduit to column (LA-1L) complete and in place. \$_____ \$_____

BIDDER understands the statements and Owner's objectives contained in SECTION 01010 -- Summary of Work.

ADDENDA:

This will acknowledge receipt of the following addenda which are part of the Bidding Documents:

Addendum No. _____ Date. _____

Addendum No. _____ Date. _____

Addendum No. _____ Date. _____

Addendum No. _____ Date _____

The undersigned bidder hereby declares that he has visited the site of the work and has carefully examined the Contract Documents pertaining to the work covered by the above bid, and he also agrees to commence work within ten (10) days after date of written notice to do so and to substantially complete the work on which he has bid within _____consecutive calendar days subject to such extensions of time allowed by specifications.

The undersigned bidder agrees that his bid shall be good and may not be withdrawn for a period of 90 calendar days after the scheduled closing time for receiving bids.

The undersigned bidder understands that the Owner reserves the right to reject any or all bids and to waive any informalities in the bidding.

SECTION 00800 -- Standard Specifications

The Standard Specifications of this contract for construction shall be the STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, NORTH CENTRAL TEXAS, as published by the North Central Texas Council of Governments, and is made a part of the Contract Documents to the same extent as if bound herein, at date of bid opening.

The STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, NORTH CENTRAL TEXAS, CURRENT EDITION shall cover only those items which are not covered by the technical specifications included in Division 1 through Division 16 of the Project Manual.

- The City of Carrollton has adopted the North Central Texas Standard Specifications with the following exceptions:
- Testing and Laboratory Control -- Refer to Section 01410, Testing and Laboratory Control.
- Construction Stakes -- The Contractor shall set all grades, lines, and measurements necessary to the proper performance and control of the work.

(End of Section)

SECTION 01010 - SUMMARY OF WORK

1.01 WORK COVERED BY CONTRACT DOCUMENTS:

A. Work covers furnishing all labor, tools, materials, and equipment necessary to construct the backstop fencing, concrete parking lot, concrete sidewalk and plaza, shade structures installation, site storm drainage improvements, erosion control, solid sod, and all misc. improvements, as shown on the plans and specifications.

Note: Sheet LA-1SD - Site Demolition to be performed by Others, and is shown only for reference.

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B. Contractor's Duties:

1. Contractor shall provide and pay all costs associated with:
 - a. Labor, materials and equipment.
 - b. Tools, construction equipment and machinery.
 - c. **Water**, heat, and utilities required for all construction activities.
 - d. Other facilities and services necessary or proper execution and completion of work.
 - e. **Water** for installation, establishment and maintenance of any plant specifically turf grass (Bermuda, Buffalo and/or Rye Grass), to comply with section 02930, paragraph 3.08 Coverage.
 - f. New site **Water** Meter fees shall be at the contractor's expense.

2. Owner is exempt from sales tax on products permanently incorporated into the project.
 - a. Tax Exemption: As a result of tax bill 1 H.B. 11 passed during the special session ending August 13, 1991, the following applies to tax exemption status:
Materials which are incorporated into or become part of the project are exempt from sales tax. A "separated contract" will be issued by the City which separates charges for material from charges for labor. The successful low bidder must provide separate bid amounts for the labor and materials aspect of the project and acquire a sales tax permit issued by the State Comptroller. The contractor is expected to execute a resale certificate instead of paying the sales tax at the time of purchase. The City will issue an exemption certificate for the materials as long as they are incorporated into the finished project. This procedure may

not be used for materials which do not become a part of the finished product (example: equipment rentals, form materials, etc.).

If contractor does not issue a resale certificate, then the amount of sales tax must be included in the prices quoted. No additional compensation, beyond the prices quoted, is due the contractor for sales tax.

- b. Obtain sales tax exemption certificate number from Owner.
 - c. Place exemption certificate number on invoices for materials incorporated in work.
 - d. Upon completion of work, file with Owner notarized statement that all purchases made under exemption certificate were entitled to be exempt.
 - e. Pay legally assessed penalties for improper use of exemption certificate number.
3. Secure and pay for, as necessary for proper execution and completion of work, and as applicable at time of receipt of bids:
 - a. Government Fees.
 - b. Licenses.
 4. The owner shall pay for required building permits.
 5. Give required notices.
 6. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
 7. Promptly submit written notice to Architect of observed variance of Contract Documents from legal requirements. Assume responsibility for work known to be contrary to such requirements, without notice.

1.01 CONTRACTS:

The City of Carrollton "Construction Agreement"

Construct Work under a stipulated sum contract, including General Construction, Site Work, and any other Required Work.

1.03 SPECIAL REQUIREMENTS:

Contractor shall assume responsibility for the protection of all areas of work and shall protect existing property and trees as required during the construction period. Existing surfaces that are damaged due to construction shall be patched or replaced to original condition.

1.04 CONTRACTOR USE OF PREMISES:

1. Confine operations at site to areas permitted by Law, Ordinances, Permits, and Contract Documents.
2. Do not unreasonably encumber site with materials or equipment.
3. Do not load structure with weight that will endanger.
4. Assume full responsibility for protection and safekeeping of products stored on premises.
5. Move any stored products which interfere with operations of Owner or other Contractors.
6. Obtain and pay for use of additional storage or work areas needed for operations.
7. Use of site: exclusive and complete, for execution of work, except:
 - a. Areas where trees are located.
 - b. Areas under construction by others.
8. Limit use of site for work and storage as follows:
 - a. For work related to this project only.

(End of Section)

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

1.02 DESCRIPTION:

- A. Execute cutting including excavating, fitting or patching of work required to:
 - 1. Make several parts fit properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed work as specified for testing.
- B. In addition to Contract requirements, upon written instructions of Landscape Architect:
- C. Do not endanger any work by cutting or alteration or any part of it.
- D. Do not cut or alter work of another separate Contractor without written consent of Owner and of such separate Contractor.

1.03 SUBMITTALS:

- A. Prior to cutting which affects structural safety of project, submit written notice to Landscape Architect requesting consent to proceed with cutting, including:
 - 1. Identification of project, description of affected work, necessity for cutting, effect on other work, effect of structural integrity of project, description of proposed work. Designate:
 - a. Scope of cutting and patching.
 - b. Contractor and trades to execute work.
 - c. Products proposed to be used.
 - d. Extent of refinishing.
- B. Should conditions of work or schedule indicate change of materials or methods, submit written recommendation to Architect, including:
 - 1. Conditions indication change.
 - 2. Recommendations for alternative materials or methods.
 - 3. Submittals as required for substitutions.
- C. Submit written notice to Landscape Architect designating time work will be uncovered to provide for observation.

1.04 PAYMENT FOR COSTS:

Costs resulting from ill-timed or defective work, or work not conforming to Contract Documents, including costs for additional services of Landscape Architect, shall be borne by the party responsible for ill-timed, rejected or nonconforming work.

PART 2 - PRODUCTS

2.01 MATERIALS:

For replacement of work removed, comply with Specifications for type of work to be performed.

PART 3 - EXECUTION

3.01 INSPECTION:

- A. Inspect existing conditions of work, including elements subject to movement or damage during cutting and patching and during excavating and backfilling.
- B. After uncovering work, inspect conditions affecting installation of new products.

3.02 PREPARATION:

Provide shoring, bracing and support as required to maintain structural integrity of project.

3.03 PERFORMANCE: Ill-timed or nonconforming work.

- A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances, finishes.
- B. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs and new work.
- C. Execute excavating and backfilling by methods which will prevent damage to other work and will prevent settlement.
- D. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
- E. Refinish entire surfaces as necessary to provide an even finish:
 - 1. Continuous surfaces: to nearest intersections.
 - 2. Assembly: entire refinishing.
- F. No cutouts, access doors or mechanical or electrical devices of any kind shall be installed in finish materials or areas other than within mechanical rooms and shafts without specific prior approval by Architect of location and appearance.

(End of Section)

SECTION 01077 - REFERENCE STANDARDS

PART 1 - GENERAL

1.01 SCOPE:

Various sections of specifications contain references to specific standards. Applicable portions of standards listed that are not in conflict with specification requirements are hereby made a part of Contract Documents.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

Testing-----Section 01410.

1.03 QUALITY ASSURANCE:

- A. Modifications and exceptions to standards shall be considered as amendments and unmodified portions shall remain in effect.
- B. In case of conflict between standards, or between specifications and standards, most stringent requirement shall govern.
- C. Editions of standards shall be latest edition at time of bid opening, or contract award, as applicable, including any supplements or amendments thereto.

PART 2 - MATERIALS

2.01 SCHEDULE OF STANDARDS:

- A. Reference standards are listed in various sections using abbreviations contained below.
- B. Following schedule is partial; additional abbreviations and standards may not appear.
 - AA - Aluminum Association
 - AASHO - American Association of State Highway & Transportation Officials
 - ACI - American Concrete Institute
 - AIA - American Institute of Architects
 - AISC - American Institute of Steel Construction
 - AITC - American Institute of Timber Construction
 - ANSI - American National Standards Institute
 - APA - American Plywood Association
 - ASHRAE - American Society of Heating, Refrigeration, & Air-Conditioning Engineers
 - ASTM - American Society for Testing & Materials
 - AWS - American Welding Society
 - AWPA - American Wood Preservers Associations
 - AAMA - Architectural Aluminum Manufacturers Association
 - AWI - Architectural Woodwork Institute
 - BIA - Brick Institute of America
 - BHMA - Builders Hardware Manufacturers Association
 - CPSC - Consumer Product Safety Commission
 - CRA - California Redwood Association

CTI - Ceramic Tile Institute
CLFMA - Chain Link Fence Manufacturers Association
CRSI- Concrete Reinforcing Steel Institute
FM- Factory Mutual System
FS - Federal Specification
FGMA - Flat Glass Marketing Association
HPMA - Hardwood Plywood Manufacturers Association
MS - Military Specification
NAAMM - National Association of Architectural Metal Manufacturers
NCMA - National Concrete Masonry Association
NEMA -National Electrical Manufacturers Association
NFPA - National Fire Protection Association
NPCA - National Precast Concrete Association
OSHA - Occupational Safety & Health Act
PCA - Portland Cement Association
SMACNA - Sheet Metal & Air Conditioning Contractors National Association
SFPA - Southern Forest Products Association
SPIB -
SDI - Steel Deck Institute
SJI - Steel Joist Institute
TCA - Tile Council of America
UL - Underwriters Laboratories
WCLIB - West Coast Lumber Inspection Bureau
WWPA - Western Wood Products Association

(End of Section)

SECTION 01100 -- ALTERNATES

PART 1 - GENERAL

1.01 GENERAL:

- A. This Section describes the work to be added under each alternate. The referenced drawings and specification sections contain pertinent information to further describe the extent of the work to be provided under each alternate.
- B. Coordinate all pertinent related work and modify surrounding work as required to complete the project under each alternate designated in the Owner-Contractor Agreement.

1.02 DESCRIPTION OF ADD - ALTERNATES:

Alternate #1 -- Add – Brick Veneer @ Backstop – Field #1. Provide and Install 91 linear feet of Brick Veneer and Cap @ Backstop, sheet LA-2CD Detail J.

(End of Section)

SECTION 01200 - PROJECT MEETINGS

PART 1 – GENERAL

1.01 PRE-CONSTRUCTION MEETING:

A pre-construction meeting will be held at the site prior to beginning of the Work at a time designated by the Landscape Architect, but not later than 15 days after date of Notice to Proceed. Representatives of the Landscape Architect, Owner, Contractor, including designated superintendent, and all major subcontractors shall be present. The following shall serve as a minimum agenda: distribute and discuss the list of major subcontractors; tentative construction schedule; critical work sequencing; relation and coordination of prime contractors; designation of responsible personnel; processing of field decisions and Change Orders; submittal of Shop Drawings, Project Data and Samples; procedures for maintaining Record Documents; and Safety and First-aid Procedures.

1.02 PROGRESS MEETINGS:

Schedule regular monthly progress meetings at the site on a date mutually agreed upon by the Architect and the Contractor. Representatives of the Landscape Architect, Contractor, and necessary Prime Contractors shall be present. Minimum agenda would be as follows: review work progress since last meeting; note field observations, problems, and decisions; review off-site fabrication problems; revise construction schedule as indicated; review submittal schedules, expedite as required to maintain schedule; review changes proposed by the Owner for effect on construction schedule and effect on completion date.

(End of Section)

SECTION 01310 - CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

- A. Section 01200 - Project Meetings
- B. Section 01340 - Shop Drawings, Project Data and Samples

1.02 FORMS OF SCHEDULES:

- A. CPM, PERT, Plan-A-Log, Bar Chart or other approved form.
- B. Order: Chronological order of beginning of each item or work.
- C. Marking: Identify each item referenced by major specification section number.

1.03 CONTENT OF SCHEDULES:

- A. Provide projected construction schedules for entire Work, revise periodically.
- B. Provide complete sequence of construction by activity.
 - 1. Shop Drawings, Project Data and Samples:
 - a. Submittal dates
 - b. Dates reviewed copies will be required.
 - 2. Decision dates for:
 - a. Products specified by allowances.
 - b. Selection of finishes.
 - 3. Product procurement and delivery dates.
 - 4. Dates for beginning and completion of each element of construction.
- C. Identify work for separate floors, separate phases or other logically grouped activities.
- D. Show projected percentage of completion for each item of Work as of first day of each month.
- E. Provide separate sub-schedule, showing submittals, review times, procurement schedules, and delivery dates as required.
- F. Provide sub-schedules to define critical portions of entire schedule as required.

1.04 UPDATING:

- A. Show all changes occurring since previous submission of updated schedule.
- B. Indicate progress of each activity, show completion dates.
- C. Include:
 - 1. Major changes in scope.
 - 2. Activities modified since previous updating.
 - 3. Revised projections due to changes.
 - 4. Other identifiable changes.

1.04 SUBMITTALS:

- A. Submit initial schedules within 15 days after date of Notice to Proceed.
 - 1. Architect will review schedules and return review copy within 10 days after receipt.
 - 2. If required, re-submit within 7 days after return of review copy.

- B. Submit periodically updated schedules accurately depicting progress to first day of each month.
- C. Submit the number of copies required by Contract, plus two copies to be retained by Architect.

1.06 DISTRIBUTION:

- A. Distribute copies of reviewed schedules to:
 - 1. Job site file.
 - 2. Major subcontractors.
 - 3. Other concerned parties.
- B. Instruct recipients to report any inability to comply, and provide detailed explanation, with suggested remedies.

(End of Section)

SECTION 01340 -- Shop Drawings, Product Data and Samples

1.01 GENERAL:

- A. Submit to the Landscape Architect shop drawings, product data and samples required by Specification sections.
- B. Prepare and submit, with construction schedule, a separate schedule listing dates for submission and lead dates for reviewed shop drawings, product data and samples for each item.

1.02 SHOP DRAWINGS:

- A. Original drawings, prepared by Contractor, Subcontractor, Supplier, or Distributor, which illustrate some portion of the work, showing fabrication, layout, setting or erection details, prepared by a qualified detailer. Drawings shall be dated and marked to show the name of the Project, Architect, Contractor, originating Sub-contractor, Manufacturer or supplier and separate details as pertinent.
- B. Reproductions for submittals: three complete set.

1.03 PRODUCT DATA:

- A. Manufacturer's standard schematic drawings:
 - 1. Modify drawings to delete information which is not applicable to Project.
 - 2. Supplement standard information to provide additional information applicable to Project.
- B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data: Submittal information which can not be reproduced economically shall be submitted in such quantities as to allow the Architect to retain one (1) copy of each after review.
 - 1. Clearly mark each copy to identify pertinent materials, products or models. Project name, Architect, Contractor, originating Sub-contractor, Manufacturer or Supplier and separate details, if pertinent.
 - 2. Show dimensions and clearances required.
 - 3. Show performance characteristics and capacities.
 - 4. Show wiring diagrams and controls.
 - 5. Identify specification section and locations at which materials or equipment are to be installed.
- C. Reproductions for product data: three complete sets.

1.04 SAMPLES:

Physical examples to illustrate materials, equipment and workmanship, and to establish standards by which completed work is judged.

1.05 CONTRACTOR RESPONSIBILITIES:

All Shop Drawings required by these Construction Documents are considered as "tools" of construction and not "tools" of design. By submitting Shop Drawings the Contractor acknowledges his understanding and acceptance of this principle. The Contractor shall review Shop Drawings, Project Data and Samples prior to submission to Architect. It shall include Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field dimensions and compliance with Contract Documents. Shop

Drawings stamped and signed as approved by the General Contractor but showing evidence that they have been carefully checked by the Contractor will be returned to the Contractor, rechecked by the Contractor and resubmitted to the Architect.

- A. Verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
- B. Coordinate each submittal with requirements of work of Contract Documents.
- C. Contractor's responsibility for errors and omissions in submittals is not relieved by Architect's review of submittals.
- D. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Architect's review of submittals, unless Architect gives written acceptance of specific deviations.
- E. Notify Architect, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
- F. Begin no work which requires submittals until return of submittals with Architect's stamp and initials or signature indicating review.
- G. After Architect's review, distribute copies.

1.06 SUBMISSIONS REQUIREMENTS:

- A. Schedule submissions at least 30 days before date reviewed submittals will be needed, in accordance with approved submittal schedule.
- B. Submit one reproducible transparency and three opaque prints of shop drawings, seven complete sets for submittal information, seven copies of product data submittals.
- C. Submit number of samples specified in each of Specification sections.
- D. Accompany submittals with transmittal letter in duplicate containing:
 - 1. Date.
 - 2. Project title and number.
 - 3. Contractor's name and address.
 - 4. The number of each shop drawing, product data and sample submitted.
 - 5. Notification of deviations from Contract Documents.
 - 6. Other pertinent data.

1.07 RESUBMISSION REQUIREMENTS:

- A. Shop Drawings:
 - 1. Revise initial drawings as required and resubmit as specified for initial submittal.
 - 2. Indicate on drawings any changes which have been made, other than those requested by Architect.
- B. Product Data and Samples: Submit new data and samples as required for initial submittal.

1.08 ARCHITECT/ENGINEER DUTIES:

- A. The Architect will review Shop Drawings, Project Data and Samples with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The Architect's approval of a separate item shall not indicate approval of an assembly in which the item functions.

- B. The Architects approval of Shop Drawings, Project Data and Samples shall not relieve the Contractor of responsibility of any deviation from the Contract Documents unless the Contractor has informed the Architect in writing of each deviation at the time of submission and the Architect has given written approval to the specific deviation, nor shall Architect's approval relieve the Contractor from responsibility for errors or omissions in the Shop Drawings, Project Data and Samples.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW:

- A. Distribute copies of shop drawings and product data which carry Architect's stamp as required for construction, including Contractor's file, job site file, other prime Contractors, Subcontractors, Supplier and Fabricator.
- B. Return 2 sets of prints from approved transparencies to Architect for record.

(End of Section)

SECTION 01410 -- Testing Laboratory Services

PART 1 - GENERAL

1.01 SCOPE:

- A. An independent testing laboratory, selected/approved by the Owner and paid for by the Contractor, will perform the professional testing and laboratory services.
- B. Requirements of the Conditions of the Contract of this Project Manual apply to all work required for this Section.
- C. Materials and workmanship not meeting the required standards or performance obligations are to be removed and replaced at the Contractor's expense, including all subsequent testing.
- D. All inspections and tests shall be in accordance with the rules and regulations of the building code and all jurisdictional authorities of the State of Texas, the specifications of the ASTM, and other respective technical societies, organizations, or bodies having relation to the work or materials inspected or tested.
- E. Where the terms "inspector" and "testing laboratory" are used, they mean and refer respectively to an officially designated and accredited inspector of the testing laboratory and the testing laboratory approved by the Owner.

1.03 WORK INCLUDED:

The Contractor will schedule the scope of testing by the testing laboratory. The Owner may require all of the following tests:

- A. Inspection of all non-flatwork rebar and any pier drilling operations to include rebar.
- B. Perform tests on earthwork and soil stabilization.
- C. Making slump tests of all concrete
- D. Preparing test cylinders for all concrete.
- E. Compression testing of all specimen cylinders taken from all concrete actually placed throughout the work.
- F. Keeping inspecting and testing logs of all inspections and tests of concrete.
- G. Testing of Concrete Paving.
- H. Supervising the batching and mixing of concrete, both at the plant and at the site, as required by Owner.
- I. Inspecting and testing of all structural steel as specified herein.
- J. Testing A-325 bolted connections.
- K. Tendon elongations of post tensioned concrete.
- L. Stressing of post-tensioned tendons.
- M. Submitting to Architect, Engineer, Contractor, and Owner certifications, records, and reports of all inspections and tests.

1.03 RELATED WORK:

- A. Chemical and physical analyses of reinforcing steel and structural steel will be provided by the manufacturers.
- B. Preliminary tests on materials for concrete and the design of concrete mixes will be provided and paid for by the Contractor. Design of concrete mix shall be approved by the Owner and sealed by a Texas Engineer.

1.04 RESPONSIBILITY AND DUTIES OF CONTRACTOR:

- A. Provide the Laboratory, without cost to Owner, adequate quantities of representative samples of materials proposed for use which are required to be tested.
- B. Advise Laboratory sufficiently in advance of construction operations to allow Laboratory to complete any required check tests and assign personnel for field inspection and testing as specified.
- C. Provide adequate facilities for safe storage and proper curing of concrete test samples on project site for the first 24 hours and also for subsequent field curing as required by ASTM Specifications C31.
- D. Furnish such nominal labor as is required to assist Laboratory personnel in obtaining and handling samples at the site.

1.05 AUTHORITY AND DUTIES OF LABORATORY PERSONNEL:

- A. Laboratory personnel shall inspect and/or test materials, assemblies, specimens and work performed including design mixes, methods, and techniques as specified and report to the Architect and Owner the progress thereof.
- B. If the material furnished and/or work performed fails to meet requirements of the Contract Documents, inspector shall promptly notify the Contractor, Architect and Owner of such failures.
- C. The inspector is not authorized to revoke, alter, relax, enlarge or release any requirement of the Drawings and Specifications, or to approve or accept any portion of the work.

1.06 SUBMITTALS AND CERTIFICATION:

- A. The Testing Laboratory shall submit one (1) copy each to the Landscape Architect, Engineer, Contractor and to the Owner of certification of each and every inspection and test required to be made as part of the work of this Section, or ordered by the Landscape Architect or the Owner to be made either in addition to or supplementary to inspecting and testing specified herein or in other Sections of the Specifications.
- B. Certificates shall state all details of each inspection and test to indicate satisfactory compliance with requirements of the Drawings and Specifications. Also state in certificate any and all unsatisfactory conditions or failure to comply in addition to reporting immediately to the Architect all items of unsatisfactory conditions and failure to comply with the requirements of the Drawings and Specifications.

PART 2 - MATERIALS

Not Applicable

PART 3 - EXECUTION

3.01 INSPECTION OF PIER DRILLING OPERATION:

The independent testing laboratory, selected by the Owner and paid for by the Contractor, shall make continuous inspections of pier drilling operation to determine that proper bearing strata is obtained and utilized for bearing and that shafts are properly

clean and dry before placing concrete. Contractor shall notify Architect and testing laboratory when drilling is to begin.

3.02 TESTING OF EARTHWORK:

- A. Testing Laboratory shall perform the following tests on select fill areas:
 - 1. Plasticity index tests on fill material prior to use to determine compliance with specified materials.
 - 2. Two (2) density tests for each 5,000 square feet of area per lift in place.
 - 3. One Standard Proctor curve for each type of fill material.
- B. Testing Laboratory shall perform the following tests on crushed stone base material:
 - 1. One Modified Standard Proctor curve. ASTM 1557
 - 2. Two (2) density tests for each 5,000 square feet of area per lift in place.
- C. Testing Laboratory approved shall perform the following tests on stabilized subgrades. (See Section 01100).
 - 1. Two density tests in place for each 5,000 square feet of area per lift.
 - 2. Laboratory shall make on-site visual inspection of lime treatment to confirm the type and amount of lime used.

3.03 ASPHALTIC CONCRETE PAVING:

- A. Submit proposed mix design to Architect for approval prior to starting asphaltic concrete installation.
- B. Asphaltic Concrete Tests:
 - 1. Make one laboratory Density and Stability Test, T.H.D. Bulletin C14, on each type of asphaltic concrete for each day's operation.
 - 2. Make one Field-in-Place Density Test, D1188-68 on each type of asphaltic concrete for each day's operation. Samples to be obtained by Contractor.
 - 3. Make one extracting and gradation tests, ASTM D2172-67, on each type of asphaltic concrete for each day's operation.
- C. Thickness Test: Examine pavement at selected locations to determine whether specified total thickness of asphaltic concrete has been placed. Make a minimum of one test for each 5,000 sq. ft. of paving. If average thickness is deficient by no more than 1/4" and no individual measurement is deficient by more than 5/8", pavement meets design requirements. If average thickness is deficient by more than 1/4", or if any individual thickness determination is deficient 5/8", the pavement does not meet design requirements. Deficient areas shall be defined, removed, and replaced or adjusted to design thickness by methods approved by Architect.

3.04 TESTING OF CONCRETE PAVING, CURBS, GUTTERS AND WALKS:

- A. The Testing Laboratory shall perform the following tests:
 - 1. Concrete Mix design
 - 2. Concrete compressive strength on cylinders at seven (7) and twenty-eight (28) days.
 - 3. Concrete slump determination.
- B. All inspection, cylinder(s) required, and testing shall be in accordance with testing specified for concrete.

3.05 DESIGN OF CONCRETE MIXES:

- A. See Drawings for locations for various strengths of concrete.
- B. Design of Concrete Mixes:
 - 1. Contractor shall be responsible for and pay for design of all concrete mixes.
 - 2. Mix designs shall be checked and revised, if necessary, wherever changes are made in aggregates or in surface water contact of aggregate or workability of the concrete. Slump will be the minimum to produce a workable mix. Laboratory will prescribe maximum quantity of water to be used for each class of concrete.

3.06 INSPECTING CONCRETE AT THE PLANT:

- A. A qualified inspector, at the start of each day's pour and with necessary equipment and apparatus, will inspect all weighing and batching of controlled concrete at batch plant.
- B. Make certain that all materials used are in accordance with requirements of Specifications.
- C. Check for adjustment in batch weights to compensate for variations in moisture content.
- D. Submit promptly to Architect certification of weights used in all loads of acceptable concrete.

3.07 CONTROLS AND TESTING OF CONCRETE:

- A. During the progress of mixing and placing concrete on job, take specimens and provide molds as specified. Transport, cure and store cylinders in accordance with the Standard Method for Making and Curing Concrete Compression and Flexure Test Specimens in the Field, ASTM Specifications C-31-66. Perform compression tests of two specimen after seven (7) days and two after twenty-eight (28) days.
- B. Conduct compression tests of concrete in accordance with ASTM Specifications, Designation C-39-66.
- C. See Structural Drawings for locations for various strengths of concrete.
- D. Test Cylinders: During progress of work, test cylinders shall be made and tested for each different mix placed in any one day. For every concrete placement of 100 cubic yards or part thereof over 10 cubic yards, four compression test cylinders will be made by Testing Laboratory of samples taken during pour. Make test cylinders in accordance with ASTM Designation C-31-66 and test in accordance with ASTM Designation C-29-66; two at seven (7) days and two at twenty-eight (28) days for normal cement; and one at three (3) days and one at seven (7) days for high-early strength cement. Make additional sets of four cylinders for concrete placements from 100 yards to 200 yards and a third set for pours exceeding 200 yards.
- E. Slump Tests:
 - 1. Make slump tests for each 50 cubic yards of concrete placed by Contractor, and for each set of cylinders in accordance with ASTM Designation C-143-66.
 - 2. Slump shall conform to limits shown on Drawings.
- F. Job site inspection of each batch of concrete, adjusting amounts of mixing water to assure uniform consistency from truck to truck.

- G. Check mixing time of concrete in trucks.
- H. Laboratory technicians shall inspect materials and manufacture of concrete, and report findings. When it appears that material furnished or work performed by Contractor fails to fulfill Specification requirements, technicians shall direct attention of Architect and Contractor to such failure.
- I. Not Used.
- J. Laboratory technicians do not act as foremen or perform other duties for the Contractor. Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered. Laboratory technicians are not authorized to revoke, alter, relax, enlarge, or release any requirement of the Specifications, nor to approve or accept any portion or work.
- K. Tests reports shall show time test was made, truck ticket number, slump and time of batching and location of each placement.
- L. When strength of test cylinders falls below design strength and Architect requires drilling of concrete core specimens, test core specimens in accordance with ASTM Specifications, Designation C-42-64.
- M. Report promptly to Architect all details of reasons for rejection of any and all quantities of concrete. Give all information concerning locations of the concrete pours, quantities, date of pours and other pertinent facts concerning concrete represented by the specimens.

3.08 INSPECTION OF POST-TENSIONED TENDONS:

- A. Testing Laboratory will perform field quality control of stressing operations.
- B. Laboratory will record locations of all live tendon anchorages on a diagrammatic drawing by tendon mark and will record in tabular form the tendon marks, tendon design anchor force, jack gauge reading at transfer and actual measure elongation. Elongations shall be determined by mark on tendon extensions before and after stressing. Copies of these records shall be furnished immediately to the Architect and Contractor.

3.09 INSPECTING NON-FLATWORK STEEL:

- A. Inspect all structural steel during fabrication and during and after erection for conformance with Contract Drawings and Shop Drawings. Any cases of insufficient bracing or buying, or other unsafe conditions shall be immediately called to attention of Contractor and reported to Architect.
- B. Visually inspect and check for size and appearance. When directed by Architect, visual inspection shall be supplemented by other means of testing, such as radiographic, ultrasonic, etc.
- C. No burning or other field corrections are permitted without express permission of the Architect. Immediately report any violation to Architect.

3.10 INSPECTION AND TESTING OF MORTAR AND GROUT:

ASTM C-109, one set of three for the first three days and one set of three per week. All samples taken in the field.

- A. Field Compressive Test for Mortar: Spread mortar on the masonry units between 1/2 inch and 3/4 inch thick and allow to stand for one minute, then remove mortar and place in a 2 inch by 4 inch cylinder in two layers, compressing the mortar into the cylinder using a flat end stick or fingers. Lightly

tap mold on opposite sides, level off and immediately cover molds and keep them damp until taken to the laboratory. After 48 hour set, the laboratory shall remove molds, cap the specimens, and place them in the fog room until tested in the damp condition. Four tests shall be made in accordance with ASTM Designation C39 on each 25 cubic yards of mortar.

- B. Field Compressive Test for Grout: On a flat nonabsorbent base, form a space approximately 3 inches by 3 inches by 6 inches high, using masonry units having the same moisture condition as those being laid. Line the space with a permeable paper or porous separator so that water may pass through the liner into the masonry units. Thoroughly mix or agitate grout to obtain a fully representative mix and place into molds in two layers, and puddle each layer with a 1 inch by 2 inch puddling stick to eliminate air bubbles. Level off and immediately cover molds and keep them damp until taken to the laboratory. After 48 hour set, the laboratory shall fully remove masonry units, cap the specimens, and place them in the fog room until tested in the damp condition. Units shall be made in accordance with ASTM Designation C39. Make four test specimens of each 25 cubic yards of grout poured.

3.11 INSPECTION OF BOLTED CONNECTIONS:

When A-375 bolted connections are used, at random check 10% of all the bolts but not less than 2 bolts selected at the inspecting wrench and its job inspecting torque in accordance with AISC 1.23.5 and paragraph 6, Inspection, of AISC Specification for "Structural Joints Using ASTM A 325 or A490 Bolts." If no nut or bolt head is turned by this application of the job inspecting torque, the connection shall be accepted as properly tightened. If any nut or bolt head is turned by the application of the job inspecting torque, this torque shall be applied to all bolts in the connection, and all bolts whose nut or head is turned by the job inspecting torque shall be tightened and reinspected or alternatively, the fabricator or erector at his option may retighten all of the bolts in the connection and then resubmit the connection for specified inspection. Initial test shall be paid for by the Owner. Any supplemental testing required due to test failure shall be paid by the Contractor at no expense to the Owner

3.12 QUALIFICATIONS OF WELDERS:

Fabricator and erector shall provide the Testing Laboratory with names of welders to be employed on work, together with certification that each of these welders has passed qualification tests within last year using procedures covered in the American Welding Society Standard D1.0-63.

(End of Section)

SECTION 01500 -- Temporary Facilities and Controls

- 1.01 CONTRACTOR'S BUILDINGS:
Permissible 50' from street.
- 1.02 SANITATION:
Provide a portable chemical toilet complying with all building and sanitation ordinances, laws and codes.
- 1.03 USE OF SITE:
The Owner will make the project site and access to the project site available to the Contractor for the operations of the Contract. Should it be necessary for the Contractor to use portions of existing streets and sidewalks for operations, such use shall be strictly in accordance with requirements and approval of the authority having jurisdiction.
- 1.04 STORAGE OF MATERIALS:
- A. Storage area shall be contained within the limits of the site and not in landscaped areas or sidewalks.
 - B. Contractor shall provide on the premises where directed suitable storage sheds (substantial and watertight) in which he shall store all materials subject to damage by weather. All storage sheds shall be of sufficient size to hold all materials required on the site at one time and shall have floors raised at least 6" above the ground on heavy joists or sleepers. Storage sheds shall have neat appearance.
 - C. Major subcontractors shall provide such temporary buildings as, in the opinion of the Architect, may be necessary to fully protect their materials, equipment apparatus, etc., during the progress of the work. Such buildings shall have neat appearance.
 - D. Building materials, contractor's equipment, etc., shall be stored on the premises so that it may be observed at all times by the Architect.
 - E. All materials affected by the weather shall be covered and protected and kept free from damage while being transported to the site. The second floor will not be used for any purpose.
 - F. The building shall not be used as storage facilities unless approved by the Architect.
 - G. Subcontractors desiring to store materials scheduled for immediate use in the building may do so only in locations as directed by the General Contractor and approved by the Architect.
 - H. The Contractor shall make provisions for additional storage at no cost to Owner in the event that additional storage area is required beyond that provided by the project site.
 - I. All stored materials shall be available for inspection by Architect and Owner at any time.
- 1.05 TEMPORARY OFFICES "Not Required":
- A. Provide a separate Field Office for the Contractor and Architect's use. A minimum of 8' X 10' office space with desk and chair, layout table, plan rack, and two drawer file cabinets shall be provided.

- B. The Contractor shall provide one city telephone for the use of all employed at the project. The Contractor shall pay for the installation, maintenance, removal, and all charges for the use of telephones, except charges for long distance messages which shall be paid by the person making the call. The telephones shall remain until the full completion of the work, and shall be removed when directed by the Architect.
- 1.06 TEMPORARY ENCLOSURES:
Erect temporary closures over openings when weather conditions render such action necessary for proper installation of any portion of the Work.
- 1.07 UTILITIES FOR TESTING
Any water, gas, or electricity required for testing of installed equipment installed under this contract shall be the responsibility of this contractor unless specified differently in specific sections.
- 1.08 ELECTRICAL ENERGY:
- A. Contractor shall make all necessary applications, pay all fees and charges, obtain necessary permits and provide and maintain electrical energy for power and light and as required for items of construction, and as necessary for providing and maintaining artificial light in the progress of any branch of the work. Contractor shall make arrangements for temporary connection locations and metering charges. He shall also provide all temporary wiring necessary.
 - B. When Owner occupies a portion or part of the building prior to substantial completion of the entire project, Owner will pay costs of utility services for that portion or part of the building. Contractor shall provide temporary electrical services to remaining portions of project until substantial completion of entire project.
- 1.09 TEMPORARY SEWER AND DRAIN CONNECTIONS: (Not required)
- 1.10 TEMPORARY FIRE PROTECTION:
- A. The Contractor and Subcontractor shall observe and the Contractor shall enforce throughout the work during the whole period of construction all requirements of City, State and Insurance authorities to minimize the fire hazards during the progress of the work.
 - B. Combustible refuse shall be removed from building daily.
 - C. No salamanders will be permitted.
 - D. The Contractor shall provide and maintain fire extinguishers, fire hoses and other equipment as necessary for proper fire protection during construction. Such equipment is to be used for fire protection only.
- 1.11 TEMPORARY LADDERS, SCAFFOLDS, HOISTS:
Contractor shall furnish and maintain equipment such as temporary ladders, ramps, scaffolds, hoists, runways, derricks, chutes, etc., as required for the proper execution of the work. Such apparatus, equipment, and construction shall meet requirements of the Labor Law, Federal Safety Laws, and other State or Local Laws applicable thereto. Contractor shall provide temporary construction elevator or other suitable means for egress to upper floors for use of all trades.

1.12 PUBLIC CONVENIENCE AND SAFETY:

Materials stored about the work shall be so placed, and the work shall at all times be so conducted as to cause no greater obstruction to the traveling public than is necessary. The Contractor shall make provisions by bridges or otherwise at all sidewalks and driveways for the free passage of pedestrians and vehicles. The materials excavated, the construction materials or plant used in the construction of the work, shall be placed so as not to endanger the work or prevent free access to all fire hydrants, water valves, gas valves, manholes for telephone, telegraph signal or electrical conduits, sanitary or storm sewers, or fire alarm or police call boxes in the vicinity.

1.13 BARRICADES, FENCE, LIGHTS, AND WATCHMEN:

- A. Where the work is carried on, in or adjacent to any road, parking area or public place, the Contractor shall at his own cost and expense, furnish and erect such barricades, fences, lights, danger signals, and shall provide watchmen and take other such precautionary measures as are necessary for the protection of persons or property.
- B. At the completion of construction, all barricades, fences and all traces thereof shall be removed, holes filled, paving repaired, etc.

1.14 TEMPORARY WATER:

All water required in the performance of the Contract shall be provided and paid for by the Contractor. Furnish and install all mains, laterals, branch lines and service piping and fittings to supply temporary water in sufficient quantity at required locations of the building and site. Remove all temporary connections and piping and close all openings at the end of Work. This shall include all water fees as invoiced by the City, including associated cost of City water meter and all water usage on site for any reason.

1.15 TEMPORARY HEAT:

Temporary heat, fuel and service as necessary to protect all work and materials against injury from dampness and cold until final acceptance, Owner shall assume all expenses of heating from date of occupancy. In addition, provide temporary heat as follows:

- A. During placing, setting and curing of concrete, provide sufficient heat to ensure heating of spaces involved to not less than 50 degrees F.
- B. From beginning of application of plaster and during setting and curing period, sufficient heat to produce temperature of not less than 50 degrees F.
- C. During all phases of interior finish work, and until final acceptance or occupancy by Owner, provide sufficient heat to produce a temperature of not less than 70 degrees F.
- D. Before Substantial Completion, all registers, diffusers and filters shall be cleaned or replaced as appropriate.

1.16 TEMPORARY BUILDINGS:

All temporary buildings shall be weather and watertight and maintained in a neat, orderly appearance for the duration of the Work.

- A. Enclosed Storage Areas: Contractor and each subcontractor, for their own use, shall provide and maintain watertight storage sheds for materials which might be damaged by weather. Floors should be raised above ground level. Remove from site at completion of Work.

- B. Temporary Public Protection: Should government, state or local authorities require construction of temporary barricades or covered passageways, they shall be constructed by the Contractor at no additional cost to the Owner, shall be approved by the Architect, and shall be painted and maintained in an orderly, neat appearance at all times and be repainted when necessary and as directed by Architect.
- C. Removal of Temporary Construction: Temporary office facilities, toilets, storage sheds, and other construction of temporary nature shall be removed from the site as soon as, in the opinion of the Architect, the progress of the work will permit; and the portions of the site occupied by same shall be properly reconditioned and restored to a condition acceptable to the Architect.

1.17 PROTECTION FOR WORK IN PLACE:

Work in place that is subject to injury, because of operations carried on adjacent thereto shall be covered or substantially enclosed with adequate protection. Permanent openings used as thoroughfares for the introduction of work or material to the structure shall have heads, jambs and sills well-blocked and boarded. All forms of protection shall be constructed in a manner that, upon completion, the entire Work will be delivered to the Owner in proper, whole and unblemished condition.

1.18 PUMPING AND DRAINAGE:

Surface or subsurface water or other fluids shall not be permitted to accumulate in excavations or in or about the premises and vicinity. Water, or other fluid, shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines, or other methods approved by Architect.

1.19 PROTECTION AND WARNING:

Provide and erect all temporary planking, bridges, fences, bracing, shoring, needle pinning, and warning signs and lights required by jurisdictional authorities and/or site conditions to protect persons, streets and adjacent on-site or off-site property. Bidders shall ascertain legal and other requirements.

(End of Section)

SECTION 01630 -- Substitutions

1.01 PRODUCT LIST:

- A. Within 30 days after date of Contract, submit to Owner 5 copies of complete list of products and materials which are proposed for installation.
- B. Prepare list on basis of each Specification section.
- C. For products specified under reference standards, include with listing of each product:
 1. Name and address of manufacturer.
 2. Trade name.
 3. Model or catalog designation.
 4. Manufacturer's data, including performance and test data, reference standards.

1.02 CONTRACTOR'S OPTIONS:

- A. For products specified only by reference standards, select any product meeting standards, by any manufacturer.
- B. For products specified by naming several products or manufacturers, select any product and manufacturer named.
- C. For products specified by naming one or more products, but indicating the option of selecting equivalent products by stating "or equal" after specified product, Contractor must submit request, as required for substitutions, for any product not specifically named.
- D. For products specified by naming only one product and manufacturer, there is no option, unless a substitution is approved as specified below.

1.03 SUBSTITUTIONS:

- A. During Bidding, Owner will consider written requests from prime Bidders for substitutions, received at least 14 days prior to Bid Date; requests received after that time will not be considered. Approval of proposed substitutions will be set forth in an Addendum or letter of approval. Requests for substitutions shall include data listed in Section "C" below.
- B. Within 30 days after date of Contract, Owner will consider formal requests from Contractor for substitutions of products in place of those specified. No request for substitutions will be considered after this date. Requests for substitutions shall include data listed in Section "C" below.
- C. Submit 5 copies of request for substitution. Include in substitution:
 1. Complete data substantiating compliance of proposed substitution with Contract documents.
 2. For products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature, including product description, performance and test data and reference standards.
 - c. Samples, if applicable.
 - d. Name and address of similar projects on which product was used and date of installation.
 3. For construction methods:
 - a. Detailed written descriptions of proposed method.

- b. Complete drawings showing revisions required to accommodate substitutions. Drawings shall be prepared by qualified draftsman and shall include new details of all conditions detailed on Drawings as well as any changes required of other products to accommodate the proposed substitution.
 - 4. Itemized comparison of proposed substitution with product or method specified. Pertinent data comparing both or several products shall be highlighted so Owner is not required to laboriously extract the information.
 - 5. Data relating to changes in construction schedule.
- D. In making request for substitution, Bidder/Contractor represents:
 - 1. He has personally investigated proposed product or method and determined that it is equal or superior in all respects to that specified.
 - 2. He will provide same guarantee for substitution as for product or method specified.
 - 3. He will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.
 - 4. He waives all claims for additional costs related to substitution which subsequently becomes apparent.
- E. Substitutions will not be considered if:
 - 1. They are indicated or implied on shop drawings or product data submittals without formal request as submitted in accordance with Article 1.03 of this Section.
 - 2. Acceptance will require substantial revision of Contract Documents.
 - 3. All conditions affected by the substitution have not been thoroughly redetailed and redrawn by the Contractor as part of the requested substitution.
 - 4. If pertinent data comparing intended substitution(s) with specified item is not highlighted as outlined above.

(End of Section)

SECTION 01710 -- Cleaning Up

PART 1 - GENERAL

- 1.01 GENERAL:
- A. Provide necessary cleaning during construction and final cleaning at completion of work.
- 1.02 RELATED WORK SPECIFIED ELSEWHERE:
Cleaning up required for specific trades or work is specified in Section pertaining to that trade or work.
- 1.03 REQUIREMENTS OF REGULATORY AGENCIES:
- A. Fire Protection: Store volatile waste in covered metal containers, and remove from premises daily.
 - B. Pollution Control: Conduct clean-up and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Burning or burying of rubbish and waste materials on the project site is prohibited.
 - 2. Disposal of volatile fluid wastes (such as mineral spirits, oil, or paint thinner) in storm or sanitary sewer systems or into streams or waterways is prohibited.

PART 2 - MATERIALS

- 2.01 CLEANING MATERIALS:
- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
 - B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

- 3.01 DURING CONSTRUCTION:
- A. Oversee cleaning and insure that building and grounds are maintained free from accumulations of waste materials and rubbish.
 - B. Sprinkle dusty debris with water.
 - C. At not less than every week during progress of work, clean up site and access and dispose of waste materials, rubbish and debris.
 - D. Provide dump containers and locate on site for collection of waste materials, rubbish and debris.
 - E. Do not allow waste materials, rubbish and debris to accumulate and become an unsightly or hazardous condition.
 - F. Remove waste materials, rubbish and debris from site and legally dispose of at public or private dumping areas off Owner's property.

- G. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for acceptance or occupancy.
- H. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- I. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly-painted surface.

3.02 FINAL CLEANING:

- A. Use experienced workmen, or professional cleaners, for final cleaning.
- B. At completion of construction and just prior to acceptance or occupancy, conduct a final inspection of exposed interior and exterior surfaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from interior and exterior surfaces.
- D. Repair, patch and touch-up marred surfaces to match adjacent finishes.
- E. Broom clean paved surfaces; rake clean other surfaces of grounds.
- F. Replace air conditioning filters if units were operated during construction.
- G. Clean ducts, blowers, and coils if air conditioning units were operated without filters during construction.
- H. Sweep and buff resilient floors and base.
- I. Dust all walls, metal, wood and similar finished materials.
- J. Clean all cabinet and casework.
- K. Dust and wash all plumbing and electrical fixtures.
- L. Wash and buff or polish all non-resilient materials.
- M. Vacuum all floor areas scheduled to receive floor finish by others.

(End of Section)

SECTION 01720 -- Project Record Documents

1.01 RELATED WORK SPECIFIED ELSEWHERE:

1.02 MAINTENANCE OF DOCUMENTS:

- A. Maintain at job site, one copy of the following: Contract Drawings, Specifications, Addenda, reviewed shop drawings, Change Orders, other modifications to Contract and field test reports.
- B. Store documents in temporary field office as applicable, apart from other documents used for construction.
- C. Provide necessary files and racks for storage of documents.
- D. Do not use record documents for construction purposes.
- E. Make documents available at all times for inspection by Landscape Architect and Owner.

1.03 RECORDING:

- A. Label each document "PROJECT RECORD" in two inch high printed letters.
- B. Keep record documents current.
- C. Do not permanently conceal any work until required information has been recorded.
- D. Contract Drawings: Legibly mark to record actual construction:
 - 1. Depths of various elements of foundation and drilled piers in relation to first floor level.
 - 2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - 3. Location of internal utilities concealed in construction referenced to visible and accessible features of structure, if significantly different than that shown on Drawings.
 - 4. Field changes of dimension and details.
 - 5. Changes made by Change Order or Field Order.
 - 6. Details not on original Contract Drawings.

E. Specifications and Addenda: Legibly mark-up each section to record:

1. Manufacturer, trade name, catalog number of each product and item of equipment actually installed.
2. Changes made by Change Order or Supplemental Instructions.
3. Other matters not originally specified.

1.04 SUBCONTRACTORS AND SUPPLIERS LIST:

Provide a complete list of names, addresses and telephone numbers of all subcontractors and suppliers employed on the project.

1.05 AS-BUILT PLANS:

Upon completion of construction, but prior to final acceptance, the information contained in the project record documents shall be transferred to reproducible mylar sepias. Adjustments to plan elements shall be redrafted to reflect construction changes, construction relocations shall be re-dimensioned and the installed locations of items not visible on the surface shall be dimensioned from permanent surface features such as retaining walls, light posts, building facades, etc. As-builts of the plans comprising the construction documents shall be made on mylar sepias of the original construction document plans. Changes shall be clouded or denoted in another appropriate manner to ensure that they are easily recognizable.

1.05 SUBMITTAL:

- A. At completion of project, deliver record documents to Landscape Architect.
- B. Accompany each submittal with transmittal letter in duplicate, containing the following: date, project title and number, Contractor's name and address, title and number of each record document, certification in writing that each document as submitted is complete and accurate and reflects the actual condition at the building/site, signature of contractor or his authorized representative.

(End of Section)

SECTION 01730 – TRENCH SAFETY

Trench Safety System

The work performed under this section of the specifications consists of providing trench safety systems consisting of shoring, sheeting, trench shield, and/or laid back slopes to meet the trench safety requirements of the Occupational Safety and Health Administration (O.S.H.A.), as required for this project and specified herein.

Trench safety systems shall be provided by the Contractor as provided in Subpart P - Excavation, Trenching and Shoring, Part 1926 of the Code of Federal Regulations, which describes safety and health regulations as administered by the U.S. Department of Labor Occupational Safety and Health Administration (O.S.H.A.). The standards specified by the O.S.H.A. Regulations shall be the minimum allowed on this project. It shall be the responsibility of the Contractor to design and install adequate trench safety systems for all trenches excavated on this project.

Before beginning construction, the Contractor shall furnish to the Owner for inclusion in the Contract Documents, a Trench Safety Plan for the project. The trench safety plan must be prepared and sealed by a qualified Professional Engineer registered in the State of Texas. In addition, all trench safety systems utilized in this project must be designed by a Professional Engineer registered in the State of Texas. The Contractor shall be totally responsible for the safety of all persons involved in the construction of this project.

Any core borings and soil data furnished by the Owner are for the convenience of the Contractor. The Contractor shall be responsible for any additional soil or geotechnical information required. The Contractor shall be responsible for properly designed trench safety systems to be utilized for any type of subsurface condition found on this project. The furnishing of soil information by the Owner in no way relieves the Contractor of this obligation.

If no core borings or soil data are furnished by the Owner, it shall be the Contractor's responsibility to obtain whatever geotechnical information required for preparation of trench safety systems.

Inspections of the trench and trench safety systems required of the Contractor may be made by the O.S.H.A.

The standard detail plans for Sheeting, Trench Shield, and Trench Jacks as shown in the O.S.H.A. Regulations previously referenced are attached hereto as Figures 1, 2, and 3. Also, TABLE P-2, TRENCH SHORING-MINIMUM REQUIREMENTS, are also attached. The design of the members shown in Table P-2 is the minimum acceptable on this project.

Payment for Trench and Safety Systems shall be made per lump sum as provided in the Bid Proposal. The payment shall be full compensation for all planning, engineering, materials, equipment, fabrications, installation, recovery and all incidental work required. All excavation and backfill, in addition to that specified elsewhere in these specifications, shall be considered subsidiary to this bid item.

(End of Section)

SECTION 01740 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 PRIOR TO FINAL PAYMENT:

The responsible Prime Contractors shall provide maintenance information and operations instructions for equipment and systems provided under their Contracts. (For jobs that include all work under the General Contract, the responsible subcontractors, under the coordination of the General Contractor, shall provide this information.)

1.02 OPERATION MANUALS:

Prepare operating and maintenance instructions for all equipment, particularly mechanical and electrical, that will require any adjustment, servicing, or attention for its proper operation. These instructions shall set forth all of the information necessary for Owner to operate and make full and efficient use of equipment, and perform such maintenance and servicing as would ordinarily be done by Owner or his personnel. They shall be written in simple, non-technical language when possible, with sufficient diagrams and explanation where necessary to be readily understandable by average layman. Possible hazards shall be particularly pointed out with instructions cautioning against mistakes in operation that might result in damage or danger to equipment, building or personnel.

1.03 APPROVAL:

Two copies of instructions shall be submitted to Landscape Architect for review and approval, 1 copy of which shall be returned to Contractor approved or with instructions for changes. Upon approval by Architect, 1 copy of instructions pertaining to heating and other boiler room equipment shall be suitably framed under glass by Contractor and be mounted in boiler room at location directed by Architect. Three additional copies of instructions covering all equipment shall be furnished to Architect, who will forward 2 copies to Owner for his information and use.

1.04 OPERATION MANUAL SERVICE INDEX:

Append to manual the name, address, and telephone number of Contractors and subcontractors; and for mechanical items, provide the name, address and telephone number of companies servicing installed equipment on a 24-hour basis.

1.05 OPERATION INSTRUCTION:

After submission of the above mentioned written instructions, Contractor shall furnish competent operation engineer or engineers at such time or times as directed by Architect to meet with Owner or his representative, to fully explain instructions and to demonstrate and fully familiarize Owner or his representative with all of equipment and all phases of its operation and maintenance. The amount of time to be devoted to instruction shall be reasonable and consistent with the size of the installation and the complexity thereof. Instructions shall be adequate to the extent that the Owner's personnel may proceed with normal operations in a safe and efficient manner.

1.06 ADDITIONAL INFORMATION:

In addition to the above mentioned instructions, Contractor shall furnish to Architect 1 copy of manufacturer's literature for each item of mechanical and electrical equipment installed in job. Notation shall be written on literature indicating how particular item was used and its location. This information and literature will be forwarded to Owner by Architect to aid in future servicing of equipment and ordering replacement item or parts, and it shall be in sufficient detail to satisfactorily serve this purpose.

(End of Section)

SECTION 01750 -- Storm Water Pollution Prevention Plan

The United States Environmental Protection Agency may require that a Pollution Prevention Plan (SWPPP) be prepared. The Pollution Prevention Plan for the Project is the contractors responsibility to prepare. The "Erosion Control Plan" is also a part of the Pollution Prevention Plan.

This plan shall show proposed measures to control pollutants in storm water discharges during and after construction operations.

A Notice of Intent (NOI) Form (see attached NPDES Form) shall be completed and signed by the Contractor and the Owner. This Notice of Intent must be submitted by Contractor two days before start of construction. Submit the NOI to the following address:

Storm Water Notice of Intent
Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC – 228
P.O. Box 13087
Austin, TX 78711

The SWPPP is not to be submitted for EPA review, however the SWPPP shall be kept at the job site for assessment by EPA inspectors.

The EPA requires that regular weekly inspections and inspections after each storm be made of the storm water pollution measures. A record of all inspections shall be kept.

The SWPPP shall be maintained throughout the entire length of the project. If the pollution prevention measures are not working, the Contractor shall then be required to make adjustments in the measures to correct the problems.

The cost of the SWPPP shall be considered as part of the total base bid and no extra payments shall be made in the event changes in the plan need to be made.

Immediately prior to final acceptance of the project, the Contractor shall complete and sign a Notice of Termination (NOT) form. Following signing by the Owner, the NOT form shall be submitted to the EPA at the following address:

Storm Water Notice of Termination
Texas Commission on Environmental Quality
Storm Water & General Permits Team; MC – 228
P.O. Box 13087
Austin, TX 78711

(End of Section)

SECTION 02100 - SITE PREPARATION

PART 1 - GENERAL

1.01 Scope of Work

Provide site preparation as shown on the drawings, specified herein and discussed at the construction meeting. Work shall consist of, but is not limited to the following:

- A. Protection of all utilities and site improvements, including sanitary sewer, water, petroleum pipelines, natural gas lines, and electrical and telephone transmission lines.
- B. Clearing, grubbing, and legal disposal of all obstructions such as trees, stumps, hedges, other vegetation as designated on the plans, other accumulation of rubbish of whatever nature, and existing structures not otherwise provided for on the drawings.
- C. All trees shall be protected during all phases of construction.

PART 2 - EXECUTION

2.01 Protection

- A. Locate existing utilities; provide adequate protection and support during construction operations. If uncharted or incorrectly charted piping or other utilities are encountered during earthwork, consult utility Owner and Engineer immediately for directions as to procedure. Cooperate with Owner, and public and private utility companies to keep their services and facilities in operation. Repair damaged utilities to the satisfaction of utility owner at no cost to the owner or landscape architect.
- B. Protect improvements on site and along access routes; provide barricades, coverings, or other types of protection as necessary to prevent damage. Restore to original condition improvements damaged by the work.
- C. Trees and vegetation, designated to remain, shall be protected against unnecessary cutting, breaking, bruising, smothering by stockpiling excavated materials within drip line, or parking of vehicles within drip line. Provide temporary fences, tree wells, barricades or guards; repair or replace trees and vegetation damaged by construction operations.
- D. Maintain survey monuments, reference points, and monuments; notify Owner of disturbance to markers.

2.02 Site Clearing

- A. Remove trees, snags, shrubs, brush, heavy growths of grass, weeds and other vegetation, improvements identified by the owner as rubbish and debris, and obstructions that interfere with proposed construction.
- B. Trees designated to be removed shall be cut flush with the ground, stumps and roots having a diameter of two inches or larger, and root clusters shall be grubbed out to a depth of at least six (6) inches below ground surface.

2.03 Reserved

2.04 Debris Disposal

Remove cleared and grubbed material and other debris from site; do not burn debris, unless a permit is obtained from State and local agencies. Contractor shall obtain and pay for burn permits, if necessary.

(End of Section)

SECTION 02205 - EARTHWORK

PART 1 - GENERAL

1.01 SCOPE OF WORK:

Construct earth fills to the lines and grades shown on the drawings and as specified. Work shall consist of, but is not limited to, the following:

- A. Cut and fill as per the plans
- B. Placement, moisture control and compaction of earth fills

1.02 RELATED WORK SPECIFIED ELSEWHERE:

Testing and Laboratory Controls - - - - - Section 01410

Site Preparation - - - - - Section 02100

Turf Establishment - - - - - Section 02930

1.03 TEST REPORTS:

The Contractor will bear the cost of all testing requirements and will submit test reports from a commercial testing laboratory as specified herein and in the Conditions of the Contract.

1.02 MEASUREMENT AND PAYMENT:

The cost of furnishing all equipment, labor, and materials to prepare site, excavate, transport, place, and compact earth fills as per plans and specifications shall be included in the Bid Proposal.

PART 2 - PRODUCTS

2.01 UNCLASSIFIED EXCAVATION:

Unclassified excavation shall consist of all excavation, unless separately designated, within the limits of the work. Unclassified excavation includes all material encountered regardless of its nature or the manner in which it is to be excavated.

2.02 UNCLASSIFIED FILL:

Unclassified fill shall consist of all fill within the limits of the work. All suitable native materials removed in unclassified excavation, or similar imported materials, shall be used insofar as practicable as unclassified fill. Properly deposited, conditioned, and compacted fill is hereinafter referred to as "earthwork."

2.03 TOPSOIL: Shall be as follows:

- A. On-Site Topsoil: Topsoil shall consist of an average depth of six inches (6") of native surface soil left in place after the ground cover of herbaceous vegetation and other objectionable matter has been cleared as specified in Section 02100, "Site Preparation." Topsoil may be greater or less than the upper six inches (6") in depth. However, it must be removable without contamination by the subsoil or substratum or other objectionable matter that would render it as "unsuitable material" as described herein.

- B. Off-Site Topsoil: Topsoil obtained from off-site locations, if required, shall contain no or minimal amounts of sod, brush, roots, trash or other deleterious materials. Topsoil shall not be contaminated with any toxic or caustic material. The longest dimension of rock particles shall be 1/2". Topsoil mixtures prepared by manufacturer's of such materials shall contain a minimum of 25% composted organic material and the remainder being a sandy loam topsoil material. The organic material shall be completely composted and have a pH of 8.2 or greater before incorporation into the topsoil. The topsoil material shall be tested for pH percentage of organic material and toxic and caustic substances before being incorporated into the project. A sample of the proposed imported topsoil shall be provided by the Contractor and be approved by the Landscape Architect prior to using such soil.

2.04 IMPORTED FILL:

- A. Imported fill materials shall be used for the construction of earth embankment in the event that (1) the volume of unclassified excavation is less than the volume of fill required for earth embankment and/or (2) the condition of materials removed in unclassified excavation makes them unsuitable for use in the construction of earth embankment.
- B. The Contractor shall haul and place imported fill obtained from off-site sources as necessary to construct the embankment and various other details of the construction plans. All costs related to such imported fill will be included in the contract price, and no additional or separate payment for imported fill will be due the Contractor.
- C. A sample of the proposed imported fill must be provided by the Contractor and be approved by the Architect/Engineer. In general, imported material must be equal to or better than native material in quality and engineering characteristics. The Architect/Engineer may also require the Contractor to provide a material analysis test of the proposed fill.

2.05 SELECT MATERIALS:

Refer to Standard Specifications.

2.06 UNSUITABLE MATERIALS:

- A. Topsoil, select material, imported fill, or unclassified fill will be declared as "unsuitable" by the Owner if, in his opinion, any of the following conditions or matter and particles are present to a degree that is judged detrimental to the proposed use of the material.
 1. Moisture
 2. Decayed or undecayed vegetation
 3. Hardpan clay, heavy clay, or clay balls
 4. Rubbish
 5. Construction rubble
 6. Sand or gravel
 7. Rocks, cobbles, or boulders
 8. Cementious matter
 9. Foreign matter of any kind
- B. Unsuitable materials will be disposed of as "waste" as specified in Section 02100.

- C. Wet Material: If fill material is unsatisfactory for use as embankment solely because of high moisture content, the Architect/Engineer may grant the Contractor permission to process the material to reduce the moisture content to a usable optimum condition.

PART 3 - EXECUTION

3.01 SITE PREPARATION:

In general, "site preparation," as specified in Section 02100, shall be performed in advance of grading and earthwork operations and shall be completed over the entire area of earthwork operations.

3.02 TOPSOIL:

- A. The removal and storage of topsoil shall occur after site preparation is complete and before excavation and embankment construction begin. Likewise, topsoil will be replaced after excavation and embankment construction are complete.
- B. Removal: Topsoil shall be stripped to an average depth of six inches (6") from areas where excavation and embankment construction are planned. Topsoil may be obtained from greater depths if it is uncontaminated by the substratum and it is of good quality, in the opinion of the Architect/Engineer.
The Owner has provided imported top soils stockpile for use on site; verify existing quantity is adequate for site earthwork operations.
- C. Storage: Topsoil shall be stored in stockpiles conveniently located to areas that will later receive the topsoil. Stockpiles shall be out of the way of earthwork operations in locations approved by the Owner or Architect/Engineer. Stored topsoil shall be kept separate from other excavated materials and shall be protected from contamination by objectionable materials that would render it unsuitable.
The Owner has provided imported top soils stockpile for use on site; provide adequate protection to not contaminate existing stockpile.
- D. Timing: Topsoil will not be replaced (deposited) until construction activities are complete that would create undesirable conditions in the topsoil, such as overcompaction or contamination. Trenching for items such as electrical conduit and irrigation pressure lines must be complete before topsoil replacement may begin.
- E. Replacement: Topsoil will be deposited in a single layer or lift. It will be placed, processed, compacted, and graded to leave a finished layer of topsoil not less than three inches (3") in depth. Unless otherwise indicated, **topsoil will be replaced over all areas of earthwork** (including slopes), except where pavement is planned.
- F. Grading: Topsoil will be final graded to the elevations shown on the plans. Unless otherwise indicated, the final plane of compacted topsoil will be between 0.10 foot and one inch (1"0 below adjacent paved surfaces. Fine grading will be accomplished with a weighted spike harrow, weighted drag, tractor box blade, light maintainer, or other acceptable machinery. Grading operations and equipment will be such that topsoil does not become overcompacted. Bulldozer blades and front-end loader buckets are not acceptable devices for topsoil grading operations.

- G. Acceptability: Finished areas of topsoil are satisfactory if they are true to grade, true in plane, even in gradient (slope), uniform in surface texture, and of normal compaction. Areas of loose granular pockets or of overcompacted soils are not acceptable and will be reworked. Finished areas will promote surface drainage and will be ready for turf grass planting.

3.03 UNCLASSIFIED EXCAVATION:

- A. All excavated areas shall be maintained in a condition to assure proper drainage at all times, and ditches and sumps shall be constructed and maintained to avoid damage to the areas under construction.
- B. Surplus Material:
 - 1. Surplus excavation is that quantity of material that may be left over after the grading plan is executed, and all earthwork operations, including excavation, embankment construction, topsoil replacement, and final grading, are completed. Unless otherwise specified, the Contractor shall dispose of surplus material as "waste" as specified in Section 02100.
 - 2. In certain cases, if the on-site excavation and embankment quantities are not balanced and there is a surplus of excavated material, the Architect/Engineer may permit the Contractor to "waste" the surplus by constructing additional embankment in an approved location. No additional payment for such work would be due that Contractor.
- C. Excavation in Rock: The use of explosives will not be permitted unless specifically permitted in writing by the Owner. Unless otherwise indicated on the plans, excavation in solid rock shall extend six inches (6") below required subgrade elevation for the entire width of the area under construction and shall be backfilled with suitable materials as indicated on the plans.

3.04 EARTH EMBANKMENT:

- A. Earth embankment is defined as embankment composed of suitable materials removed in unclassified excavation and/or imported fill. The construction of embankment includes preparing the area on which fill is to be placed and the depositing, conditioning, and compaction of fill material.
- B. General: Except as otherwise required by the plans, all embankment shall be constructed in layers approximately parallel to the finished grade of the graded area, and each layer shall be so constructed as to provide a uniform slope as shown on the grading plan. Embankments shall be constructed to correspond to the general shape of the typical sections shown on the plans, and each section of the embankment shall correspond to the detailed section or slopes established by the drawings. After completion of the graded area, embankment shall be continuously maintained to its finished section and grade until the project is accepted.
- C. Preparation: Prior to placing any embankment, all preparatory operations will have been completed on the excavation sources and areas over which the embankment is to be placed. Stump holes or other small excavations in the limits of the embankments shall be backfilled with suitable material and thoroughly tamped by approved methods before commencing embankment construction. The surface of the ground, including plowed, loosened ground, or surfaces roughened by small washes or otherwise, shall be restored to approximately its original slope by blading or other methods, and, where

- indicated on the plans or required by the Architect/Engineer, the ground surface, thus prepared, shall be compacted by sprinkling and rolling.
- D. Scarification: The surface of all areas and slopes over which fill is to be placed, other than rock, shall be scarified to a depth of four inches (4") to six inches (6") to provide a bond between the existing surface and the proposed embankment. Scarification shall be accomplished by plowing, discing, or other approved means. The material that has been loosened shall be recompacted with the new embankment.
 - E. Benching: Scarification is normally adequate for sloping surfaces. However, in certain cases where fill is to be placed against hillsides or existing embankment with slopes greater than four to one (4:1), the Architect/Engineer may direct the Contractor to key the fill material to the existing slopes by benching. A minimum of two feet (2') normal to the slope shall be removed and recompacted to insure that the new work is constructed on a firm foundation free of loose or disturbed material.
 - F. Depositing: Fill material shall be placed in horizontal layers or lifts, evenly spread, not to exceed eight inches (8") in loose depth before conditioning and compaction. Unless otherwise permitted, each layer or fill material shall cover the length and width of the area to be filled and shall be conditioned and compacted before the next higher layer of fill is placed. Adequate drainage shall be maintained at all times.
 - G. Watering: At the time of compaction, the moisture content of fill material shall be such that the specified compaction will be obtained, and the fill will be firm, hard, and unyielding. Fill material which contains excessive moisture shall not be compacted until it is dry enough to obtain the specified compaction.
 - H. Compacting: Each layer of earth fill shall be compacted by approved tamping or sheepsfoot rollers, pneumatic tire rollers, or other mechanical means acceptable to the Architect/Engineer. Hand-directed compaction equipment shall be used in areas inaccessible to vehicular compactors.
 - I. Grading: Embankments shall be constructed in proper sequence and at proper densities for their respective functions. All embankment serves in one capacity or another as subgrade (e.g., under topsoil, under concrete and asphalt pavement, under structures, etc.). Accordingly, the upper layer of embankment shall be graded to within plus or minus 0.10 foot of proper subgrade elevation prior to depositing topsoil, and prior to the construction of pavements, slabs, etc.

3.05 SELECT EMBANKMENT:

Select embankment is defined as embankment constructed of select fill material. In general, it is constructed the same as earth embankment, except as described below.

- A. Subgrade: In cases where select fill is to be placed on a subgrade surface that is proposed to be within 0.50 foot in elevation of the existing surface grade, the top six inches (6") of soil shall be stripped and removed as unsuitable waste. A minimum of six inches (6") of fill comprising the subgrade for the select embankment shall be prepared and compacted as "earth embankment under select embankment" (see Density Control paragraph).
- B. Mixing: If the select fill is non-uniform in material composition, the Contractor may elect to mix with discing or pulverizing machinery to ensure that it meets the specified density and material analysis testing requirements. During mixing, care shall be taken not to disturb the subgrade nor to incorporate the subgrade material into the select material. Mixing would occur between the depositing and

watering steps described in the embankment construction process. Also, see "Testing Requirements" under "SELECT MATERIALS" of the PRODUCTS section of this specification.

- C. It is the sole responsibility of the Contractor to provide a select material of such quality that it can be "set-up" and "finished" to provide a stable support for the hot mix asphaltic concrete pavement. In addition to the density requirements, the subgrade must have sufficient strength at time of paving to support the proposed hot mix paving operation including paving machine, haul trucks, and rollers. If significant deterioration of the finished subgrade occurs during paving operations, paving shall be suspended until the required remedial action is taken by the Contractor. Approval of submitted samples of select material by the Architect/Engineer does not relieve the Contractor of this responsibility. All irregularities, depressions, or weak spots which develop in the subgrade shall be corrected prior to paving by scarifying the areas affected, adding suitable material as required, reshaping and recompacting by sprinkling and rolling. Should the select material subgrade, due to any reason or cause, lose the required stability, density, or finish before surfacing is complete, it shall be recompacted and refinished at the sole expense of the Contractor.

3.06 DENSITY CONTROL:

- A. Earth Embankment in General: Earth embankment shall be compacted in lifts at eighty-eight percent (88%) to ninety-two percent (92%) of Standard ASTM D698 with plus or minus two (2) percentage points of optimum moisture content.
- B. Earth Embankment Under Structures and Pavement: The top six inches (6") of natural earth comprising the subgrade for structural slabs or for areas of pavement shall be ninety-two percent (92%) to ninety-eight percent (98%) of Standard AASHTO Density with the moisture content of two percent (2%) to four percent (4%) above optimum. Sidewalks six feet (6') and less in width and individual paved areas less than one hundred fifty (150) square feet in surface area are excluded from this requirement.
- C. Earth Embankment Under Select Embankment: The top six inches (6") of earth embankment under select embankment shall be ninety-two percent (92%) to ninety-eight percent (98%) of Standard AASHTO Density with the moisture content at two percent (2%) to four percent (4%) above optimum.
- D. Select Embankment: The entire depth of select embankment shall be compacted in lifts to a minimum ninety-five percent (95%) of Standard AASHTO Density with the moisture content plus or minus two percent (2%) of optimum. See "Testing Requirements" under "SELECT MATERIALS" of the PRODUCTS section of this specification.

3.06 MOISTURE MAINTENANCE:

The specified moisture content shall be maintained in all embankments that are to function as subgrade for structures, areas of pavement, or for select embankment. After completion of the embankment, the Contractor shall prevent excessive loss of moisture in the embankment by sprinkling as required. Loss of moisture in excess of two percent (2%) below optimum in the top twelve inches (12") of the fill will require that the top twelve inches (12") of the embankment be scarified, wetter, and recompacted prior to placement of the structure, select fill or pavement. If desired, the Contractor may place an asphalt membrane of emulsified or cutback asphalt over the completed embankment and thus eliminate the sprinkling requirement.

3.07 TESTING:

Spot field tests of embankment densities shall be by the Owner at the place and time of their choosing. Any area not meeting density control requirements shall be immediately excavated, reconstructed, and retested, at the expense of the Contractor, until satisfactory results are obtained. Testing laboratory shall test all soils, fill material, natural topsoils and manufactured topsoil mixtures for pH, organic content, and toxic and/or caustic substances.

3.08 BALANCING:

If it is advantageous to the Owner and/or the Contractor and if it is agreeable to both parties, finished grades may be adjusted to achieve balance between the volumes of excavation and fill required for embankment. The intent of such a change would be to reduce or preclude the requirement of the Contractor having to import fill or to haul off surplus excavation and to improve the site development for the Owner. Any such change that might be made to the grading plan would result only through prior approval, instructions and plan revisions by the Owner or Architect/Engineer, and agreement with the Contractor. No additional payment of compensation would be due the Contractor for such a change or for any delays in the job that might result from such a change.

3.10 LINES AND GRADES:

- A. Final lines, grades, and elevations shall be established on the site by Contractor and approved by the Owner. If any stakes showing final lines and grades are removed or destroyed by the contractor, replacement of the stakes shall be at the Contractor's expense.
- B. All filled and excavated areas shall be brought to final line and grade within plus or minus 0.1 foot by rough grading. Grades not otherwise shown shall be uniform levels or slopes conforming to adjacent graded areas.
- C. Any and all blue topping that may be required shall be done at Contractor's expense.

3.11 COLD WEATHER PROTECTION:

Protect excavated surfaces which will receive fill from freezing when atmospheric temperature is less than 35 degrees Fahrenheit. Protection may consist of a loose soil layer, mulch, or other approved means. The protective layer shall be removed prior to placement of fill.

3.13 EROSION CONTROL:

Until final completion and acceptance of the project the Contractor shall be responsible for erosion control and shall correct and remedy any areas affected by erosion prior to final completion. After final acceptance of the work the Owner shall be responsible for erosion control.

3.14 FINE GRADING:

The Contractor shall be responsible for obtaining the City's approval on all grading. Do not leave stones or materials in excess of one-half inch (1/2") in the longest dimension. Finish grade shall be within a tolerance of \pm .04 foot of plan grades/elevations.

(End of Section)

SECTION 02210 - UNCLASSIFIED EARTH EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. All material, labor, equipment, tools, and superintendence necessary to furnish and install unclassified earth excavation, including lake and mass grading of site including ballfields, paved areas and drainage swales.

1.02 RELATED SECTIONS

- A. Reserved

1.03 REFERENCES

- A. ASTM D-2487 - Unified Soil Classification System.
- B. ASTM D-4318 - Liquid Limit, Plastic Limit, and Plasticity Index of Soils Test.
- C. ASTM D-1140 - Materials Greater than #200 Sieve.
- D. ASTM D-698 - Moisture Density Relations of Soils and Soil Aggregate Mixtures.
- E. ASTM D-2992 - Density in Places by Nuclear Methods Shallow Depth Test.

1.04 SITE CONDITIONS

- A. Existing Conditions.

Site is subject to frequent inundating rains, and may be subject to localized flooding and surface flows. Site is subject to groundwater conditions which may impede work sequence.

PART 2 PRODUCTS

Not included in this section.

PART 3 EXECUTION

3.01 PREPARATION

- A. All areas where cut/fills are to occur shall be cleared and grubbed of debris, timber and stripped of topsoil. Coordinate tree removal with the owner.
- B. Subgrade. Compact subgrade in accordance with item 3.00.

3.02 INSTALLATION

- A. Excavation. Perform excavation to line, grade, and alignment as shown on plans. All excavated spoil to be placed and compacted in fill areas or as directed by Owner.
- B. Depth of Backfill. Place in level, uniform layers. Each layer shall have a uniform loose thickness of not more than eight (8) inches and/or a maximum compacted thickness of not more than six (6) inches, whichever is less.

- C. Moisture Content. Prepare and bring each layer of backfill to within optimum to (+) 4% for clay soils per ASTM 698. Where moisture fails to meet specified limits, rework, recompact, and retest failed areas.
 - 1. High Moisture Content: Should moisture content exceed established maximum moisture content, spread, disk, aerate, and/or otherwise cause the moisture content to be reduced to within uniform maximum allowable limits.
- D. Compaction. Compact soils to a uniform density per ASTM D698 as follows:
 - 1. Trench, paved, dam and structure areas 95% to 98%.
 - 2. Ballfield and other areas not to receive hard improvements - 90% to 95%. Do not over compact.
- E. Benching. Provide benching. 18" H x 6" V.
- F. Excess Spoil: Excess spoils shall be placed in areas as directed by the Owner.
- G. Stock Pile. Stock pile sufficient clay to allow for lining of the lake area.

3.03 FIELD QUALITY CONTROL

- A. Provide one (1) passing density/moisture test every 10,000 square feet for each lift of backfill.
- B. Line/grade. Cut/fill shall be as follows:
 - 1. Ballfields, drainageways, playground areas (+/-) 0.10 feet vertical and (+/-) 2.0 feet horizontal with no ponding. Allow 0.30 feet vertically for topsoil.
 - 2. Dam and subgrade for buildings grade to (+/-) 0.20 feet vertical and (+/-) 1.0 feet horizontal. Allow 0.30 feet vertically for topsoil.
 - 3. Subgrade for paved areas - grade vertically and (+/-) 1'-0 horizontally.
 - 4. Lake area, inside wetted perimeter (+/-) 0.30 feet vertical of proposed grade and (+/-) 2.0 feet horizontal.
 - 5. Other areas - (+/-) 0.30 feet vertical and (+/-) 5.0 feet horizontal or as directed by Owner. Allow 0.30 feet vertically for topsoil.

3.04 PROTECTION

- A. Provide erosion control.

(End of Section)

SECTION 02225 -- Excavating, Backfilling, and Compacting for Utilities

PART 1 GENERAL

1.01 SECTION INCLUDES

All excavation, backfilling, and compaction required for utility work.

1.02 REFERENCES

- A. ASTM D-698 - Moisture Density Relations of Soils and Soil Aggregate Mixtures.
- B. ASTM D-2922 - Density in Places by Nuclear Methods Shallow Depth Test.

1.03 SITE CONDITIONS

A. Existing Conditions

The Architect is not aware of any conditions existing on-site which adversely impact construction of the proposed elements.

PART 2 PRODUCTS

Not included in this section.

PART 3 EXECUTION

3.01 PREPARATION

All areas where utilities and structures are to be placed shall be cleared of debris and timber. Disposal shall be off-site. Coordinate tree removal with the Engineer.

3.02 INSTALLATION

- A. Excavation. Perform excavation to line, grade, and alignment as shown on plans.
- B. Timeliness. Trench backfill shall be of sufficient depth to insure that the work constructed under this Contract and existing adjacent utilities and structures are stabilized for all conditions that may exist and/or arise. Contractor shall not lay more pipe on any single day than trench backfill can be placed and compacted, and/or such that stabilization of the work performed and surrounding existing utilities and structures cannot be achieved.

- C. Depth of Backfill. Place backfill in level, uniform layers. Each layer shall have a uniform loose thickness of not more than ten (10) inches and/or a maximum compacted thickness of not more than six (6) inches, whichever is less.
- D. Moisture Content. Prepare and bring each layer of backfill to within optimum to (+) 4% for clay soils and to within (+/-) 3% for sands per ASTM 698. Where moisture fails to meet specified limits, rework, recompact, and retest failed areas.
 - 1. High Moisture Content: Should moisture content exceed established maximum moisture content, Spread, disk, aerate, and/or otherwise cause the moisture content to be reduced to within uniform maximum allowable limits.
 - 2. Low Moisture Content: Should moisture content not reach established minimum moisture content, disk, sprinkle, water, mix, and/or otherwise bring the moisture content to within uniform minimum allowable limits.
- E. Density. Compact all backfill to within 95% to 100% of maximum dry density in accordance with ASTM D-698.

3.03 ROCK AND RUBBLE

Rock and rubble shall not be used for backfill.

3.04 FIELD QUALITY CONTROL

Provide one (1) passing density/moisture test every 100 linear feet of trench for each lift of backfill. Compaction shall be 95% to 100% per ASTM D-698.

3.05 LINE AND GRADE

All backfill shall be regraded to (+/-) 0.04 feet of grade or sub-grade.

3.06 PROTECTION

- A. Provide erosion control.
- B. Provide trench safety measures in compliance with trench safety program.
- C. Perform the Pollution Prevention Plan procedures as delineated in the plans.

(End of Section)

SECTION 02226 -- Excavating, Backfilling, and Compacting for Paving

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. All excavation, backfilling, and compaction required for paving work

1.02 REFERENCES

- A. ASTM D-2487 - Unified Soil Classification System
- B. ASTM D-4318 - Liquid Limit, Plastic Limit, and Plasticity Index of Soils Test
- C. ASTM D-1140 - Materials Greater than #200 Sieve
- D. ASTM D-698 - Moisture Density Relations of Soils and Soil Aggregate Mixtures
- E. ASTM D-2922 - Density in Places by Nuclear Methods Shallow Depth Test

1.03 SITE CONDITIONS

- A. Existing Conditions
The Architect is not aware of any conditions existing on-site which adversely impact construction of the proposed elements.

PART 2 PRODUCTS

Not included in this section.

PART 3 EXECUTION

3.01 PREPARATION

All areas where paving is to be placed shall be cleared of debris and timber. Disposal shall be off-site. Coordinate tree removal with the Engineer.

3.02 INSTALLATION

- A. Excavation. Perform excavation to line, grade and alignment as shown on plans.
- B. Timeliness. Trench backfill shall be of sufficient depth to insure that the work constructed under this Contract and existing adjacent utilities and structures are stabilized for all conditions that may exist and/or arise. Contractor shall not lay more pipe on any single day than trench backfill can be placed and compacted, and/or such that stabilization of the work performed and surrounding existing utilities and structures cannot be achieved.
- C. Depth of Backfill. Place backfill in level, uniform layers. Each layer shall have a uniform loose thickness of not more than ten (10) inches and/or a maximum compacted thickness of not more than six (6) inches, whichever is less.

- D. Moisture Content. Prepare and bring each layer of backfill to within optimum to (+) 4% for clay soils and to within (+/-) 3% for sands per ASTM 698. Where moisture fails to meet specified limits, rework, recompact, and retest failed areas.
 - 1. High Moisture Content: Should moisture content exceed established maximum moisture content, spread, disk, aerate, and/or otherwise cause the moisture content to be reduced to within uniform maximum allowable limits.
 - 2. Low Moisture Content: Should moisture content not reach established minimum moisture content, disk, sprinkle, water, mix, and/or otherwise bring the moisture content to within uniform minimum allowable limits.
- E. Density. Compact all backfill to within 95% to 100% of maximum dry density in accordance with ASTM D698.

3.03 ROCK AND RUBBLE

Rock or rubble shall not be used as backfill material within 4'0" of sub-grade elevation.

3.04 FIELD QUALITY CONTROL

Provide one (1) passing density/moisture test for each 10,000 square feet of area for each lift of backfill.

3.05 LINE AND GRADE

All fill and excavation to be graded to sub-grade.

3.06 PROTECTION

- A. Provide erosion control.
- B. Provide trench safety measures in compliance with trench safety program.
- C. Perform the Pollution Prevention Plan procedures as delineated in the plans.

(End of Section)

SECTION 02396 – SPREAD AND CONTINUOUS FOOTINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Furnish all labor, materials, services and equipment as required in conjunction with or properly incidental to excavation and installation of spread and continuous footings as described herein and/or as shown on the Drawings.
- B. Related Documents:
 - 1. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1, General Requirements, apply to Work of this section.
- C. Related Sections:
 - 1. Section 03200 – Concrete Reinforcement.
 - 2. Section 03300 – Cast-in-Place Concrete.
 - 3. Geotechnical Investigation Report: Furnished by Owner.

1.2 REFERENCES

- A. American Concrete Institute (ACI).
 - 1. ACI 301, Specifications for Structural Concrete for Buildings.
 - 2. ACI 304R, Guide for Measuring, Mixing, Transporting and Placing Concrete.
 - 3. ACI 305R, Hot Weather Concreting.
 - 4. ACI 306R, Cold Weather Concreting.
 - 5. ACI 311, ACI Manual of Concrete Inspection.
 - 6. ACI 309, Standard Practice for Consolidation of Concrete.
 - 7. ACI 311, ACI Manual of Concrete Inspection.
 - 8. ACI 318, "Building Code Requirements for Reinforced Concrete".

1.3 QUALITY ASSURANCE

- A. Installation Tolerances:
 - 1. Maximum lateral variation off of centerlines: 2".
 - 2. Plan Dimensions: Plus 3", minus 1/2".
 - 3. Thickness: Not smaller than scheduled sizes.
 - 4. Top of Footing Elevation: Plus 0", minus 3".

1.4 SCHEDULING/SEQUENCING

- A. Coordinate Work of this Section with work of other Sections as required to properly execute the Work and as necessary to maintain satisfactory progress of the work of other Sections.

- B. Schedule footing excavations such that reinforcing and concrete can be placed immediately after excavations are completed and inspected.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Reinforcement: Refer to Section 03200.
- B. Concrete: Refer to Section 03300.

PART 3 EXECUTION

3.1 EXCAVATION

- A. Spread and continuous footings shall extend to and penetrate bearing materials shown of the Drawings.
- B. The exposed subgrade soils shall be examined in the field by a geotechnical engineer or the testing laboratory to verify the strength and bearing capacity of the soils.
- C. Excavations and footings shall be the size and shape as shown on the Drawings. The bottom of each excavation shall be level, undisturbed, free of water, caving material or any other foreign substance.

3.2 FABRICATION AND PLACING OF REINFORCING

- A. All steel reinforcing mats shall be completely fabricated in a rigid fashion in order to permit expeditious placement into the excavation with a minimum time delay.
- B. Accurately place reinforcement in excavations, maintaining specified coverage. Secure to prevent displacement during concreting.

3.3 PLACING OF CONCRETE

- A. All concrete shall be placed so as to prevent segregation. Do not allow concrete to free fall over five (5) feet; provide tremie, chutes or other means of conveyance when drop exceeds this amount.
- B. Concrete shall be placed as soon as practical after the excavation has been completed. If concrete is not to be placed within eight hours, a 3 inch thick lean concrete "working mat" shall be placed over the bearing surface of the exposed subgrade soils within four hours after the excavation has been completed. The "working mat" shall not extend above the bottom elevation of the spread or continuous footing.

3.4 FIELD QUALITY CONTROL

- A. Soils Testing Laboratory shall inspect each footing excavation to determine that proper bearing stratum is obtained and utilized for bearing and that excavations are properly clean and dry before placing concrete.
- B. Furnish complete footing log showing location, elevation of top of bearing stratum, footing size and depth, condition of the material, excavation properly clean and dry before placing concrete, reinforcement in compliance with the Contract Documents and any and all observed irregularities, deficiencies or deviations from the Contract Documents.
- C. Footing excavation shall be scheduled such that the concrete can be placed immediately after inspection.

(End of Section)

SECTION 02750 - CONCRETE PAVING AND SIDEWALKS

PART 1 - GENERAL

- 1.01 SCOPE:
This section covers the requirements for Portland cement concrete sidewalks, handicap ramps and exterior plazas.
- 1.02 WEATHER LIMITATIONS:
Construct sidewalk when atmospheric temperature is above 40° F., when the underlying base is dry and not frozen and when weather is not rainy.

PART 2 - PRODUCTS

- 2.01 PORTLAND CEMENT CONCRETE:
Portland cement concrete shall be in accordance with Section 03300. Concrete shall have a 28-day compressive strength of 3000 pounds per square inch.
- 2.02 CURING AGENTS:
- A. Sheet materials shall conform to ASTM C171-69.
 - B. Liquid membrane-forming compounds shall conform to ASTM C309-74, Type 2, Class B.
- 2.03 PREFORMED EXPANSION JOINT FILLER:
- A. Preformed expansion joint filler shall conform to ASTM D1752-67 or D1751-73.
- 2.04 FORMS:
- A. Forms shall be of metal or wood. Reusable forms are preferred. They shall be suitable in cross section, depth, and strength to resist springing during depositing and consolidating the concrete.
 - B. Forms shall not vary from a straight line more than 1/8" in any 10' long section in either a horizontal or vertical direction.
 - C. Flexible or curved forms shall be used for radius forming.
 - D. Wood forms shall be nominal 2" thick and shall also be free from warp, twist, loose knots, splits or other defects.
 - E. Metal keyways shall be shaped from metal of a minimum 18 gauge thickness and shall be free from kinks.
- 2.05 REINFORCEMENT:
- A. Reinforcement steel shall be used where called for on the Drawings.
 - B. Welded steel wire fabric shall conform to ASTM A185-73.

PART 3 - EXECUTION

3.1 PREPARATION OF GRADE:

- A. After grading and compacting, the grade shall be trimmed to correct elevation, extending the work at least one foot beyond each edge of the proposed surfacing.
- B. Compaction
 - 1. Compaction shall be performed with hand or mechanical equipment well-suited to the material being compacted.
 - 2. Material shall be moistened or aerated as necessary.

3.02 SETTING FORMS:

- A. Forms shall be firmly in contact with the grade for their whole length.
- B. Forms shall be staked in place with not less than 3 pins for each 10' section.
- C. Forms shall not deviate from true line by more than ¼" at any point.
- D. The alignment and grade elevations of the forms shall be checked and corrections made by the Contractor immediately before placing the concrete.

3.03 PLACING REINFORCEMENT:

- A. Reinforcement shall be free from dirt, oil, rust, scale or other substances that prevent the bonding of the concrete to the reinforcement.
- B. Reinforcement shall be accurately and securely fastened in place with suitable supports and ties.
- C. Reinforcement shall be placed in the middle of the slab.
- D. Steel shall not extend through contraction or expansion joints but shall be stopped clear of joint by not less than 2" and not more than 4". The same clearances shall apply between the slab edges and extreme longitudinal reinforcement.
- E. Laps, where necessary, shall be not less than the spacing of the wires, or 30 bar diameters.

3.04 MIXING CONCRETE:

- A. Ready-mixed concrete shall be mixed and delivered in accordance with the requirements of ASTM C94-81.

3.05 PLACING CONCRETE:

- A. Concrete shall be deposited on the grade without segregation of the materials.
- B. Placing shall be continuous between transverse joints without the use of intermediate bulkheads.

- C. Concrete shall be thoroughly consolidated against and along the faces of all forms and along the full length and on both sides of all joint assemblies by means of vibrators inserted in the concrete.

3.06 STRIKE OFF:

- A. Following the placing of the concrete, it shall be struck off to conform the cross section shown on the Drawings.

3.07 JOINT:

- A. Joints shall be constructed of the type and dimensions, and at the locations required by the Drawings. Expansion, contraction and construction joints shall be protected from the intrusion of injurious foreign material until sealed.
- B. Dummy grooves and contraction joints shall be cut to depth indicated on the drawings.
- C. Expansion joint filler shall be continuous from form to form and shaped to the subgrade.
- D. A keyed construction joint shall be installed whenever the placing of concrete is suspended for more than 30 minutes and at the end of each day's work. Transverse construction joints shall be placed only at dummy groove locations.

3.08 FINAL STRIKE OFF:

- A. The sequence of operations shall be the strike off and consolidation, floating and removal of laitance, straight edging and final surface finish. In general, the addition of superficial water to the surface of the concrete to assist in finishing operations will not be permitted.
- B. As soon as the concrete has been placed, it shall be struck off and screed.
- C. After the concrete has been struck off and consolidated, it shall be further smoothed, trued, and consolidated by means of either a hand operated longitudinal float longer than the sidewalk width and 6" width, properly stiffened or a mechanical float.
- D. After the floating has been completed and the excess water removed, but while the concrete is still plastic, depressions shall be immediately filled with freshly mixed concrete, struck off, consolidated and refinished. High areas shall be cut down and refinished.
- E. The surface shall be textured with a fiber-bristle broom moistened with clear water. The corrugations produced shall be uniform in appearance and approximately 1/32" in depth. The corrugations shall be perpendicular to the length of the sidewalk.
- F. The edges of the sidewalk along each side and expansion joint shall be finished with an edger having a radius of 1/8" and a horizontal surface face of 4".
- G. At concrete sidewalks called to receive exposed aggregate finish, the mentioned aggregate shall match size, color and appearance of existing aggregate.

3.09 SURFACE TEST:

- A. The finished surface shall be tested with a 10' straightedge.
- B. Unhardened concrete shall be protected from rain and flowing water.
- C. Equipment and materials needed for adequate curing and protection of the concrete shall be on hand before concrete placement begins.
- D. Protection shall be provided as necessary to prevent cracking of the pavement due to temperature changes during the curing period.
- E. If the selected method of curing does not afford the proper curing and protection against concrete cracking, the damaged pavement shall be removed and replaced and another method of curing shall be employed as directed by the Owner.
- F. Curing Methods
 - 1. Impervious Sheeting
 - a) The entire exposed concrete surface shall be wet with a fine spray of water and then covered with the sheeting material. Sheeting shall be securely anchored.
 - b) Sheets shall overlap each other at least 12".
 - 2. Liquid Membrane Curing
 - 3. Curing compound shall be applied in two coats at right angles to each other at a rate of one gallon per 200 square feet for both coats.
 - 4. The concrete shall not be allowed to dry before the application of the membrane.
 - 5. Joints to be sealed shall be cured by inserting moistened paper or fiber rope or covering with waterproof paper prior to application of the curing compound in a manner to prevent the curing compound from entering the joint.
 - 6. Any area covered with curing compound and damaged during the curing period shall be resprayed.

3.10 REMOVING FORMS:

- A. Forms shall not be removed from freshly place concrete until it has set for at least 12 hours.
- B. Forms shall be removed carefully so as to avoid damage to the sidewalk.
- C. Sides of the slab shall be cured as outlined in Paragraph 3.11.
- D. Major honeycombed areas will be considered as defective work and shall be removed and replaced at the Contractor's expense.

3.11 Sealing Joints

- A. General
 - 1. Joints shall be sealed as soon after completion of the curing period as feasible.
 - 2. Just prior to sealing, each joint shall be thoroughly cleaned of all foreign material.
 - 3. The concrete at the joint shall be surface-dry and the ambient temperature shall be above 50° F., at the time of application.

4. The joint sealer shall not spill over the joint onto adjacent surfaces.
 5. Prime joint when recommended by sealant manufacturer.
 6. Mix and apply sealant as recommended by sealant manufacturer.
- B. Expansion Joints
1. Place bond breaker tape over filler.
 2. Fill joint with sealer to within 1/8" of surface.
- C. Isolation Joints
1. Place bond breaker on bottom of 1/4" joint.
 2. Fill joint with sealer to within 1/8" of surface.

(End of Section)

SECTION 02870 – SITE FURNISHINGS AND MATERIALS

PART I - GENERAL

- 1.01 SCOPE: Furnish all labor, equipment, materials and incidentals necessary to assemble and install miscellaneous site furnishings and/or materials to the site.
- 1.02 SUBMITTALS: The Contractor shall supply shop drawings and product data sheets for approval.
- 1.03 QUALITY ASSURANCE
 - A. Codes and Standards: All “accessible” site furnishings shall comply with the current Texas Accessibility Standards (TAS) of the Architectural Barriers Act, Article 9102, Texas Civil Statutes (512) 453-3211.
 - B. Warranty: Provide manufacturer’s written warranty prior to final application for payment.
 - C. All manufactures must provide ISO 14001 certification as required.

PART 2 – PRODUCTS

- 2.01 As per plans

PART 3 - EXECUTION

- 3.01 GENERAL: All items shall be assembled and installed as recommended by the manufacturer and located as shown on the plans or as directed by the Landscape Architect.
- 3.02 PROTECTION: Contractor shall be responsible for protection of unfinished work and shall erect temporary signage and barriers as necessary to prevent users from utilizing unfinished equipment.

(End of Section)

SECTION 02871 – Shade Shelter

Note: Shelter Equipment shall be delivered to the site at no cost to the contractor. All installation and installation materials furnished by contractor.

CUSTOM MARANA MODEL 16'X97'-5" SPECIFICATIONS

Dimensions:

Roof Dimensions: 16'-0"x 97'-5"

Column Dimensions (center to center) Varies

Minimum Clearance @ Lower Roof: 9'-0"

Roof Pitch: 2:12 pitch

Square Feet Under Roof: ±2,672

Columns shall be 8"x 8" steel tube, .188" minimum wall thickness.

All beams shall be structural steel tube sized according to engineering.

All bolts shall be A-307 or A-325 and hidden at all connections.

Roofing shall be 24 gauge 18" Standing Seam steel pre-cut and pre-finished with ribs running with the slope of the roof.

Trim shall be 24 gauge pre-finished to match roofing.

Fascia shall be tube steel.

Open or welded "C" channel, "I" beams, "S" or "Z" purlins or angle iron shall not be allowed.

STANDARD SPECIFICATIONS

w/ TRUZINC RICH PRIMER & SUPER DURABLE POWDER COAT PAINT

GENERAL:

1. All structures shall be designed and fabricated to the IBC (Latest Edition) or current local building code with standard load designs of the greater value of 20# per S.F. minimum live load and 100 mph sustained wind load or site specific conditions and the applicable zone for seismic loads.

2. All members shall be designed according to the "American Institute of Steel Construction (AISC) specifications and the American Iron and Steel Institute (AISI) specifications for cold-formed members.

3. All fabrication welds shall be in strict accordance with the structural welding code of the American Welding Society (AWS) specifications. All structural welds shall be in compliance with the requirements of "Pre-qualified" welded joints. All welding shall conform to ASTM A-233 series E-70XX electrodes - low hydrogen. *Field welding shall not be required.*

4. When required, after award of bid, the shade structure manufacturer shall submit structural calculations, sealed by a registered engineer in the state in which the structure is to be erected for review and approval by the approving agency.

5. Manufacturer qualifications: All manufacturers shall have a minimum of (20) twenty years experience in the fabrication of tubular steel shade structures. Shade structure and kiosk fabrication shall be the manufacturer's primary business. Manufacturer shall

have fabricated similar structures to that which is specified. All non-specified manufacturers shall submit complete shop drawings indicating type, size & gauge of material used, with detailed connections to the specifying agency or design firm at least 10 days prior to bid opening for review and written pre-approval. All bids submitted without prior approval will be rejected.

FOOTINGS & COLUMNS:

1. Footings shall be structurally engineered by the structure manufacturer to meet local codes and site conditions. (Sample footing drawings shall be made available to the contractor or owner from the manufacturer). When required for structure installation, anchor bolts shall be supplied by the owner / contractor. Columns shall be ASTM 500 grade B. Concrete footing rebar (if required) shall be ASTM A-615 grade 40 #4 bars & smaller, grade 60 #5 bars & larger. Concrete shall be 5 sack mix "Portland" cement. Maximum slump shall not exceed 4". Concrete compressive strength shall be a minimum of 2500 psi @ 28 days.

FRAME MEMBERS AND COMPRESSION RING:

1. 90% of all steel shall be American (domestic) made. Mill certification shall be made available upon request. All frame members shall be one piece structural steel tube with a minimum .120 (1/8") wall thickness, sized according to engineering. All frame members shall be bolted together with bolts totally concealed. All tubing for frame members shall be ASTM 500 grade B. Beam end plates shall be ASTM A36 fy=36,000 psi UNO. Bolts shall be A 307's, or 325's unless noted otherwise.

"I" beams, Angle iron, "C", "Z" or "S" purlins or beams, open or closed, shall not be allowed.

ROOFING:

1. All roofing shall be 24 gauge Zincalume / Galvalume coated steel panels. "Standing Seam" panels shall be Design Span by AEP Span with 1¾" high ribs @ 18" All roofing shall be pre-finished with Duratech 5000 or equal, 30 year paint finish. All roof panels shall be pre-cut with ribs running with the slope of the roof. Fascia shall be tube steel. Trim shall be 24 gauge Zincalume / Galvalume coated pre-finished to match the roof color. Screws & rivets shall match roof color.

PAINT:

1. All frame members shall be media blasted to a white finish removing all rust, scale, oil and grease. Powder coating for all frame members shall be provisionally warranted for

(5) five years with **TRUZINC** 7520-70138 primer with a Dry Film Thickness of (2.0 - 6.0 mils) & hardness of 2H-3H with a Salt Spray Resistance of **6000 hours** and **Super Durable Gloss Polyester 9000** series finish paint (2.5-3.5 mils) with a hardness of H-H2

& has **1000 hour** salt spray resistance. Total of primer & finish paint shall be 4.5-9.5 mils of paint. Finish shall be a smooth uniform surface with no pits, runs or sags. For additional information, please visit <http://www.tcipowder.com/> for a complete list of specifications.

ERECTION:

1. Manufacturer shall supply complete layout and detail plans with installation instructions for the structure. The structure shall be erected in a work-man-like manner with framing, roofing and trim installed according to the manufacturer's

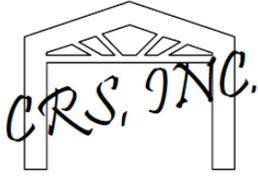
installation instructions. Care shall be taken to avoid damaging the structure during installation. Touch up powder coat paint with paint provided to prevent rusting. Components of the structure shall be covered and kept dry prior to erection.

WARRANTEE:

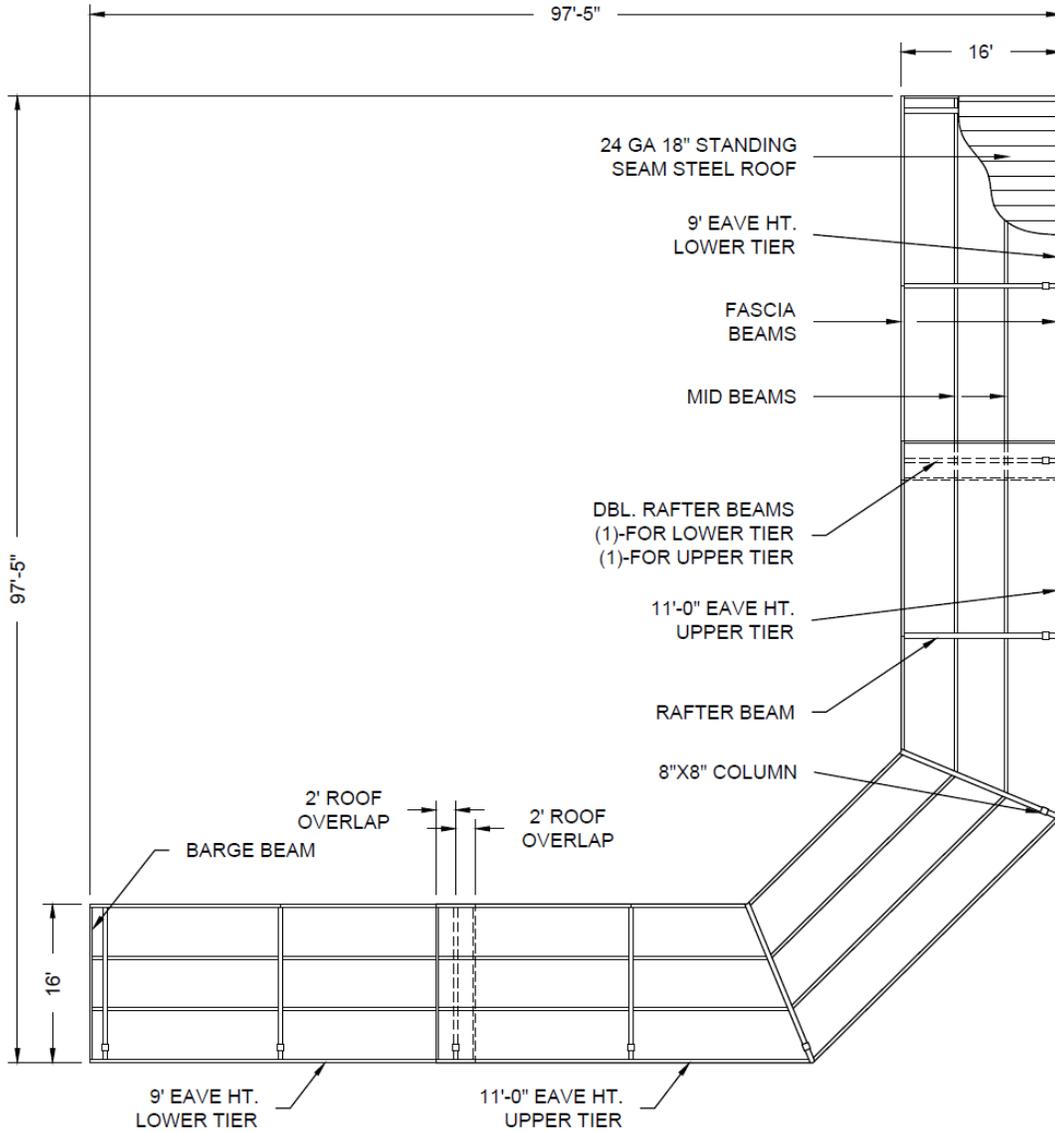
1. Manufacturer shall warranty the structure to be free from defects in material and workmanship for a period of (10) ten years from date of acceptance by owner. Warranty does not include damage from theft, fire, vandalism or acts of God. Manufacturer shall repair or replace structure components of like kind at his option, to match existing material and workmanship. Steel roof finish shall be warranted for (30) thirty years under a separate roof manufacturer's warranty. Powder coat paint shall be warranted for (5) five years after acceptance from owner against peeling, flaking and rusting. Warranty does not cover damage caused from shipping, erection of structure, lack of touchup and maintenance, overspray from lawn sprinklers or vandalism. Bolt threads are not powder coated and therefore are not covered under the powder coat warranty.

NOTE: Engineering specifications take precedence over drawings if differences occur.

(End of Section)

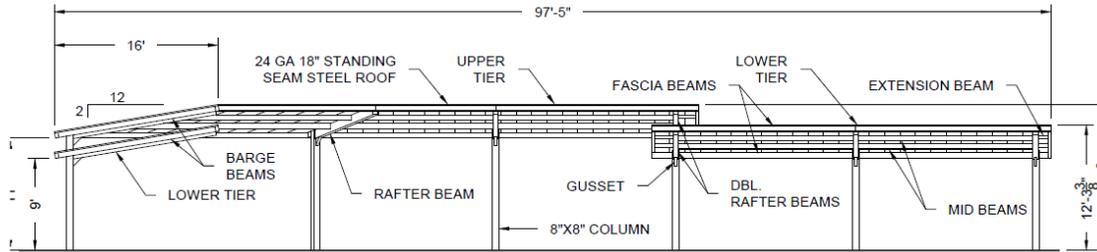
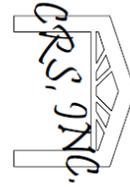


NOT FOR CONSTRUCTION

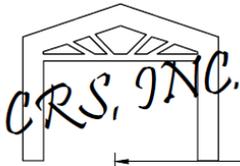


PLAN VIEW 16'-0"X97'-5" CUSTOM
MARANA MODEL
NTS

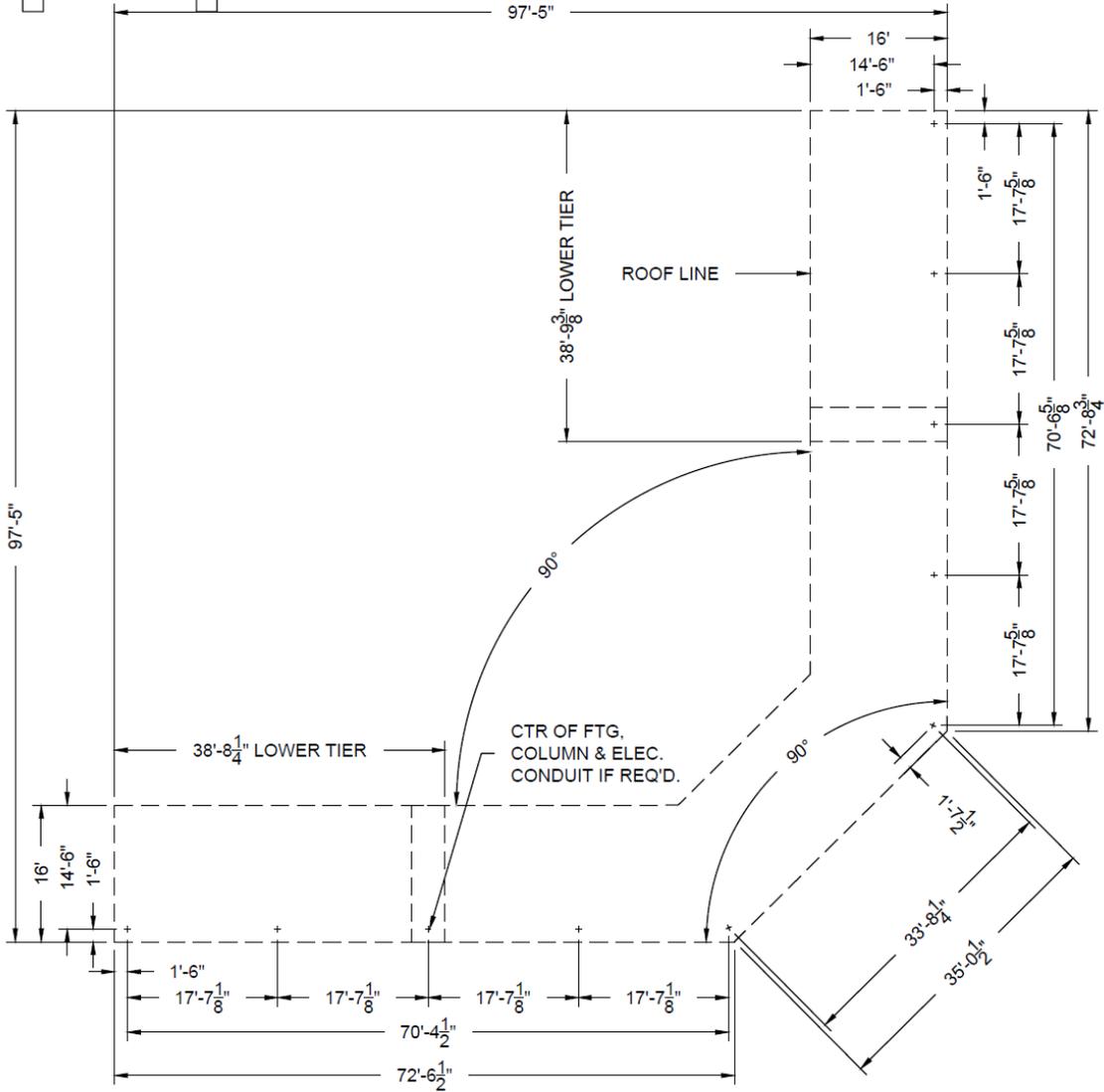
NOT FOR CONSTRUCTION



ELEVATION 16'-0"X97'-5" CUSTOM
MARANA MODEL
NTS



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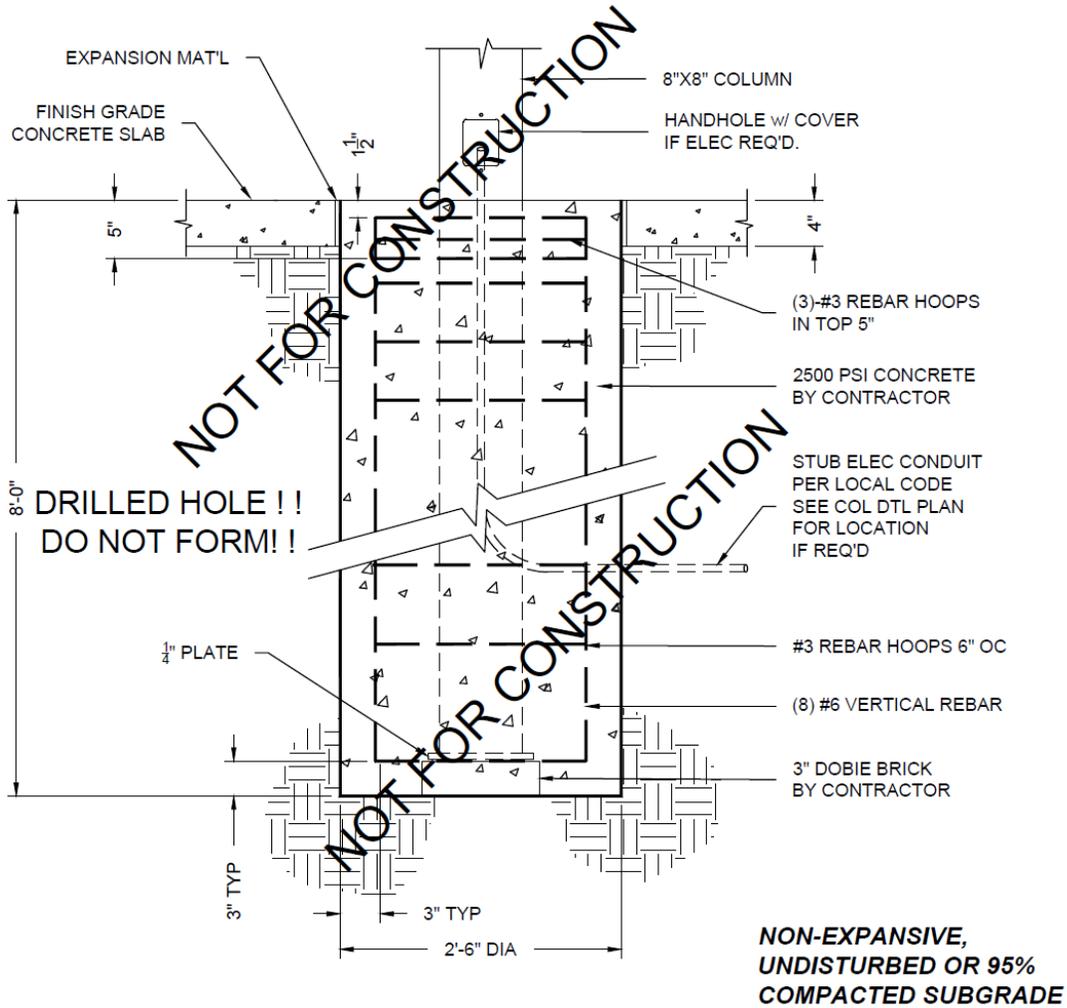


LAYOUT PLAN 16'-0" X 97'-5" CUSTOM
MARANA MODEL
NTS



NOTE: FOR ILLUSTRATION ONLY!
FOOTING SIZE MAY CHANGE w/
STRUCTURAL ENGINEERING

ADJUST FTG DEPTH FOR
LOCAL FROST CONDITIONS



DIRECT BURY CAISSON FOOTING
16'-0"X97'-5" CUSTOM MARANA MODEL
NTS

SECTION 02930 – TURF ESTABLISHMENT

PART 1 - GENERAL

- 1.01 DESCRIPTION: Work included: This work involves various operations necessary to provide and establish a permanent grass turf i.e. Bermuda grass turf-bed in accordance with the plans and specification contained herein.
- 1.02 RELATED WORK SPECIFIED ELSEWHERE:
- (1) Earthwork Section 02205
- 1.03 QUALITY ASSURANCE:
- A. Qualifications of workmen: Provide at least one person who shall be present at all times during execution of this portion of the Work, who shall be thoroughly familiar with the type of materials being installed and the proper materials and methods for their installation, and who shall direct all work performed under this section.
- B. Standards: All plants and planting material shall meet or exceed the specifications of Federal, State, and County laws requiring inspection for plant disease and insect control.
- 1.04 SUBMITTALS:
- A. Materials lists: Within 15 days after award of the Contract, submit a complete list of all materials proposed to be furnished and installed under this Section, demonstrating complete conformance with the requirements specified.
- B. Certificates: Deliver certificates for all materials to be used to the Landscape Architect.
- 1.5 PRODUCT HANDLING
- A. Deliver all items to the job site in their original containers with all labels intact and legible at time of Landscape Architect's inspection.
- B. Immediately remove from the site all materials which do not comply with the specified requirements.
- C. Use all means necessary to protect plant materials/seeds before, during, and after installation and to protect the work and materials of all other trades.
- D. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Landscape Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

- 2.01 MATERIALS:
- A. HERBICIDE: "Round Up" or approved equal
- B. GRASS SOD: Common Bermuda grass and/or Tifway 419 Bermuda grass and/or 'Prairie' Buffalo grass - Sod shall be free of all debris, weeds, and have been regularly maintained prior to cutting. Within one hour after being cut, the sod shall be rolled or stacked. Precautions shall

be taken to prevent damage from heat or inadequate moisture. Sod cut more than 18 hours shall not be used and discarded offsite. Sod shall be cut at a sufficient thickness to allow ¼" to ½" of soil to remain intact on each piece of sod.

- C. GRASS SEED: Common Bermuda grass (*Cynodon Dactylon*), hulled; 82% pure live seed 'Topgun' Buffalo Grass (*Buchloe dactyloides* 'Topgun') Topgun primed KNO₃ Certified as distributed by Bamert Seed Company Muleshoe, Texas; 806-272-5506; temporary annual rye grass seed (*Lolium X.*). See plan for location of seed type. All grass seed shall be free from noxious weeds, grade A recent crop, recleaned, and treated with appropriate fungicide at time of mixing. Seed shall be furnished in sealed, standard containers, which shall be retained by the Contractor for inspection. Copies of the official seed analysis or official seed tags shall be furnished to the Landscape Architect.
- D. MULCH: Conwed regular wood fiber mulch or approved equal
- E. FERTILIZER: Mississippi Chemical 18-18-5, water soluble, or an approved equal
- F. FIBER TACK: Apply with hydromulch on all berms or slopes greater than six (6) feet horizontal to one (1) foot vertical at the rate of one and one-half (1½) pounds of Fiber Tack per one thousand (1,000) square feet.

PART 3 - EXECUTION

3.01 INSPECTION:

- A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.
- B. Areas to be hydromulched/seeded if under automatic or manual irrigation. Locations of irrigation heads, valves, electric junction boxes, etc. will be determined by the Contractor and flagged to prevent damage.

3.02 CLEARING:

- A. Prior to grading and tilling, vegetation that may interfere with operations shall be mowed, grubbed, and raked. Machinery, equipment, trucks or personal passenger vehicles shall not be driven, parked or stored under the canopy of existing trees. The surface on the entire area to be turfed shall be cleared of stumps, stones, roots, debris, wire, and other materials that might hinder the work or subsequent maintenance. The collected material shall be removed from the site.

3.03 SPREADING OF TOP SOIL

- A. Finish grading will be performed as delineated in Section 02205.
- B. Fine grading: Upon completion of finish grading, perform all fine grading required in the planting areas, using 3" min. of top soil stockpiled on the site.
- C. During the fine grading operations, all swales shown on the grading plan and additional swales that may be required to drain areas shall be completed. All grade adjustments shall be made so there are no areas that will have standing water.

D. Immediately install the lawn upon the completed and accepted fine grade.

3.04 PLANTING BED PREPARATION (BERMUDA AND RYE):

- A. **Two weeks prior to application, the areas to be sodded, hydromulched, broadcast seeded, and/or drill seeded is to be treated with a post emergent herbicide at a rate recommended by the manufacturer.**
- B. Disk area to be sodded, hydromulched, broadcast seeded and/or drill seeded to a 4" min. depth, then cultivate with weighted spike tooth harrow or rake. Drag area until level and smooth, removing high areas and filling depressions. If area becomes compacted during harrowing and smoothing processes it shall be retilled to the specified depth and reharrowed to achieve an acceptable soil bed.
- C. Remove debris and rocks. Clods of soil in excess of 1" which have not been softened by irrigation or broken by the aforescribed cultivation practices shall be removed from the seed bed.
- D. When preparation is complete, contractor will request Landscape Architect to make inspection of site to determine acceptability before starting hydromulch/drill seeding application.

3.05 SOLID SODDING APPLICATION

- A. Prior to placing the solid sod, the turf bed shall be sufficiently watered to wet the soil surface and eliminate scalding of the roots at the base of the solid sod.
- B. Sod shall be placed in rows or strips. On slopes and in swales, the strips shall be placed at right angles to the flow of water. Sod pieces shall be placed tightly against each other with joints staggered at least one foot.
- C. Contractor shall roll the sodded area with a hand pulled roller to ensure that all gaps and spaces are eliminated between sod bed and sod.
- D. Set frequency and duration of water times to completely wet the sod and sod bed without hampering future or existing operations.

3.06 APPLICATION:

A. TIMING

1. Bermuda grass hydromulch or drill seeding shall not be applied prior to May 1 nor after August 15 or at anytime the soil temperature is less than 70 degrees F.
2. Buffalo Grass drill seeding shall not be applied prior to April 1 nor after August 1 or at anytime the soil temperature if less than 60 degrees F.

B. Application Rates

1. Application Rate: Hydromulch (Bermuda)

- a) Common Bermuda grass @ 2½ lbs/1000 S.F.
- b) Mulch @ 60 lbs./1000 S.F.
- c) Fertilizer @ 25 lbs./1000 S.F.

Typical mix for 800 gallon tank with coverage not to exceed 6,000 S.F. shall consist of 15 lbs. of common Bermuda grass seed, 360 lbs. of Conwed mulch, and 150 lbs. of 18-18-5 fertilizer.

2. Application Rate: Drill Seed (Bermuda)

- a) Common Bermuda grass @ 2½ lbs/1000 S.F.

- b) 15-5-10 Granular Fertilizer @ 25 lbs./1000 S.F.
 - 3. Application Rate: Broadcast (Annual Rye)
 - a) Rye grass @ 15 lbs/1000 S.F.
 - b) 15-5-10 Granular Fertilizer @ 20 lbs/1000 S.F.
- C. Set frequency and duration of watering times to provide water to newly seeded areas without hampering future operations. Watering of Buffalo Grass for establishment is critical as excess water is detrimental to the plant and conducive to weed growth which further impairs the plants. For germination of Buffalo Grass water lightly and frequently several times daily to prevent the top of soil from drying out. When grass is 1" tall decrease frequency every 2 to 3 days and increase depth of watering for the next week. Water one the following week. After that water only when the top three inches of soil are dry, but soak the soil thoroughly. This watering schedule is intended only as a rough guide as weather conditions vary greatly through the course of the growing season and soil conditions vary greatly from site to site.
- D. Reserved
- E. Drill Seeding - Seed shall be uniformly distributed over area shown on the plans. Seed shall be applied using a Brillion seeder (or approved equal) with a maximum spacing of 2" between seed rows. The contractor must provide seed coverage as provided under 3.08.

3.07 CLEAN-UP:

- A. Remove all debris from site, clean walkways, repair ruts, and any other damage resulting from turf establishment operations.

3.08 COVERAGE:

- A. Contractor shall be responsible for total coverage of all areas delineated on the plans for turf establishment. Bare areas in Bermuda grass and Buffalo Grass turf in excess of twelve square inches (i.e. 3" X 4") resulting from unequal seed distribution, lack of germination, erosion, or other causes shall be reseeded per the original specifications. Rye grass turf shall have the same requirements relative to bare areas, with the additional stipulation that rye grass plants must exist in sufficient quantity (Approx.75 plants/12" square area) to comply with specifications.

3.09 GUARANTEE:

- A. Coverage will be complete; areas of ungerminated seed twelve square inches (i.e. 3" X 4") and larger will be reseeded.
- B. Repair any damage made during reseeding immediately.

3.10 MAINTENANCE:

- A. After hydromulching or drill seeding maintain the lawn area and keep constantly moist until a stand of grass is present. Maintenance shall consist of watering, replanting, mowing, maintaining existing grades, and repair of erosion damage.
- B. Maintenance watering shall consist of daily watering. Maintenance watering shall be applied each day over the entire planted area until the soil is thoroughly wet to a depth of two (2) inches as determined by the

Landscape Architect. During periods of effective rainfall, watering shall be discontinued but shall be promptly resumed when required.

Contractor shall pay for all water required to establish temporary and permanent turf grass as per paragraph '3.08 Coverage'. Water billing will be transferred to the owner once substantial completion requirements have been obtained.

- C. Vegetation in lawn areas shall be kept under control by mowing. Any time that the vegetation growth reaches a height of three (3) inches, the areas shall be mowed. Mowing shall be done with approved mowing machines in such manner that will leave a vegetation height of two (2) inches.
- D. Areas on which a stand of growing grass is not present within four weeks of planting shall be reseeded as specified for the original planting unless lack of growth is due to adverse and unusual weather conditions. These said areas shall continue to be replanted until a viable stand is obtained. A stand shall be defined as live specified grass plants from seed occurring at the rate of not less than forty (40) growing plants per square foot. The aforementioned forty growing plants must be evenly distributed throughout the square foot area.

(End of Section)

SECTION 03110 – CONCRETE FORMWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Includes furnishing all materials, accessories, equipment, transportation and facilities, and performing all labor necessary for constructing concrete formwork.
 - 2. Formwork for site work concrete is specified in other sections.
- B. Related Documents:
 - 1. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1, General Requirements, apply to Work of this Section.
- C. Related Sections:
 - 1. Section 03200 – Concrete Reinforcement.
 - 2. Section 03300 – Cast-in-Place Concrete.

1.2 REFERENCES

- A. The Work described in this Section, unless otherwise noted on the Drawings, or herein specified, shall be governed by the latest editions of the following Codes or Specifications.
 - 1. ACI 301, Specifications for Structural Concrete of Buildings.
 - 2. ACI 318, Building Code Requirements for Structural Concrete and Commentary.
 - 3. ACI 347R, Guide to Formwork for Concrete.

1.3 SYSTEM DESCRIPTION

- A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension. Design criteria shall conform to ACI 347R.

1.4 SUBMITTALS

- A. Submit shop drawings in accordance with other sections.
- B. Shop Drawings: Submit a diagram of proposed construction joints not indicated on Drawings prior to or concurrent with reinforcing steel shop drawings.
 - 1. Shop drawings will be reviewed for proposed construction joint locations with respect to aesthetic criteria and general design conformance only.
- C. Product Data: Submit complete manufacturer's product data sheets for each specified product.

1.5 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 347R, ACI 301, and ACI 318.
- B. Except when close coordination and fitting of various trades' work precludes allowance of tolerance, maximum total permissible deviations from established line, grades and dimensions shall conform to ACI 347R. Set and maintain forms in such manner as to ensure completed work within specified tolerance limits.
 - 1. Variation in location of embedded structural items unless provided with sleeves or other means of adjustment shall be a maximum of 1/4".

1.6 DELIVERY, STORAGE AND HANDLING

- A. Form material shall be delivered to the job site as far in advance of its use as is practical, and shall be carefully stacked clear of the ground in such a manner as to facilitate air drying.
- B. Store form materials and accessories on dunnage and under cover with protective sheeting.
- C. Store void forms and installation instructions in manufacturer's packaging.

1.7 COORDINATION

- A. Notify responsible trades of schedules of concrete pours to as to allow adequate time for installation and coordination of their work.

PART 2 PRODUCTS

2.1 FORM MATERIALS

- A. Forms: Wood, metal and other approved material that will not adversely affect surface of concrete and will provide or facilitate obtaining specified surface finish:
 - 1. Wood forms for unexposed concrete surfaces shall be built of No. 2 Southern Pine Lumber or other material of equal qualifications, of sufficient thickness to be capable of sustaining the loads to be imposed thereon, dressed to uniformly smooth contact surfaces and so constructed as to be readily removable.
 - 2. Wood forms for exposed concrete surfaces shall be constructed of moisture-resistant, concrete form sheathing, not less than five (5) ply, and at least nine-sixteenths inch (9/16") thick, with one smooth face.
 - 3. Metal forms shall be clean, unpainted and in good condition. Forms shall at all times be straight to provide members of the widths and depths required. Damaged or indented forms will not be acceptable.
 - 4. Rustications and bevels in exposed concrete shown on the Drawings shall be neatly formed. All rustication strips shall be milled so that the edges are smooth and free from sawmarks or other irregularities.

2.2 FORMWORK ACCESSORIES

- A. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
- B. Corner Chamfer: 3/4 inch polyvinyl chloride PVC form strip.
- C. Form Ties:
 - 1. Exposed concrete surfaces; shall be manufactured to allow a positive breakback of no less than one inch (1") inside the concrete surface. Ties shall be equipped with a plastic cone of not less than five-eighths inch (5/8") diameters and one inch (1") long which will completely cover the hole and prevent the leakage of any mortar.
 - 2. Unexposed surfaces; shall be bolt rods or patented devices having a minimum tensile strength of three thousand (3,000) pounds when fully assembled. Ties shall be adjustable in length and free of lugs, cones, washers or other features which would leave a hole larger than seven-eighths inch (7/8") in diameter, or depressions back of the exposed surface of the concrete. Ties shall be of such construction that, when the forms are removed, there will be no metal remaining within one-inch (1") of the finished surface of the concrete.
- D. Form Sealer: High performance, transparent, penetrating polyurethane sealer for wood forms.
- E. Compressible Filler: Premolded plastic strips, non-asphaltic, ASTM D1752, Type 1.
- F. Construction Joint Form: Manufactured key-joint form that produces smooth, flush surface joint.
- G. Vapor Barrier: Plastic extrusion in accordance with Section 03 05 86 Vapor Barrier.
- H. Waterstops: Synko-Flex Preformed Plastic Waterstop of Synko-Flex Products Co. or approved equivalent, meeting requirements of Fs SS-S-00210.
- I. Void Form System: If required by Drawings, Corrugated paper or plastic void form materials and accessories to properly create a temporary support for the placement of structural concrete over expansive soils.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Refer to Division 1, General Requirements – Execution, for additional requirements on Verification of existing conditions before starting work.

- 3 B. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
- 4 1. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.
- C. Report in writing to Architect prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- D. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the Owner.

3.2 ERECTION

- A. All concrete members shall be adequately shored to safely support all loads and lateral pressures outlined in "Recommended Practice for Concrete Formwork" (ACI 347R), without distortion, excessive deflection and other damage.
- B. All necessary forms, centering, shores and molds shall be built to conform to the shapes, lines and dimensions of the various members of concrete construction, as shown or scheduled on the Drawings. They shall be sufficiently tight and so substantially assembled as to prevent bulging or the leakage of mortar. All forms shall be assembled to facilitate their removal without damage to the concrete.
- C. Provide temporary openings at the bottom of cast-in-place walls, columns and elsewhere as required to facilitate cleaning, drainage and inspection.
- D. Construct forms with such care as to produce concrete surfaces which will not have unsightly or objectionable form marks in exposed (concrete) surfaces. Lumber once used as forms shall have all contact surfaces thoroughly cleaned before reuse.
- E. Soffits: If indicated on Drawings, form the soffits of grade beams, walls and slabs bearing on piers using a void form system.
- F. Slab Voids: If indicated on Drawings, install forms continuous and tightly butted together. Cut forms tight around all projections. Prior to placing reinforcements, entire carton form area shall be covered with topping sheets secured with $\frac{3}{4}$ " staples.

3.3 FORM TIES

- A. Form ties shall be employed in such places and at such intervals as to securely hold the forms in position during the placing of concrete, and to withstand the weight and pressure of the wet concrete. Ties of a type intended to be entirely removed shall be coated with release agent to safeguard against damaging the concrete during such removal. The use of wire ties will not be permitted.

3.4 WOOD STRIPS, BLOCKINGS AND MOULDINGS

- A. Place in the forms wood strips, blocking, moulding, nailers, etc., as required to produce the finished profiles and surfaces shown on the Drawings and to provide nailing for wood members or other features required to be attached to concrete surfaces in such manner. Coat wood strips, blocking and moulding with release agent.
- B. Chamfers: All exposed external corners of concrete member shall have 3/4" chamfer strips placed in the forms to relieve the angles.

3.5 FORM RELEASE AGENT

- 5 A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.6 CONSTRUCTION JOINT

- A. Except as otherwise specifically indicated on the Drawings, each concrete member shall be considered as a single unit of operation, and all concrete for the same shall be placed continuously in order that such unit will be monolithic in construction. Should construction joints prove to be absolutely unavoidable, the joints shall be located at or near the midpoints of spans.
- B. Additional construction joints shall not be made under any circumstances without prior approval by the Architect. All construction joints must be either plumb or level. Provide appropriate keys and dowels in all construction joints, whether horizontal or vertical.

3.7 FORM CLEANING

- A. Immediately before placing concrete, clean forms free of chips, wire clippings and other debris.
- 6 B. Clean formed cavities of debris prior to placing concrete.
- 7 1. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- 8 2. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and

concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.8 INSERTS AND ACCESSORIES

- 9 A. Provide formed openings where required for items to be embedded in passing through concrete work.
- 10 B. Locate and set in place items that will be cast directly into concrete.
- 11 C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
- 12 D. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

3.9 WALLS

- A. Construct concrete walls to the heights, thicknesses and profiles shown on the Drawings. Provide temporary openings at the bottom of all wall forms to facilitate cleaning and inspection. Close such openings securely, immediately in advance of pouring concrete in the wall forms. Provide appropriate keys and haunches in walls to receive free edge of concrete floors.

3.10 WATERSTOPS

- A. Provide continuous waterstops in all joints below grade. Position waterstops accurately and support against displacement. Splice sections watertight in accordance with manufacturer's recommendations.

3.11 VAPOR BARRIER

- A. Install vapor barrier under all concrete floor slabs on grade and elsewhere as indicated on drawings. Smooth subgrade to prevent protrusions that may cause damage or rupture of film.

3.12 MISCELLANEOUS

- A. Construct forms for any and all items of concrete work required for or in connection with the satisfactory completion of the project, whether each such item is specifically shown or referred to or not.
- B. Do not sleeve any columns, beams, slabs or joists unless such sleeves are indicated on the Structural Drawings, or are previously approved on Shop Drawings by the Structural Engineer.

3.13 REMOVAL OF FORMS

- A. Forms shall not be removed until the concrete has adequately hardened and set. Clamps or tie rods may be loosened twenty-four (24) hours after the concrete is placed; ties, except for a sufficient number to hold the forms in place, may be removed at that time. Throughwall ties that are to be wholly withdrawn shall be pulled toward the inside face of the respective wall or beam. Cutting ties back from the face of the concrete will not be permitted, and care shall be exercised to avoid spalling concrete surfaces. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- B. Formwork for concrete members that support the weight of concrete shall remain in place until the concrete has reached 75% of its specified 28-day strength, unless otherwise specified or permitted.
- C. Under normal conditions, the minimum period of time to be allowed to elapse before forms may be removed shall be as indicated in ACI 347R, but its observance shall not operate to relieve the Contractor of the responsibility for the safety of the structure. Deviations shall be submitted to and reviewed by the Architect prior to removal of forms.
- D. When the temperature falls below forty degrees Fahrenheit (40 degrees F.), the forms shall remain in place an additional period equal to the time the structure has been exposed to such lower temperature. Adequate measures shall be taken to protect the concrete from cold weather conditions.
- E. Adequately reshore members subject to additional loads during construction to support both member and construction loads in a manner that will protect member from damage.
- F. When reshoring is required, the operations shall be planned in advance and shall be the responsibility of the Contractor.
- G. Contractor shall pay for and have Testing Laboratory make additional test cylinders to confirm strength requirements for early form recovery. Reshore before removing original shoring. Reshoring shall remain in place until members have attained required compressive strength, or as long as required to support additional construction loads.

3.14 FORM REUSAGE

- A. Thoroughly clean surfaces of forms and remove nails before reuse. Do not reuse damaged or worn forms. Inspect forms and re-tighten rustications. Remove traces of joint treatment and where required for taping joints, remove traces of release agent with MEK solvent.
- B. Recoat contact surfaces of forms and liners with a light spray coat of release agent. Do not apply until after joint treatment is complete.

3.15 FIELD QUALITY CONTROL

- 13 A. Refer to Division 1, General Requirements, for additional requirements for a Contractor Quality Control Representative to perform contractor quality control inspections.
 - 141. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.
 - 152. Document preparatory, initial and follow-up inspection in Contractor's Test and Inspection Reports.
 - 163. Test and Inspection Reports shall be available to Architect upon request.

- 17 B. Correct deficiencies in products and installation found not to be in compliance with Contract Documents.

(End of Section)

SECTION 03200 -- Concrete Reinforcement

PART 1 - GENERAL

1.01 SUBMITTAL

- A. Shop Drawings: Submit shop drawings in quadruplicate indicating location, size, bending and spacing of reinforcement.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Reinforcing Bars: Shall be of domestic manufacture conforming to the requirement of "Specifications for Billet-Steel Concrete Reinforcing Bars", ASTM A 615, Grade 40 or 60 as noted on drawings. Bars shall be millmarked by stamping or by rolling impression designating the type of steel.
- B. Welded Wire Fabric: Shall conform to ASTM A185..
- C. Concrete Accessories: bar supports, chairs, spacers, etc., shall conform to requirements of A.C.I. Standard 315. Supports at exposed surfaces shall be galvanized or plastic coated. Supports for bars in slabs on fill shall be sand chairs with welded plates on bottom or plastic chairs.

PART 3 - EXECUTION

3.01 GENERAL

- A. Detailing, fabricating, placing and supporting shall be in accordance with A.C.I. 308-71. Bars shall be bundled and tagged for specific location.
- B. Bending: Bars shall be bent cold. Heating of reinforcing not permitted.

3.02 CLEANING

- A. Reinforcing shall be cleaned of rust, scale, dirt, oil, or other coatings which would reduce bonding.

3.03 PLACING

- A. Reinforcing shall be accurately placed and securely saddle tied at every other intersection with No. 18 gauge black annealed wire. Support in proper position with metal or plastic chairs, spacers or wire ties prior to placing concrete.

3.04 CONCRETE PROTECTION

- A. Clear minimum coverage of concrete over reinforcing bars shall be:
 - 1. Slabs poured over earth -3 inches
 - 2. Sides of beams exposed to weather or in contact with ground -2 inches
 - 3. Beam bottom against carton forms -2 inches
 - 4. Formed beams, columns & girders -1 1/2 inches
 - 5. Top & bottom of formed slabs & joists -3/4 inches

3.05 DOWELS AND SPLICING

- A. Dowels shall be same size and spacing as adjoining main bars, minimum.
- B. Bars shall be lapped 40 diameter at splices; maintain 24 inch minimum lap.

- C. Provide corner bars in all beams of same size as beam reinforcing. Lap 30 bar diameter.

(End of Section)

SECTION 03301 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE:

- A. Section 03110 - Concrete Formwork
- B. Section 03200 - Concrete Reinforcement

1.01 QUALITY ASSURANCE:

The following standards shall be considered as minimum and referenced Specifications are hereby made a part of this Project Specification.

- A. ACI 301 Specifications for Structural Concrete for Buildings.
- B. ACI 318 Building Code Requirements for Reinforced Concrete.
- C. ACI 613 Recommended Practice for Selecting Properties for Concrete.
- D. ACI Comm. 621 Selection and Use of Aggregates for Concrete.
- E. ACI Manual of Concrete Inspection SP-2.
- F. ACI 614 Recommended Practice for Measuring, Mixing and Placing Concrete.
- G. ASTM C33 Standard Specifications for Concrete Aggregate.
- H. ASTM C94 Standard Specification for Ready-Mixed Concrete.
- I. ASTM C150 Standard Specification for Portland Cement
- J. ASTM C260 Standard Specification for Air-Entraining Admixtures for Concrete.
- K. ASTM C494 Standard Specification for Chemical Admixtures for Concrete.
- L. Except as modified, ACI 301 shall generally apply to all concrete work. Latest edition of each of above Specifications shall govern.

1.02 SUBMITTALS:

Proposed concrete mix design for each separate class of concrete shall be submitted by the Testing Laboratory for review and approval by Owner.

1.03 ALLOWABLE TOLERANCES:

Except when close coordination and fitting of various trades' work precludes allowance of tolerance, maximum total permissible deviations from established lines, grades and dimensions shall be as stated herein below. Set and maintain forms in such a manner as to ensure completed work within specified tolerance limits.

- A. Variation from the Plumb: In lines and surfaces of columns, piers, walls and in arises: In 10 ft. - 1/4 in.
- B. Variations from the Level or from Indicated Grades: In structural concrete floor (before removal of supporting shores), ceilings, beam soffits and arises: In 10 ft. - 1/4 in.
- C. Variations of Related Position of Columns, Walls and Partitions in any Bay or 20 ft. maximum: 1/4 inch.
- D. Variations in Sizes and Locations of Sleeves, Floor Openings and Wall Openings: 1/4 inch.
- E. Variations in Cross Sectional Dimensions of Columns and Beams and in Thickness of Slabs and Walls: 1/4 inch.
- F. Variations in Footings:
 - 1. Variations in dimensions of plan: Minus - 1/2 inch, Plus - 2 inches (applies to concrete only).

2. Misplacement or eccentricity: Two percent of footing width in direction of misplacement, but not more than 2 inches. (Concrete only).
3. Reduction in Thickness: Minus - 5 percent of specified thickness.

1.05 CONCRETE TEMPERATURES:

- A. Generally, methods for hot-weather concreting and winter concreting shall conform to ACI Standard Recommended Practice for Hot Weather Concreting (ACI 605), and ACI Standard Recommended Practice for Winter Concreting (ACI 604), and amendments thereto as hereinafter specified.
- B. The use of calcium chloride in concrete is prohibited, ACI 604 to the contrary notwithstanding.
- C. When air temperature at site of work falls below 40 degrees F., or is expected to fall below 40 degrees F. within ensuing 24 hours, heat mixing water and/or aggregates prior to placing in mixer, so that temperature of mixed concrete shall not be less than 60 degrees F. nor more than 90 degrees F.
- D. Heat aggregate either by steam or dry heat. Heating apparatus shall be of such type that it will heat the mass uniformly and in such manner as to preclude possible occurrence of overheated areas or hot spots.
- E. During cold weather, maintain aggregates, forms and reinforcing steel free from ice and snow, and protect area where concrete is being placed from weather during and after placing of concrete. Use only approved methods of heating materials and protecting concrete.
- F. In extremely hot weather, and with use of relatively hot materials, temperature of concrete may be excessive. In no case will the use of concrete having a temperature in excess of 90 degrees F. be permitted. Cooling of water and/or aggregates will be required if concrete temperatures rise above this limit.

PART 2 - MATERIALS

2.01 PORTLAND CEMENT: ASTM C150, Type I or III.

2.02 AGGREGATES:

- A. Coarse Aggregate: ASTM C33
- B. Fine Aggregate: ASTM C33
- C. Lightweight Coarse Aggregate: Shall be a lightweight cellular and granular inorganic material of expanded shale or clay conforming to ASTM C330. Dry loose weight shall not be less than 35 nor more than 55 lbs./cu. ft.
- D. Aggregate for Exposed Aggregate Concrete: Native aggregate; maximum size 3/4" diameter.

2.03 WATER:

Potable, clean, free of oil, acid and other injurious amounts of vegetable matter, alkalis, or other salts.

- 2.04 ADMIXTURES:
- A. Air Entraining: Conform to ASTM C260
 - B. Chemical: Conform to ASTM C494 and type as recommended by manufacturer for use as related to temperature, humidity at wind conditions at site at time of pouring.
 - C. No calcium chloride shall be allowed as an admixture in any concrete in this Project.
 - D. Fly ash shall not be allowed as an admixture in concrete used in this project.
- 2.05 CURING COMPOUND:
Kure-N-Seal by Sonneborn.
- 2.06 CURING PAPER: Conform to ASTM C171.
- 2.07 FLOOR SEALER:
Kure-N-Seal by Sonneborn.
- 2.08 FLOOR HARDENER:
LAPIDOLITH by Sonneborn.
- 2.09 NON SHRINK GROUT:
Embeco 153 grout.
- 2.10 SURFACE RETARDANT:
SIKA Rugasol - S/C.

PART 3 - EXECUTION

- 3.01 PROPORTIONING:
Except as otherwise specified herein, concrete shall conform to requirements of ACI 301, Chapter 3. Intent of Specifications is to secure for every part of work, structural concrete of homogeneous structure, which when hardened will have required strength and resistance to weathering.
- A. Concrete type: As shown on Drawings.
 - B. Compressive Strengths: Strengths of concrete required, based upon 28 day PSI compressive strength requirements, shall be as shown on Drawings.
 - C. Chemical Admixtures: All concrete shall contain a chemical admixture used in accordance with manufacturer's recommendations.
 - D. Air Entraining Admixture: All concrete shown on the Drawings to have air entraining admixture used in accordance with manufacturer's recommendations and the following table:

Nominal Maximum Size of Coarse Aggregates, In.	Total Air Content Percent by Volume
3/8	6 to 10
1/2	5 to 9
3/4	4 to 8
1	3.5 to 6.5
1-1/2	3 to 6

- E. Calcium Chloride: Not permitted in mix.
- F. Fly Ash: Not permitted in mix.

3.02 MIXING:

Except as otherwise specified herein, mixing of concrete shall conform to ACI 301, Chapter 7 and shall be Transit-Mixed Concrete. All equipment, operations, etc., shall meet requirements of ASTM Designation C94. Delivery of concrete shall be scheduled so that continuity of a pouring operation is not interrupted for more than 15 minutes from the time that one truck is emptied until another truck is in position to continue pouring operation. In event of violation of this requirement during a pour, Architect or his representative, may direct concrete to be ordered immediately from other sources at Contractor's expense. Plant shall deliver certificates to Architect for each batch delivered stating exact amount of each ingredient therein.

3.03 PLACING:

Except as otherwise specified herein, placing of concrete shall conform to ACI 301, Chapter 8.

- A. Placing Time: For standard weight concrete, the elapsed time between proportioning of materials (including cement) and placing of concrete in its final position shall in no case exceed 90 minutes for concrete containing Type I cement.
- B. Before depositing concrete, remove debris and excess water from spaces to receive concrete; wet or oil forms as directed; divert any flow of water away from excavations and forms.
- C. Convey from mixer to forms immediately by means of equipment of size and design to avoid segregation. Deposit in final position. Maximum drop of chutes, 5 feet. Chutes; metal or metal lines. Minimum slopes of chutes one vertical or two horizontal. Provide baffle plate and spout or tremies to prevent segregation. Provide hopper when operation is intermittent, and when length of chutes exceeds 20 feet.
- D. Deposit continuously and in layers of such thickness that no concrete will be deposited on concrete that has hardened sufficiently to cause formation of seams and planes of weakness within sections. Otherwise, form construction joints at such points and in manner directed. Compact by spading, rodding, forking, or mechanical means so that concrete is thoroughly worked around the reinforcement, around embedded items, and into corners of forms, eliminating all air or stone pockets which may cause honeycombing, pitting, or planes of weakness.
- E. When depositing new concrete against old, clean and thoroughly wet old surfaces and cover with an approved bonding agent, mortar, or neat cement grout. Pour new concrete before grout sets.
- F. Prior to pouring concrete into permanent-type metal forms, wet forms and sprinkle entire form area with heavy coat of neat Portland cement.
- G. Weather Conditions: Refer to "Concreting Temperatures."
- H. No concrete shall be placed during rain, sleet or snow, unless approved by Architect.
- I. Concrete shall be consolidated by the use of vibrators in accordance with ACI 609. Vibration must be in direct action in the concrete and not against forms or reinforcement. Concrete shall be vibrated until the water shows indications of rising, but not until the water has risen. Vibrators shall not be used to transport

concrete laterally within the forms or footings. A spare vibrator shall be kept at the project site during all concrete placement operations.

- J. Notify Architect at least 24 hours PRIOR to placing of any concrete. The placing of concrete before such notice is given and/or before review by the Architect, is a valid reason for rejecting so placed concrete.

3.04 CURING AND PROTECTION:

Except as otherwise specified herein, concrete curing and protection shall comply with requirements of ACI 301, Chapter 12.

- A. Maintain all concrete surfaces of every description in thoroughly wet condition during working and non-working hours for minimum of 7 days after pouring. Cover with unsized burlap, and keep burlap thoroughly soaked with water at all times during every day of curing period. Option: surfaces may be cured with specified curing compound in lieu of water curing when they are not to receive finishes requiring bonding and/or adherence to concrete.
- B. When prevailing or anticipated air temperatures can be expected to exceed 85 degrees F. for a period in excess of 48 hours after steel troweling is completed, in lieu of any other type of curing it will be mandatory that curing of steel-troweled finishes be executed by covering surfaces with a layer of unsized burlap which shall be maintained in a thoroughly wet condition at all hours during every day of curing period; or surfaces may be "diked" with clean sand and be "ponded" with clean water.
- C. Duration of Curing: The final curing shall continue until the cumulative number of days or fractions thereof, not necessarily consecutive during which the temperature of the air in contact with the concrete is above 50 degrees F. has totaled 7 days. If high early strength concrete has been used, the final curing shall continue for a total of 3 days. Rapid drying at the end of the curing period shall be prevented.
- D. Formed Surfaces: Steel forms heated by the sun and all wood forms in contact with the concrete during the final curing period shall be kept wet. If forms are to be removed during the curing period, one of the curing materials or methods shall be employed immediately. Such curing shall be continued for the remainder of the curing period.
- E. Temperature:
 - 1. Cold Weather: When the mean daily temperature of the atmosphere is less than 40 degrees F. the temperature of the concrete shall be maintained between 50 degrees and 70 degrees F. for the required curing period. When necessary, arrangements for heating, covering, insulation, or housing the concrete work shall be made in advance of placement and shall be adequate to maintain the required temperature and moisture conditions without injury due to concentration of heat.
 - 2. Hot Weather: When necessary, arrangements for installation of windbreaks, shading, fog spraying, sprinkling, ponding or wet covering of a light color shall be made in advance of placement, hardening and finishing operations will allow.
 - 3. Excessive Temperature Changes: Changes in temperature of the concrete shall be as uniform as possible and shall not exceed 5 degrees F. in any 1 hour or 50 degrees F. in any 24 hour period.
- F. Protection from Mechanical Injury: During the curing period, the concrete shall be protected from damaging mechanical disturbances, particularly loaded stresses, heavy shock, and excessive vibration. All finished concrete surfaces shall be

protected from damage caused by construction equipment, materials, or methods, and by rain or running water. Self supporting structures shall not be loaded in such a way as to overstress the concrete.

3.05 ACCEPTANCE OF STRUCTURE:

Except as otherwise specified herein, acceptance of structure shall be based on conditions specified in ACI 301, Chapter 18.

- A. If concrete fails to meet compressive strength requirements of this Project Specification, additional curing as specified by the Architect may be required and modifications may be required in the concrete mix design for the remaining concrete work, at expense of Contractor.
- B. The strength of the structure in place will be considered potentially deficient if it fails to comply with any requirements which control the strength of the structure, including but not necessarily limited to the following conditions:
 - 1. Low concrete strength as evaluated by Chapter 17 ACI 301.
 - 2. Reinforcing steel size, quantity, strength, position or arrangement at variance with the requirements of Chapter 5 or the Project Drawings.
 - 3. Concrete which differs from the required dimensions or location in such a manner as to reduce the strength.
 - 4. Curing less than that specified.
 - 5. Inadequate protection of concrete from extremes of temperature during early stages of hardening and strength development.
 - 6. Mechanical injury as defined in the Project Specification, construction fires, accidents or premature removal of formwork likely to result in deficient strength.
 - 7. Poor workmanship likely to result in deficient strength.
- C. If a structural analysis by the Architect/Engineer indicates the completed structure will be suitable for its intended use, it may be accepted.
- D. Concrete work judged inadequate by structural analysis or by results of a load test shall be reinforced with additional construction if so directed by the Architect/Engineer, or shall be replaced, at the Contractor's expense.
- E. The Contractor shall pay all costs incurred in providing the additional testing required by this Chapter if any requirement affecting the strength of the structure was not met. The Owner will pay all costs incurred in providing the additional testing required by this Chapter if all requirements affecting the strength of the structure have been met.

3.06 REPAIR OF SURFACE DEFECTS:

After forms are removed, joint marks, fins, honeycombed areas, bulges, depressions, etc., on all concrete surfaces shall be removed and/or filled, leaving a smooth, dense and true surface.

- A. Defective Areas:
 - 1. All honeycombed and other defective concrete shall be removed down to sound concrete. The area to be patched and an area at least 6 inches wide surrounding it shall be dampened to prevent absorption of water from the patching mortar. A bonding grout shall be prepared using a mix of approximately 1 part cement to 1 part fine sand passing a No. 30 mesh sieve, shall be mixed to the consistency of thick cream and shall then be well brushed into the surface.

2. The patching mixture shall be made of the same material and of approximately the same proportions as used for the concrete except that the coarse aggregate shall be omitted and the mortar shall consist of not more than 1 part cement to 2-1/2 parts sand by damp loose volume. White Portland cement shall be substituted for a part of the gray Portland cement on exposed concrete in order to produce a color matching the color of the surrounding concrete, as determined by a trial patch.
 3. The quantity of mixing water shall be no more than necessary for handling and placing. The patching mortar shall be mixed in advance and allowed to stand with frequent manipulation with a trowel, without addition of water, until it has reached the stiffest consistency that will permit placing.
 4. After surface water has evaporated from the area to be patched, the bond coat shall be well brushed into the surface. When the bond coat begins to lose the water sheen, the premixed patching mortar shall be applied. The mortar shall be thoroughly consolidated into place and struck off so as to leave the patch slightly higher than the surrounding surface. To permit initial shrinkage, it shall be left undisturbed for at least 1 hour before being finally finished. The patched area shall be kept damp for 7 days. Metal tools shall not be used in finishing a patch in a formed wall which will be exposed.
- B. Tie Holes: After being cleaned and thoroughly dampened, all tie holes shall be filled solid with patching mortar.
- C. Proprietary Materials: Approved proprietary compounds for adhesion or as patching ingredients may be used in lieu of or in addition to the foregoing patching procedures. Such compounds shall be used in accordance with the manufacturer's recommendations, after approval by Architect.

3.07 FINISHING OF FORMED SURFACES:

Except where otherwise specified herein, formed surfaces shall be finished in accord with Chapter 10 of ACI 301.

- A. Rough or Board Form Finish: For all concrete surfaces not exposed to view in completed work, provide as-cast, rough or form finish. Surfaces shall be true to line and plane. Tie holds and defects shall be patched, and fins exceeding 1/4 inch in height shall be rubbed down. Otherwise, surfaces shall be left with texture imparted by forms.
- B. Grout Cleaned Finish:
1. Provide grout cleaned finish to concrete surfaces that will be exposed in completed work.
 2. Produce grout cleaned finish on green concrete. Remove forms and execute repairing and patching immediately. After concrete, while still green, has been predampened, a slurry consisting of 1 part cement (including an appropriate quantity of white cement) and 1-1/2 parts sand passing the No. 16 sieve, by damp loose volume, shall be spread over surface with clean burlap pads or sponge rubber floats. Remove any surplus by scraping and then rubbing with clean burlap. Cure finish by fog-spraying with clean water for a minimum of 7 days.
- C. Related Uniformed Surfaces: Tops of walls, horizontal offsets, and similar uniformed surfaces occurring adjacent to formed surfaces shall be struck smooth after concrete is placed and shall be floated to a texture reasonably consistent with

that of formed surfaces. Final treatment on formed surfaces shall continue uniformly across uniformed surfaces.

3.08 FLATWORK:

Except as otherwise specified herein, flatwork shall conform to requirements of ACI 301, Chapter 11.

- A. Edge Forms, Joints and Screeds:
 - 1. Set edge forms and intermediate screed strips accurately to produce designed elevations and contours in finished surfaces. Forms and screed strips shall be sufficiently strong to support vibrating bridge screeds or roller pipe screed when nature of specified finish workmanship requires use of such equipment. Align concrete surface to contours of screed strips by use of strike-off templates or approved compacting-type screeds.
 - 2. When formwork is cambered, set screed to like camber to maintain proper concrete thickness.
 - 3. Locate all types of joints as indicated, and/or as directed.
- B. Consolidation: Thoroughly consolidate slabs and floors by means of vibrating bridge screeds, roller pipe screeds, or other similar approved means. Concrete to be consolidated shall be as dry as practicable, and surfaces thereof shall not be manipulated prior to finishing.
- C. Floated Finish: Provide floated finish where specified to precede other finishes.
 - 1. After concrete has been placed, struck off, consolidated, and leveled, concrete shall not be worked further until ready for floating. Start floating when water sheen has disappeared, and/or when mix has stiffened sufficiently to permit proper operation of power-driven float. Surface shall then be consolidated with power-driven floats of impact type, except in thin slab areas such as pan slabs, where hand-floating shall be used. Hand-floating with wood or cork-faced floats shall be used in locations inaccessible to power-driven machine. At this stage, check trueness of surface with 10 ft. straightedge applied at not less than two different angles. All high spots shall be cut down and all low spots filled during this procedure to produce planes checking true under straightedge in any direction, with tolerances not exceeding 1/8 inch in 10 feet. Then, refloat slab immediately to a uniform, smooth granular texture.
 - 2. In order to maintain specified close tolerances, bull-floating shall not be used. Darbying methods are acceptable.
- D. Troweled Finish:
 - 1. Provide troweled finish to following concrete surfaces: all interior exposed concrete surfaces.
 - 1. For all smooth, steel-troweled, monolithic, cement finishes, screed and temp slab surface. Do not dust to remove excess water. Screen and wood float to smooth, level surface. As soon as surface becomes workable, steel trowel to smooth, hard, impervious, polished finish. Machine trowling acceptable for preliminary troweling, and also for final troweling of cement finished floors and areas that are to receive resilient floor coverings. For areas not to be covered, final troweling by hand only. Finished surface shall be free of trowel marks uniform in texture and appearance, and shall be plane to a tolerance of 1/8" to 10 feet. Mark off floors as directed. Pour panels as directed, and to avoid contingousness between freshly poured

panels. All floors having this finish shall have chemical floor hardener applied as recommended by manufacturer.

- E. Broom or Belt Finish:
 - 1. Provide broom or belt finish to: Exterior sidewalks, exterior cement finished vehicular traffic area.
 - 2. Execute finishing by giving previously floated surfaces a coarse, transverse- scored texture by drawing a broom or burlap belt across surface. Finishing shall follow immediately after floating.
 - 3. Mark off surfaces in patterns as designated, or as directed. Execute marking with rounded finishing tool to provide smooth, straight lines.
- F. Exposed Aggregate Finish: Refer to Drawings for location of finishes. After placement of concrete when bleed water has disappeared, apply Rugasol S/C with a low pressure spray at the rate of 1 gal./200 sq. ft. Brush lightly with nylon brush. Wash loosened materials off with garden hose. Adjust nozzle to fine spray to avoid loosening individual aggregate.

3.09 APPLICATION OF FLOOR SEALER:

Apply liquid floor sealer on all concrete floor surfaces specified to receive a monolithic finish that are not scheduled to receive further floor finishing materials. Apply 1st coat of liquid floor sealer as a curing compound at a maximum coverage of 200 sq. ft. per gallon. Apply 2nd (finish coat) at the completion of construction. Apply 2nd coat a maximum coverage of 500 sq. ft. per gallon.

3.10 APPLICATION OF FLOOR HARDENER:

Apply liquid floor hardener on all concrete floor surfaces specified to receive a monolithic finish that are not scheduled to receive further floor finishing materials. Concrete shall be aged a minimum of 10 days. Apply the rate of 1 gal./100 sq. ft. in each of the separate applications as follows: (Dilution Ratio by volume-water: Lapidolith)

1st application - 2 : 1

2nd application - 1 : 1

3rd application - 1 : 2

3.11 CLEAN-UP:

- A. Immediately after completion of concrete operations, remove from site all debris resulting from work.
- B. Immediately prior to final inspection, preliminary to acceptance, wash and clean all exterior concrete wearing surfaces and interior uncovered wearing surfaces. Leave all concrete in clean acceptable condition.

(End of Section)

SECTION 03350 - CONCRETE FINISHING AND CURING

1.0 GENERAL

1.01 SUBMITTALS

Submit manufacturers' technical data for curing materials proposed.

1.02 PROTECTION

Protect exposed concrete finishes from damage and soiling by other trades. Exposed concrete floors to receive sealed finish shall be covered to protect against spillages of grease, paint, pitch and other harmful substances.

2.0 PRODUCTS

2.01 MATERIALS

- A. Curing Membrane - 6 mil polyethylene film.
- B. Curing & Sealing Compound - Kure-N-Seal 0800 by Sonneborn Chemstruction Systems.

3.0 EXECUTION

3.01 CONCRETE FINISHING

A. General

- 1. Steps, walks and pads to receive dry broom finish.
- 2. All other concrete floors to receive dry broom finish.
- 3. Exposed concrete vertical surfaces shall have a rubbed finish.

B. Smooth Trowel Finish:

Surfaces shall be jitterbugged or tamped, screeded to proper elevation then floated with metal or wood floats. After concrete has sufficiently set to support weight, mechanical floats shall be used for finish leveling. After all water sheet has disappeared from surfaces, trowel with steel trowel to smooth surface free from blemishes and trowel marks. Final troweling shall be done after concrete is so hard that no mortar accumulates on trowel and a ringing sound is produced as trowels are drawn over surfaces. Finish floors shall be level within 1/8" when tested with a 10 ft. straight edge.

C. Broom Finish

Finish same as specified for trowel finish except prior to final set of concrete, brush surface with soft bristle broom to produce medium texture finish.

D. Wood Float Finish: Surfaces shall be jitterbugged or tamped, screeded to proper elevation, then floated with wood floats to obtain a tight wood float finish. This finish shall apply to slabs recessed for setting beds and topping.

E. Exposed Concrete Surfaces: Rubbed Finish - As soon as forms are removed, all fins and other projections shall be removed, offsets leveled and voids filled with mortar worked up by rubbing with carborundum stones. Additional mortar to assist in rubbing shall be composed of one part cement to one part fine sand. This finish applied to vertical concrete surfaces or other building wall surfaces as indicated.

3.02 CONCRETE CURING

A. General:

- 1. All other concrete shall be cured with curing and sealing compound.

- B. Membrane Method - Spread membrane over all exposed concrete surfaces immediately following finishing operations. Lap joints 12 inches and secure with tape. Apply sand on edges of membrane and maintain in place for a minimum of seven (7) days.
- C. Compound Method - Immediately following finishing operation, apply a continuous uniform film of compound (full strength) by garden type sprayer, using neoprene hose.

(End of Section)

SECTION 04060 - MORTAR

PART 1 - GENERAL

- 1.01 SCOPE:
Provide mortar for concrete masonry construction, and grout for reinforced masonry construction.
- 1.02 RELATED WORK SPECIFIED ELSEWHERE:
- A. Section 01410 - Testing and Laboratory Control
- 1.03 QUALITY ASSURANCE:
- A. Reference Standards:
1. American Society for Testing and Materials ASTM (latest edition)
 - a) ASTM C91, Masonry Cement
 - b) ASTM C144, Aggregate for Masonry Mortar
 - c) ASTM C150, Portland Cement
 - d) ASTM C297, Hydrated Lime for Masonry Purposes
 - e) ASTM C270, Mortar for Unit Masonry
 - f) ASTM C404, Aggregates for Masonry Grout
 - g) ASTM C476, Mortar and Grout for Reinforced Masonry
 2. Brick Institute of America (BIA): BIA M1-72, Portland Lime Mortar for Brick Masonry.
- B. Source Quality Control:
1. Mortar: Initial compressive strength laboratory tests as specified in Section 01400.
 2. Grout: Initial compressive strength as specified in Section 01400.
- 1.04 SUBMITTALS:
- A. Product Data: Submit in accordance with Section 01340. Include product data sheets for each named product.
- B. Test Reports: Submit independent laboratory test reports of initial mortar and grout tests, including design mix proportions, for each mortar and grout.
- C. Certification: Submit manufacturer's certification that materials meet specification requirements.
- D. Samples: Two hardened cubes of mortar type, 2" size, for color selection and matching.
- 1.05 PRODUCT DELIVERY STORAGE AND HANDLING:
- A. Deliver and store manufactured products in original, unopened containers.
- B. Store cementitious ingredients in weather-tight enclosures and protect against contamination and warehouse set. Protect from freezing.
- C. Stockpile and handle aggregates to prevent contamination from foreign materials.

1.06 ENVIRONMENTAL REQUIREMENTS:

- A. Heat mixing water when air temperature is below 40° F. and heat aggregates when air temperature is below 32° F., to assure mortar temperatures between 40° F. and 120° F. until used.
- B. Produce subsequent mortar batches within $\pm 10^\circ$ F. of first batch.
- C. Do not heat water or sand above 120° F.

PART 2 - PRODUCTS

2.01 MATERIALS:

Portland Cement: ASTM C150, Type I, II, or III.

- A. Masonry Cement: ASTM C91, Trinity Mix Masonry Cement by General Portland, Inc.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Sand: ASTM C144, gradation in accordance with 81A M1. For high-bond mortar, gradation in accordance with high-bond additive manufacturer's directions.
- D. Coarse Aggregate: ASTM C404, maximum size 3/8".
- E. Water: Clean and potable, free of organic matter.
- F. Workability Additive: "A" Marble Dust by Armco Steel Corp., Piqua Quarries; or UTE Dolomite Limestone by U.S. Lime Div. of Flintkote Corp.; or Micro Fill #2 by Pure Stone Co., Marble Falls, Texas.
- G. Waterproofing Compound: Omicron by Master Builders Co.
- H. Mortar Color: Inorganic mineral oxide color agent 3% by weight of Portland Cement content.

2.02 MIXES:

- A. Mortar Mix:
 - 1. ASTM C270, proportion specifications. Type N.
 - 2. Minimum compressive strength of 500 per square inch in 28 days.
 - 3. Maximum air content 12%.
 - 4. Incorporate water proofing admixture in mortar for exterior walls at rate of 1 lb. per bag of cement and 1 lb. per cu. ft. lime.
- B. Grout Mix:
 - 1. ASTM C476, Fine grout.
 - 2. Minimum compressive strength of 2500 per square inch in 28 days.
- C. Mixing Procedures - Mortar and Grout:
 - 1. Measure materials by volume or equivalent weight.
 - 2. Mix cementitious materials and aggregate for 3 to 5 minutes in a mechanical batch mixer.
 - 3. Add maximum amount of water to produce workable consistency.
 - 4. If mortar begins to stiffen from evaporation or absorption of a part of mixing water, re-temper by adding water and remix.
 - 5. Grout shall have a slump of 10-1/2" to 11" at time of placement.
 - 6. Use mortar and grout within 1-1/2 hours of initial mixing.
 - 7. Do not use mortar or grout after it has begun to set.

PART 3 - EXECUTION

3.01 INSTALLATION:

Installation of mortar and grout as specified.

3.02 FIELD QUALITY CONTROL:

- A. Mortar: Control mortar batching by measuring materials by volume in accordance with approved mix design proportions.
- B. Grout: Field compressive tests as specified in Section 01400.

(End of Section)

SECTION 07900 - JOINT SEALERS

PART 1 - GENERAL

1.01 SCOPE:

- A. Provide exterior sealants required to close joints which would allow moisture or air to enter building between fixed materials and as otherwise indicated on drawings for exterior sealing. Seal exterior joints and interior side of exterior joints with sealant rather than caulking compound.
- B. Provide sealing of flashing reglets.
- C. Provide sealant in horizontal expansion joints.
- D. Provide caulking in conjunction with interior painting operations and as otherwise indicated on drawings for interior caulking.

1.02 SUBMITTALS:

- A. Manufacturer's Literature: Submit manufacturer's name and product proposed for use, and manufacturer's color charts for Architect's selections and approval.
- B. Samples and Test Reports: for materials other than those specified furnish a unit sample of each material proposed (include primer), accompanied by certified independent laboratory test reports showing that materials to be furnished have been tested and meet requirements of applicable contract documents and manufacturer's certification that no major formula change has taken place since date of test. Sample containers shall be labeled as to supplier, name or material, specification numbers, colors. Include letters or published recommendations by manufacturer to support selection and compatibility of various related materials with respect to type of joints for which each materials is intended.
- C. submit in accordance with Section 01340.

1.03 QUALITY ASSURANCE:

- A. Acceptable Manufacturers:
 - 1. Pecora Chemical Corp.
 - 2. Tremco Mfg. Co.
 - 3. Sonneborn Division of Contech.
 - 4. Products Research and Chemical Corp.
- B. Applicator: Approved in writing by sealant manufacturer as a qualified applicator of their product.

1.04 DELIVERY AND STORAGE:

Deliver materials in unopened containers as packaged by manufacturer. Store in a manner to protect materials from weather.

1.05 GUARANTEE:

Provide Owner a written guarantee which shall guarantee sealant operation to be free of leaks and defects in material and workmanship for a period of 2 years from date of acceptance.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Sealant: (Exterior and Interior Vertical Joints Subject to Movement) Two-part synthetic rubber (polysulphide) sealant conforming to performance requirements of FS TT-S-00227E, class A;

- bearing Thiokol chemical Corporation's "tested and approved" seal for Type I, class B Sealants. Color must be matched to window wall color. Standard color as approved by Architect.
- B. Sealant: (Horizontal joints subject to traffic) Self-leveling two-part polyurethane sealant conforming to FS TT-S-00227E. Standard color as selected and approved by Architect.
 - C. Caulking Compound: One part acrylic latex caulk for general purpose interior caulking capable of being painted with latex or oil base paints.
 - D. Vertical Joint Backing: Closed cell polyethylene joint backing material as recommended by sealant manufacturer. Select a size that will cause about 30% compression in joint.
 - E. Horizontal Joint Backing: Round solid neoprene or butyl rubber, shore A hardness 70.
 - F. Bond-Preventative Materials: Polyethylene tape, pressure-sensitive adhesive or masking tape, FS UU-T-106.
 - G. Primer: As recommended by sealant manufacturer for each type of working surface.
 - H. Fire-Resistant Sealant: For spaces less than 3/8" use "Dow Corning Fire Stop Foam" or GE Pensil 851".

2.02 MIXING:

Mix two-component sealants in accordance with directions printed on container labels.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION:

- A. Concrete and masonry surfaces shall be smooth, dry, sound, Brush and wipe surfaces dust free. Remove oil, grease, release agents, coating or other contaminants from surfaces.
- B. Remove loose mill scale from steel surfaces. Remove dirt, oil or grease by solvent cleaning and wipe surfaces.
- C. Report unsatisfactory surfaces to Architect.
- D. Prime and prepare surfaces in strict accordance with sealant manufacturer's written recommendations.

3.02 JOINT SIZES AND BACKING:

- A. Sealant: Minimum and maximum joint sizes shall be as recommended by sealant manufacturer and as shown on drawings. Use joint backing material to control depth of joints. In Joints 1/2" and wider, depth equal to 1/2 width with minimum depth of 1/4". In horizontal traffic joints, depth equal to 1/2 width with minimum depth of 1/2".
- B. Caulking: Depth equal to 3 times joint width.

3.03 APPLICATION:

- A. Joint Backer: Install joint backer to achieve required depth of joints. Where not used, install a bond-preventive material in joint.
- B. Sealant: Apply sealant to joints prior to any water repellent or clear coating operations. Apply sealant within 8 hours after primer has dried. Gun-apply sealant, completely filling joint. Tool joints smooth and wrinkle free. Apply self-leveling sealants in accordance with manufacturer's direction.
- C. Caulking: Caulk joints before final coat of paint is applied to adjacent surface. Apply caulking with a pressure gun having a nozzle of proper size and fit joint. Completely fill joint and firmly tool against backing to make a smooth, convex bead and assure good adhesion. Caulking shall develop a firm skin before paint is allowed.

3.04 CLEANING:

Remove excess sealant and caulking materials from adjacent surfaces as work progresses. Xylol or Toluol solvent may be used to remove sealant. Remove debris from site.

(End of Section)

REFERENCES

Please list ten references of governments, individuals or companies that have used your baseball facility renovation services:

1. _____
COMPANY NAME OR CONTACT PERSON

STREET ADDRESS	CITY	STATE	ZIP
----------------	------	-------	-----

CONTACT PERSON	TELEPHONE NUMBER
----------------	------------------

PRODUCTS/SERVICES USED

2. _____
COMPANY NAME OR CONTACT PERSON

STREET ADDRESS	CITY	STATE	ZIP
----------------	------	-------	-----

CONTACT PERSON	TELEPHONE NUMBER
----------------	------------------

PRODUCTS/SERVICES USED

3. _____
COMPANY NAME OR CONTACT PERSON

STREET ADDRESS	CITY	STATE	ZIP
----------------	------	-------	-----

CONTACT PERSON	TELEPHONE NUMBER
----------------	------------------

PRODUCTS/SERVICES USED

CONFLICT OF INTEREST QUESTIONNAIRE

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code went into effect which requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the City Secretary of the City of Carrollton not less than the 7th business day after the person becomes aware of facts that require the statement to be filed.

A recent amendment to this state law that went into effect on September 1, 2007 now allows for two changes to the original statute:

1. The Conflict of Interest Questionnaire only needs to be filled out and returned with your bid if you or your company are aware of a conflict, and,
2. If the amount of the conflict exceeds \$2,500

It is the responsibility of every vendor filling out and returning this bid to determine if there is a conflict meeting the parameters listed above. If so, **the City of Carrollton requires that this Questionnaire be completed and turned in with your bid.** If there is no conflict, or if the amount of the conflict is less than \$2,500, then you are not required to submit the Questionnaire with your bid.

See Section 176.006, Local Government Code which reads "A person commits an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor."

**CONFLICT OF INTEREST QUESTIONNAIRE
CIQ**

FORM

For vendor or other person doing business with local governmental entity

This questionnaire is being filed in accordance with chapter 176 of the Local Government Code by a person doing business with the governmental entity.

By law this questionnaire must be filed with the records administrator of the local government not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code.

A person commits an offense if the person violates Section 176.006, Local Government Code. An Offense under this section is a Class C misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of person doing business with local governmental entity.

2 Check this box if you are filing an update to a previously filed questionnaire.

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than September 1 of the year for which an activity described in Section 176.006(a), Local Government Code, is pending and not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 Name each employee or contractor of the local government entity who makes recommendations to a local government officer of the governmental entity with respect to expenditures of money AND describe the affiliation or business relationship.

4 Name each local government officer who appoints or employs local government officers of the governmental entity for which this questionnaire is filed AND describe the affiliation or business relationship.

CONFLICT OF INTEREST QUESTIONNAIRE CIQ

FORM

Page 2

For vendor or other person doing business with local governmental entity

5 Name of local government officer with whom filer has affiliation or business relationship. (Complete this section only if the answer to A, B, or C is YES.

This section, item 5 including subparts A, B, C & D, must be completed for each officer with whom the filer has affiliation or other relationship. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income from the filer of the questionnaire?

Yes

No

B. Is the filer of the questionnaire receiving or likely to receive taxable income from or at the direction of the local government Officer named in this section AND the taxable income is not from the local governmental entity?

Yes

No

C. Is the filer of this questionnaire affiliated with a corporation or other business entity that the local government officer serves As an officer or director, or holds an ownership of 10 percent or more?

Yes

No

D. Describe each affiliation or business relationship.

6

Signature of person doing business with the governmental entity

Date

CERTIFICATE OF INTERESTED PARTIES

A new law in the state of Texas went into effect on January 1, 2016, which requires your firm to submit a Form 1295 (Certificate of Interested Parties attached) through the Texas Ethics Commission's website, and a notarized original form as printed from the website to the Town prior to approval of the contract. More information can be found at the following link:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm.

This form must be notarized according to state law, and submitted with your bid response.

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties. Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.	OFFICE USE ONLY
1 Name of business entity filing form, and the city, state and country of the business entity's place of business.	
2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.	

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

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

5 Check only if there is NO Interested Party.

6 AFFIDAVIT I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20 _____, to certify which, witness my hand and seal of office.

Signature of officer administering oath Printed name of officer administering oath Title of officer administering oath

ADD ADDITIONAL PAGES AS NECESSARY