

GREGG COUNTY, TEXAS  
GREGG COUNTY BID NO. 2019-903  
FOR  
EAST TEXAS REGIONAL AIRPORT  
SOUTH GA APRON CONNECTOR

JANUARY 2019



HAYES ENGINEERING, INC.  
Texas Registered Engineering Firm F-1465  
2126 Alpine St.  
Longview, TX 75601  
(903) 758-2010

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GREGG COUNTY BID NO. 2019-903  
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**The Texas Department of Transportation 2014 Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges shall govern the following Items and any other Items of work required to complete the work as shown or specified. These Items shall be considered included in these Specifications in their entirety with the exception of the Measurement and Payment sections:**

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**BID DOCUMENTS**

GREGG COUNTY INVITATION TO BID NO. 2019-903  
for  
EAST TEXAS REGIONAL AIRPORT  
SOUTH GA APRON CONNECTOR

Sealed proposals addressed to Kelli Davis, Gregg County Purchasing Agent, 101 E. Methvin St., Ste. 205, Longview, TX 75601 will be received on or before 2:00 p.m., Tuesday, March 12, 2019, for furnishing all labor, materials, equipment, supplies, and supervision necessary for the construction of the Gregg County ETRA South GA Apron Connector project. At the time stated, bids will be opened and publicly read aloud in the Purchasing Agent's Conference Room, located on the 2<sup>nd</sup> Floor of the Gregg County Courthouse.

The proposed work consists of approximately 224 LF of 36" RCP and 740 SY of 10" thick concrete pavement and associated work and appurtenances.

A pre-bid meeting will be held at 10:00 a.m., Tuesday, March 5, 2019, at the East Texas Regional Airport, 269 Terminal Circle, Longview, TX 75603.

Plans and specifications may only be examined or downloaded at www.civcastusa.com. The project engineering firm is Hayes Engineering, Inc., 2126 Alpine Rd., Longview, TX 75601, (903) 758-2010.

Gregg County is wholly committed to developing, establishing, maintaining, and enhancing minority business involvement in the total procurement process.

EEO/M/F/V/H/D

The Honorable Bill Stoudt, County Judge  
Gregg County, Texas

Advertising Dates: Sundays, February 24<sup>th</sup> and March 3<sup>rd</sup>, 2019



Gregg County Bid No. 2019-903  
East Texas Regional Airport South GA Apron Connector

INTENT

Gregg County, Texas is requesting sealed bids for the East Texas Regional Airport Airfield Drainage Improvements. ETRA is located at 269 Terminal Circle, Longview, Texas.

INSTRUCTIONS TO BIDDERS

**Pre-Bid** – *It is highly preferred* that contractors attend a **pre-bid conference** on Tuesday, March 5, 2019 at 10:00 a.m. at the Terminal Building located at 269 Terminal Circle, Longview, Texas. Contractors should carefully examine the construction site to obtain first-hand knowledge of existing conditions. Contractors will not be given extra payments for conditions which can be determined by examining the site and bid documents.

**Due Date** - Sealed bids must be submitted to Kelli Davis, Gregg County Buyer, 101 E. Methvin St., Suite 205, Longview, Texas 75601, on or before Tuesday, March 12, 2019 at 2:00 p.m. Bids may be withdrawn any time prior to the official deadline. Bids may not be amended, altered or withdrawn after the official deadline.

**Compliance** - Successful vendor agrees to comply with any and all Federal, State and local laws, rules and regulations pertaining to wages, hours of employment and minority hiring practices.

**Measurement Calculation** - Measurement estimates are approximate and subject to error in computation. Each contractor must measure and calculate to his satisfaction.

**Performance, Payment, and Maintenance Bonds** – Within 15 days after the date of the award, the issuance of a purchase order and prior to commencement of the actual work the successful bidder shall furnish all bonds for the full amount of the contract if that contract exceeds \$50,000. If the contract is for \$50,000 or less, any payment will be made after the Purchasing Agent and/or the Auditor have been notified that services have been received in accordance with the award.

**Award** - Gregg County expressly reserves the right to accept or reject in whole or in part any bid submitted and to waive any technicalities or formalities, considered to be in the best interest of Gregg County. The contract will be awarded to the firm that is determined to be the best value to the County. The Commissioner's Court intends to award the contract on or before **90 days** and the awarded contractor should plan on commencing work as soon as possible thereafter.

**Completion Date** – All work **MUST BE COMPLETED within ninety (90) days of Notice to Proceed.**

Conflict of Interest - No public official shall have interest in this contract, in accordance with Vernon's Texas Codes Annotated, Local Government Code Title 5, Subtitle C, and Chapter 171.

Ethics - The bidder shall not offer or accept gifts or anything of value nor enter into any business arrangement with any employee, official or agent of Gregg County.

Gregg County Standard Terms & Conditions – By submitting and signing this bid documents Contractor agrees to all terms and conditions as set forth in the Gregg County Standard Terms & Conditions and that they have carefully read and will follow all instructions, requirements and specifications. Fill out all required forms properly and completely. Submit all appropriate supplements and or samples with your bid. Sign your bid. ***Unsigned bids will be disqualified.***

Questions - Questions regarding the Work should be addressed in writing to the contact for the project and to Kelli Davis, Buyer, by fax no. 903-237-2682 or by e-mail to [purchasing@co.gregg.tx.us](mailto:purchasing@co.gregg.tx.us)

To: Vendors of Gregg County, Texas  
From: Kelli L. Davis, CPPB, Purchasing Agent  
Re: ***Conflict of Interest Form (CIQ)***

Vendor:

Attached, please find link below to a Conflict of Interest Questionnaire. Please complete this form if you have a conflict of interest with any Gregg County Official, Employee, or Department. The questionnaire should reflect the name of the individual with whom the conflict of interest occurs. If you have any questions regarding compliance with Chapter 176 of the Texas Local Government Code, please consult your legal representative. Compliance is the responsibility of each individual, business, agent or representative who is subject to the law's filing requirements.

**<http://www.ethics.state.tx.us/forms/CIQ.pdf>**

Original completed forms should be filed with the County Clerk's Office and a copy sent to the Gregg County Purchasing Department either through bid return, fax, or email. Please see contact information below.

**Gregg County Clerk**  
Gregg County Courthouse  
101 East Methvin, Ste. 200  
Longview, Texas 75601  
Ph: 903-236-8430

**Gregg County Purchasing Department**  
Email: [purchasing@co.gregg.tx.us](mailto:purchasing@co.gregg.tx.us)  
Ph: 903-237-2684  
Fx: 903-237-2682

***Applicable Law***

Chapter 176 of the Texas Local Government Code 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 records administrator of Gregg County (County Clerk) no later than the 7<sup>th</sup> business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Texas Local Government Code.



STATEMENT OF QUALIFICATIONS

CONTRACTOR: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

1. Name of Project: \_\_\_\_\_

Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Value of Contract: \$ \_\_\_\_\_

Date Started: \_\_\_\_\_

Date Completed: \_\_\_\_\_

Approximate Quantities of Major Items: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

2. Name of Project: \_\_\_\_\_

Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Value of Contract: \$ \_\_\_\_\_

Date Started: \_\_\_\_\_

Date Completed: \_\_\_\_\_

Approximate Quantities of Major Items: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

3. Name of Project: \_\_\_\_\_

Owner: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Value of Contract: \$ \_\_\_\_\_

Date Started: \_\_\_\_\_

Date Completed: \_\_\_\_\_

Approximate Quantities of Major Items: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

4. Other Project References: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

***CERTIFICATION OF ELIGIBILITY***

By submitting a bid or Bid in response to this solicitation, the bidder/proposer certifies that at the time of submission, he/she is not on the Federal Government's list of suspended, ineligible, or debarred contractors.

In the event of placement on the list between the time of bid/Bid submission and time of award, the bidder/proposer will notify the Gregg County Purchasing Agent. Failure to do so may result in terminating this contract for default.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Printed Name:** \_\_\_\_\_

**PROPOSAL**

**TO: Kelli Davis, Gregg County Buyer**

**FOR: Gregg County Bid No. 2019-903  
ETRA South GA Apron Connector**

The undersigned, as bidder, declares that the only person or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm, or corporation; that he has carefully examined the form of Contract, Notice to Bidders, and Specifications herein referred to, and has carefully examined the locations, conditions and classes of materials of the proposed work; and agrees that he will provide all the necessary labor, machinery, tools, apparatus, and other items incidental to construction, and will do all the work and furnish all the materials called for in the Contract and Specifications in the manner prescribed therein and according to the requirements of the Engineer as therein set forth.

It is further agreed that the quantities of work to be done at unit prices and materials to be furnished may be increased or diminished as may be considered necessary, in the opinion of the Engineer, to complete the work fully as planned and contemplated, 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.

It is further agreed that lump sum prices may be increased to cover additional work ordered by the Engineer and agreed to by Owner, but not required by the Specifications, in accordance with the provisions of the General Conditions. Similarly, they may be decreased to cover deletion of work so ordered.

It is understood and agreed that the base bid work is to be completed in full within **ninety (90)** calendar days beginning on the date stated in the work order on which work is to be commenced. Bidder further agrees to pay as liquidated damages, the sum of **\$1000.00** for each consecutive calendar day thereafter as provided in the General Conditions.

Accompanying this proposal is a certified or cashier's check or bid bond (5% of largest amount bid), payable to Gregg County, Texas for:

\_\_\_\_\_ Dollars (\$\_\_\_\_\_).

The bid security accompanying this proposal shall be returned to the bidder, unless in case of the acceptance of the proposal the bidder shall fail to execute a Contract and to file a Performance, Payment, and Maintenance Bond within fifteen (15) days after its acceptance, in which case the bid security shall become the property of the Gregg County and shall be considered as payment for damages due to delay and other inconveniences suffered by the Owner on account of such failure of the bidder. It is understood that the Gregg County reserves the right to reject any and all bids and to waive any informalities in the bidding.

In the event of the award of a Contract to the undersigned, the undersigned will furnish a Performance and Payment Bond and Maintenance Bond for the full amount of the Contract to secure proper compliance with the terms and provisions of the contract, to insure and guarantee the work until final completion and acceptance, and to guarantee Payment of all lawful claims for labor performed and materials furnished in the fulfillment of the Contract.

**GREGG COUNTY BID NO. 2019-903  
 EAST TEXAS REGIONAL AIRPORT  
 SOUTH GA APRON CONNECTOR  
 BID PROPOSAL**

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL PRICE</u>
1	Mobilization	1	LS	\$ XXXXXXXX	\$
2	Bonds and insurance	1	LS	\$ XXXXXXXX	\$
3	Furnish and install temporary barricades	1	LS	\$ XXXXXXXX	\$
4	Storm Water Pollution Prevention per TCEQ requirements	1	LS	\$ XXXXXXXX	\$
5	Furnish, maintain and remove filter fabric fence	200	LF	\$	\$
6	Furnish, maintain and remove hay bale dikes	1	LS	\$ XXXXXXXX	\$
7	Stabilized construction exit	1	LS	\$ XXXXXXXX	\$
8	Remove and replace unsuitable subgrade with foundation material	50	CY	\$	\$
9	Embankment in place	1500	CY	\$	\$
10	Stockpile topsoil	350	CY	\$	\$
11	Remove and relocate two existing 36" S.E.T. (6:1)	1	LS	\$ XXXXXXXX	\$
12	Construct Class B concrete seal slab (9'x124'x4" thick)	124	SY	\$	\$
13	Furnish and install proposed 36" RCP with filter fabric wrapped joints	224	LF	\$	\$
14	Tie existing 36" RCP into proposed 36" RCP with concrete anchor collar	1	LS	\$ XXXXXXXX	\$
15	Construct 10" thick PCC pavement	740	SY	\$	\$
16	Furnish and install 4' of erosion control matting next to proposed pavement edges	163	SY	\$	\$
17	Reinstall topsoil (min. 4" depth)	1600	SY	\$	\$
18	Furnish and install hydromulch, seed, lime, and fertilizer	1600	SY	\$	\$
19	Furnish and install temporary cool weather seeding	1600	SY	\$	\$
<b>TOTAL AMOUNT BID</b>				\$	\$

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

NOTE: Should bid prices on any items be omitted, the right is reserved to apply the lowest prices submitted by any other bidders for the omitted items in payment for work done under this Proposal. In the event of discrepancies, the Owner reserves the right to accept or reject informalities.

Receipt is hereby acknowledged of the following addenda to the contract Documents:

Addendum No. 1 dated _____	Rec. _____
Addendum No. 2 dated _____	Rec. _____
Addendum No. 3 dated _____	Rec. _____
Addendum No. 4 dated _____	Rec. _____
Addendum No. 5 dated _____	Rec. _____

CONTRACTOR: \_\_\_\_\_

BY: \_\_\_\_\_  
*(Authorized Signature)*

PRINT NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

COUNTY: \_\_\_\_\_

CITY, STATE, ZIP: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

DATE: \_\_\_\_\_

**BID SIGNATURE FORM**

The undersigned agrees this bid becomes the property of Gregg County after the official opening.

The undersigned affirms he has familiarized himself with the local conditions under which the work is to be performed; satisfied himself/herself of the conditions of delivery, handling and storage of equipment and all other matters which may be incidental to the work, before submitting a bid.

The undersigned agrees if this bid is accepted, to furnish any and all items/services upon which prices are offered, at the price(s) and upon the terms and conditions contained in the Specifications. The period for acceptance of this Bid will be ninety (90) calendar days unless a different period is noted by the bidder.

The undersigned affirms that they are duly authorized to execute this contract, that this bid has not been prepared in collusion with any other Bidder, nor any employee of Gregg County, and that the contents of this bid have not been communicated to any other bidder or to any employee of Gregg County prior to the official opening of this bid.

Vendor hereby assigns to purchase any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States, 15 USCA Section 1 et seq., and which arise under the antitrust laws of the State of Texas, Tex. Bus. & Com. Code, Section 15.01, et seq.

The undersigned affirms that they have read and do understand the specifications and any attachments contained in this bid package. ***Failure to sign and return this form will result in the rejection of the entire bid.***

**Signature** \_\_\_\_\_ **X**

Company Name		
Address		
City/State/Zip Code		
Phone:	Office:	Fax:
	Cell:	Email:
Print Name		
Job Title		

CONTRACT DOCUMENTS

## **Certificate of Interested Parties (Form 1295)**

In 2015, the Texas Legislature adopted House Bill 1295, which added Section 2252.908 of the Government Code. The law states that a government entity may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the government entity. The disclosure of interested parties Form 1295 will be completed online and must be submitted to the governmental entity prior to any signed contract and/or vote by the governing authority.

### **The Filing Process:**

1. Prior to award by Commissioners Court, your firm will be required to log in to the Texas Ethics Commission, [https://www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm) and fill out the Electronic Filing Application.
2. Once submitted, the system will generate an electronic Form 1295 displaying a "Certificate Number." Your firm must print and sign Form 1295.
3. **Within ten (10) business days** from notification of pending award by the Gregg County Purchasing Agent, the completed Form 1295 **must** be submitted to Gregg County.
4. Your firm will need to repeat this process and obtain a separate Form 1295 each time you enter into a new contract, renew a contract or make modification and/or amendments to a Gregg County contract.

Instructions and information are available at <https://www.ethics.state.tx.us/tec/1295-Info.htm> or you may call the Texas Ethics Commission at (512) 463-5800.



# 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 CERTIFICATION OF FILING

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

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

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

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

SAMPLE FORM ONLY,  
 MUST COMPLETE ONLINE

5 Check only if there is NO Interested Party.

6 UNSWORN DECLARATION

My name is \_\_\_\_\_, and my date of birth is \_\_\_\_\_

My address is \_\_\_\_\_ (street) \_\_\_\_\_ (city) \_\_\_\_\_ (state) \_\_\_\_\_ (zip code) \_\_\_\_\_ (country)

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

Executed in \_\_\_\_\_ County, State of \_\_\_\_\_, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
 (month) (year)

\_\_\_\_\_  
 Signature of authorized agent of contracting business entity  
 (Declarant)

# STANDARD FORM OF AGREEMENT

Approved as to Legal Form by  
Legal Counsel

STATE OF TEXAS        }  
COUNTY OF GREGG    }

THIS AGREEMENT, made and entered into this \_\_\_\_ day of \_\_\_\_\_, A.D. 2019, by and between the County of Gregg, and State of Texas, acting through its County Judge, thereunto duly authorized so to do, Party of the First Part, hereinafter termed OWNER, and \_\_\_\_\_ of the City of \_\_\_\_\_, County of \_\_\_\_\_, and State of \_\_\_\_\_, Party of the Second Part, hereinafter termed CONTRACTOR.

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

**Gregg County Bid No. 2019-903  
East Texas Regional Airport South GA Apron Connector**

and all extra work in connection therewith, under the terms as stated in this Standard Form of Agreement; all of the documents attached to this Standard Form of Agreement; all Plans, Specifications and drawings for the project as prepared by the OWNER's engineer **Hayes Engineering, Inc.** (herein entitled "ENGINEER"); and all printed or written explanatory materials of said Plans, Specifications and drawings. The CONTRACTOR hereby agrees with the OWNER that the CONTRACTOR shall commence and complete all such construction and work at the 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 and work.

The documents that are attached to and for all purposes made part of this Standard Form of Agreement include the Notice to Bidders, Instructions to Bidders, Conflict of Interest Form, Statement of Qualifications, Certification of Eligibility, CONTRACTOR's Bid Proposal, Bid Signature Form, Bid Bond, Certificate of Interested Parties (Form 1295), Construction Performance Bond, Construction Payment Bond, Maintenance Bond, Certificate of Insurance, Separation of Materials Form, Certificate of Final Completion, Gregg County, Texas Standard Terms and Conditions, Wage Rate Determination, General Conditions, Special Conditions, and Technical Specifications. This agreement shall also include all Plans, Specifications and drawings for the project, as prepared by the ENGINEER, and all printed or written explanatory materials of said Plans, Specifications and drawings. This Standard Form of Agreement and the documents listed herein shall collectively evidence and constitute the entire contract between the parties hereto regarding the subject matter hereof.

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

CONTRACTOR's failure to timely commence work or diligently pursue completion of the work within the time limitations set out herein shall constitute a material breach of this contract. TIME IS OF THE ESSENCE IN THE PERFORMANCE OF THIS CONTRACT.

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 terms and conditions of this contract, including without limitation the General and Special Conditions of Agreement.

Without regard to and notwithstanding any rules on conflicts of law, this contract shall be subject to and interpreted in conformance with the laws of the State of Texas, unless expressly required otherwise by federal law or regulations.

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

GREGG COUNTY, TEXAS  
\_\_\_\_\_  
Party of the First Part (OWNER)

\_\_\_\_\_  
Party of the Second Part (CONTRACTOR)

By: \_\_\_\_\_  
The Hon. Bill Stoudt, County Judge

By: \_\_\_\_\_

ATTEST:

ATTEST:

\_\_\_\_\_  
(Seal)

\_\_\_\_\_  
(Seal)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor or Company)

\_\_\_\_\_  
(Address)

a \_\_\_\_\_ hereinafter called Principal, and  
(Corporation / Partnership)

\_\_\_\_\_  
(Name of Surety Company)

\_\_\_\_\_  
(Address)

hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_  
(Name of Recipient)

\_\_\_\_\_  
(Recipient's Address)

hereinafter called OWNER, in the penal sum of \_\_\_\_\_  
Dollars (\$) \_\_\_\_\_) in lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, successors, and assigns, jointly and severally, firmly in these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER dated the \_\_\_\_\_ day of \_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the construction of:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties in all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

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 WORK to be performed thereunder or the SPECIFICATIONS 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 or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST: \_\_\_\_\_  
(Principal)  
By \_\_\_\_\_  
(Principal Secretary)

(SEAL)  
\_\_\_\_\_  
(Witness as to Principal) (Address)  
\_\_\_\_\_  
(Address)

ATTEST: \_\_\_\_\_  
(Surety)  
By \_\_\_\_\_  
(Witness as to Surety) (Attorney in Fact)  
\_\_\_\_\_  
(Address) (Address)

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor or Company)

\_\_\_\_\_  
(Address)

a \_\_\_\_\_, hereinafter called Principal,  
(Corporation / Partnership)

and \_\_\_\_\_  
(Name of Surety Company)

\_\_\_\_\_  
(Address)

hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_  
(Name of Recipient)

\_\_\_\_\_  
(Recipient's Address)

hereinafter called OWNER, in the penal sum of \_\_\_\_\_ Dollars, (\$ \_\_\_\_\_) in lawful money of the United States, for this payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ a copy of which is hereto attached and made a part hereof for the construction of:

\_\_\_\_\_  
(Project Name)

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUB-CONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUB-CONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

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 WORK to be performed thereunder or the SPECIFICATIONS 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 or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counter-parts, each on of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

ATTEST:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Principal Secretary)

By \_\_\_\_\_

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
(Surety)

\_\_\_\_\_  
(Witness as to Surety)

By \_\_\_\_\_

\_\_\_\_\_  
(Attorney in Fact)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

MAINTENANCE BOND

STATE OF TEXAS §  
COUNTY OF \_\_\_\_\_ §

KNOW ALL MEN BY THESE PRESENTS:

That \_\_\_\_\_  
as principal, and the other subscriber hereto authorized under the laws of the State of Texas to act as surety on bonds for principals, do hereby acknowledge ourselves to be held and firmly bound unto \_\_\_\_\_, "Owner", in the penal sum of \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_) for the payment whereof the said principal and surety do bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally. The conditions of this obligation are such that:

WHEREAS, the said principal has entered into a certain written contract with \_\_\_\_\_, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for the completion of:

\_\_\_\_\_  
\_\_\_\_\_

all of such work to be done as set out in full in said contract and the plans and specifications therein referred to and made a part hereof as fully and to the same extent as if copied at length herein.

WHEREAS, under the plans, specifications and contract, it is provided that the Contractor shall maintain and keep in good repair the work herein contracted to be done for a period of one (1) year from the date of written acceptance of said work and to do all necessary repairing and/or reconstructing in whole or in part of said improvements that should be occasioned by settlement of foundation, defective workmanship or materials furnished in the construction of any part thereof, or any of the accessories thereof constructed by the Contractor; be it understood that the purpose of this section is to cover all defective conditions arising by reason of defective material or workmanship and charge the same against that said Contractor and Surety on this obligation, and the said Contractor and Surety shall be subject to the liquidation damages mentioned in said contract for each day's failure on its part to comply with the terms of said provisions of 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 one (1) year, as provided, then these presents shall be null and void and have no further effect. If default shall be made by the said Contractor in the performance of its contract to so maintain and repair said work, then these presents shall have full force and effect and said Owner shall have and recover damages from said Contractor and its Principal and Surety. It is further agreed that this obligation shall be continuing, one against the Principal and Surety herein, and that successive recoveries may be hereon for successive breaches until the full amount shall have been exhausted. 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, the aggregate liability of Surety hereunder is limited to the penal sum of this bond.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on the respective dates written below their signatures.

ATTEST/SEAL: (if a corporation)

WITNESS: (if not a corporation)

\_\_\_\_\_  
(Full Name of Principal)

By \_\_\_\_\_  
Name \_\_\_\_\_  
Title \_\_\_\_\_

By \_\_\_\_\_  
Name \_\_\_\_\_  
Title \_\_\_\_\_  
Date \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

ATTEST/SEAL: (if a corporation)  
(if not a corporation)

\_\_\_\_\_  
(Full Name of Surety) WITNESS:

By \_\_\_\_\_  
Name \_\_\_\_\_  
Title \_\_\_\_\_

By \_\_\_\_\_  
Name \_\_\_\_\_  
Title \_\_\_\_\_  
Date \_\_\_\_\_

The name and address of the resident agent of Surety is:

\_\_\_\_\_  
\_\_\_\_\_

NOTE: Date of Maintenance Bond must not be prior to date of contract.

## SEPARATION OF MATERIALS FORM

**STATE SALES TAX.** The Contractor's attention is directed to paragraph No. 3 of Ruling No. 9 by obtaining the necessary permit or permits from the State Comptroller allowing the purchase of materials for incorporation in this project without having to pay the Limited Sales, Excise and Use Tax at the time of purchase. Such bidders must submit segregated prices for the total cost of materials and total cost of services, and the successful bidder must require his sub-contractors to obtain such permits and to sign written sub-contracts in which the prices are segregated for the total cost of materials and the total cost of services. Total materials cost should not include materials which are used or consumed in performing the work, but do not become a part of the completed installation.

After the bid opening and prior to execution of contract, the low bidder will be required to provide a separation of materials costs and labor costs for the amounts of the base bid and any alternatives. The following form shall be used to provide this information. This form shall be submitted with the executed contract and such statement will become a part of the contract:

### STATEMENT OF MATERIALS AND SERVICES

**Gregg County, Texas Bid No. 2019-903**

**Project Name: ETRA South GA Apron Connector**

Total Materials Cost:                   \$ \_\_\_\_\_

Total Service Cost:                    \$ \_\_\_\_\_

**TOTAL CONTRACT PRICE:**        \$ \_\_\_\_\_

Note: The total materials cost plus the total services cost must equal the amount shown of the total contract price.

CERTIFICATE OF FINAL COMPLETION  
OF  
Gregg County Bid No. 2019-903 for  
ETRA South GA Apron Connector

CONTRACT DATED: \_\_\_\_\_

STATE OF TEXAS            }  
COUNTY OF \_\_\_\_\_}

Before me, the undersigned authority, a Notary Public in and for \_\_\_\_\_ County, Texas, on this day personally appeared \_\_\_\_\_ who, being by me duly sworn on his oath, says that he is/represents \_\_\_\_\_, the contractor who has performed a contract with Gregg County for the construction of the work described above, and is duly authorized to make this affidavit; that he has personally examined the work described above as required by the specifications of Gregg County attached to the contract; that said work and all items thereof have been completed and all known defects made good; that thereof have been completed and all known defects made good; that all surplus material, refuse, dirt and rubbish have been cleaned up, removed and disposed of; that all parts of the work are in a neat, tidy, finished condition and ready in all respects for acceptance by the County; that all the required work has been performed in accordance with the specifications, that rates of pay for all labor employed on said work have not been below the minimum set out in Labor Classification and Minimum Wage Scale in said Specifications and that within the knowledge of affiant all just bills for labor and material and for the rental or use of any equipment or apparatus used in, on, or in connection with the work have been paid in full by the Contractor.

CERTIFIED TRUE AND CORRECT

\_\_\_\_\_  
Contractor Signature

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
Notary Public in and for  
\_\_\_\_\_ County, Texas

STANDARD TERMS AND CONDITIONS  
GREGG COUNTY, TEXAS



***STANDARD TERMS AND CONDITIONS***  
***Gregg County, Texas***

**Awarded vendor certifies and agrees to the following:**

1. Non-performance or non-compliance of the Standard Terms & Conditions, or non-performance or non-compliance with the Specifications shall be basis for termination by Gregg County of the bid or final executed contract. Termination in whole, or in part, by the County may be made solely at the County's option and without prejudice to any other remedy to which Gregg County may be entitled by law or in equity, or elsewhere under this Bid or the agreement, by giving thirty (30) days written notice to the vendor with the understanding that all work being performed under this agreement shall cease upon the date specified in such notice. Gregg County shall not pay for work, equipment, services or supplies, which are unsatisfactory. The Respondent may be given reasonable opportunity prior to termination to correct any deficiency. This however shall in no way be construed as negating the basis for termination for non-performance or non-compliance.
2. Respondent shall make all inquiries necessary to be thoroughly informed as to the specifications and all other requirements proposed in the Bid. Any apparent omission or silence of detail in the description concerning any point in the specifications shall be interpreted on the basis of best commercial practices, and best commercial practices shall prevail.
3. Invoices shall be sent to the Gregg County Purchasing Department, 101 East Methvin, St. 205, Longview, TX, 75601. Invoices must detail the materials/equipment/services delivered and **must reference the Gregg County Purchase Order Number.** Payments are processed after the Purchasing Department has verified that the material or equipment and/or services have been delivered in good condition and that no unauthorized substitutions have been made according to specifications. Neither a signed receipt nor payments shall be construed as an acceptance of any defective work, improper materials, or release of any claim for damage.
4. Only the Commissioners Court of Gregg County, Texas acting as a body may enter into any type of agreement or contract on behalf of Gregg County. Department heads, other elected or appointed officials, are not authorized to enter into any type of agreement or contract on behalf of Gregg County, or to agree to any type of supplemental agreements or contracts for goods or services. Contracts are subject to review by the County's attorney prior to signature by the authorized County official.

5. The Respondent shall be considered an independent Contractor and not an agent, servant, employee or representative of the County in the performance of the work. No term or provision, hereof, or act of the Respondent shall be construed as changing that status.
6. The Respondent shall defend, indemnify, and shall save whole and harmless the County and all its officers, agents, employees from and against all suits, actions, or claims of the character, name and description brought for or on account of any injuries or damages (including but not restricted to death) received or sustained by any person(s) or property on account of, arising out of, or in connection with the performance of the work, including without limiting the generality of the foregoing, any negligent act or omission of the Respondent on the execution or performance of the Contract.
7. The Respondent agrees, during the performance of the work, to comply with all applicable codes and ordinances of the City of Longview, Gregg County, or State of Texas as they may apply, as these laws may now read or as they may hereafter be changed or amended.
8. The awarded vendor shall obtain from the appropriate City, Gregg County, or State of Texas the necessary permit(s) required by the ordinances of the City, County, or State, for performance of the work.
9. The awarded contractor shall not sell, assign, transfer or convey the agreement in whole or in part, without the prior written consent of the County.
10. The parties herein agree that the agreement shall be enforceable in Gregg County, Texas, and if legal action is necessary to enforce it, exclusive venue shall lie in Gregg County, Texas.
11. The agreement shall be governed by, and construed in accordance with, the Laws of the State of Texas and all applicable Federal Laws.
12. Funding Clause - Payments required to be made by Gregg County under the terms of the agreement shall be contingent upon and subject to the initial and continuing appropriation of funding for the agreement by and through the Commissioners Court of Gregg County, Texas. In the event appropriations for funding of the agreement are not approved by and through the Commissioners Court, the contract shall terminate. Gregg County shall, submit written notice to Respondent thirty (30) days prior to such termination. Upon notice of termination, as provided in this paragraph, the Respondent may submit a final invoice to the County and coordinate with the Purchasing Agent to remove all property belonging to said Respondent as soon as possible. Payment for final invoice will be subject to verification and approval by the purchasing agent. Thereupon, Gregg County will be released from its obligation to make further payments.
13. Gregg County is exempt from federal excise and sales taxes, ad valorem taxes and personal property taxes; therefore, tax must not be included in proposals tendered. Proposals offered must be complete and all inclusive. Gregg County will not pay additional taxes, surcharges or other fees not included in bid prices.

14. In case any one or more of the provisions contained in the agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and the agreement shall be considered as if such had never been contained herein.
15. The agreement embodies the complete agreement of the parties hereto, superseding all oral or written previous and contemporary agreements between the parties and relating to matters herein, and except as otherwise provided herein cannot be modified without written agreement of the parties. A contract will be executed after determination of the award.
16. Awarded Respondent must provide a certificate of insurance conforming to the above listed requirements or a statement of Respondent's insurance carrier certifying that the required coverage shall be obtained by Respondent within ten (10) days of formal award of the Contract. In the case where a certification letter from an insurance carrier is attached to the bid in lieu of an insurance certificate, any formal award of a contract shall be contingent upon required coverage being put into force **prior** to any performance required by subject agreement.
17. Gregg County reserves the right to terminate an agreement/contract at any time, without cause, upon thirty (30) days written notice to awarded contractor. Upon termination, Gregg County shall pay Respondent for those costs directly attributable to work done or supplies obtained in preparation for completion or compliance with the Contract, except no payment shall be made for costs recoverable by Respondent in the normal course of doing business or which can be mitigated through the sale of supplies or materials obtained for use under this Contract. It is further agreed by Respondent that Gregg County shall not be liable for loss or reduction in any anticipated profit.
18. Gregg County is wholly committed to developing, establishing, maintaining, and enhancing minority business involvement in the total procurement process. The County, its contractors, their suppliers and sub-contractors, vendors of goods, equipment, services, and professional services, shall not discriminate on the basis of race, color, religion, national origin, age, handicap, or sex in the award and/or performance of contracts. However, competition and quality of work remain the ultimate standards in contractor, sub-contractor, vendor service, professional service, and supplier utilization. All vendors, suppliers, professionals and contractors doing business or anticipating doing business with Gregg County shall support, encourage and implement steps toward our common goal of establishing equal opportunity for all citizens of Gregg County.
19. The awarded contractor agrees that Gregg County assumes no responsibility for any costs associated with any administrative or judicial proceedings resulting from the solicitation process.
20. The awarding Respondent shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the work for at least two (2) years. County shall have access to all records, documents and information collected and/or maintained by others in the course of the administration of this agreement.

21. Contractor understands and agrees that in returning a response to this proposal/bid that it is neither an "offer" nor an "acceptance" until such time a formal contract is authorized/awarded by the Gregg County Commissioners Court; if any.
22. Gratuities– Gregg County may, by written notice to the Seller, cancel this contract without liability to Seller if it is determined by Gregg County that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the Seller, or any agent or representative of the Seller, to any officer or employee of Gregg County with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such a contract. In the event this contract is canceled by Gregg County pursuant to this provision, Gregg County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by Seller in providing such gratuities.
23. Termination - The performance of work under this order may be terminated in whole or in part by the Buyer in accordance with this provision. Termination of work hereunder shall be effected by the delivery to the Seller of a "Notice of Termination" specifying the extent to which performance of work under the order is terminated and the date upon which such termination becomes effective. Such right of termination is in addition to and not in lieu of rights of Buyer.
24. Force Majeure - If, by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this Agreement then such party shall give notice and full particulars of such Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch. The term Force Majeure as employed herein, shall mean acts of God, strikes, lockouts, or other industrial disturbances, act of public enemies, orders of any kind of government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquake, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines or canals or other causes not reasonably within the control of the party claiming such inability. It is understood and agreed that the settlement of strikes and lockouts shall be entirely within the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable in the judgment of the party having the difficulty.



25. Assignment Delegation - No right or interest in this contract shall be assigned or delegation of any obligation made by Seller without the written permission of the Buyer. Any attempted assignment or delegation by Seller shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.
26. Waivers - No claim or right arising out of a breach of this contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.
27. Modification - Contract can be modified or rescinded only by a written and signed agreement by both of the parties duly authorized agents.
28. Applicable Law - This agreement shall be governed by the Uniform Commercial Code. Wherever the term "Uniform Commercial Code" is used, it shall be construed as meaning the Uniform Commercial Code as adopted in the State of Texas as effective and in force on the date of this agreement.
29. Advertising - Seller shall not advertise or publish, without Buyer's prior consent, the fact that Buyer has entered into this contract, except to the extent necessary to comply with proper requests for information from an authorized representative of the federal, state, or local government.
30. Right to Assurance - Whenever one party to this contract in good faith has reason to question the other party's intent to perform, he may demand that the other party give written assurance of his intent to perform. In the event a demand is made and no assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the contract.
31. Venue - Both parties agree that venue for any litigation arising from this contract shall be in Longview, Gregg County, Texas.
32. No negotiations, decisions, or actions shall be executed by the vendor as a result of any discussions with any public service official, employee and/or consultant. Only those transactions provided in written form may be considered binding.
33. The contents of each vendor's bid, including specifications shall remain valid for a minimum of 90 calendar days from the Bid due date.
34. Subcontracting: The Vendor must function as the single point of responsibility for the Agency. No vendor shall submit a proposal comprised of separate software packages from multiple subcontractors.

35. Conflict of Interest: No public official shall have interest in this contract except in accordance with Vernon's Texas Codes Annotated, Local Government Code Title 5, Subtitle C, Chapter 171. State Law (CHAPTER 176 of the Local Government Code) requires the filing of a CONFLICT OF INTEREST QUESTIONNAIRE by certain individuals and businesses.
36. Design, Strength, Quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practice.
37. All Hardware of any other item offered in this bid must be new and unused, unless otherwise specified, in first-class condition and of current manufacture.
38. Descriptions: Whenever an article or material is defined or used in the BID specifications by describing a proprietary product or by using the name of a manufacturer, model number, or make, the term "or equal" if not inserted, shall be implied. Any reference to specified article or material shall be understood as descriptive, NOT restrictive, and is used to indicate type and quality level desired for comparison purposes unless otherwise noted. Bids must be submitted on units of quantity specified, extended, and totaled. In the event of discrepancies in extension, the unit prices shall govern.
39. Addendum: Any interpretations, corrections or changes to this Bid and Specifications will be made by addendum, unless otherwise stated. Issuing authority of addendum shall be the Commissioners' Court of Gregg County, Texas. Addendum will be mailed, emailed, or faxed to all that are known to have received a copy of the Bid. Vendors shall acknowledge receipt of all addenda and include receipt and response to addenda with submission.
40. Patents/Copyrights: The successful vendor agrees to protect Gregg County from claims involving infringements of patents and/or copyrights.
41. Contract Administrator: The Contract Administrator will serve as sole liaison between the Gregg County Commissioners Court and affected Gregg County Departments and the successful vendor. Unless directly outlined in this specification the vendor shall consider no one but the Contract Administrator authorized to communicate, by any means, information or suggestions regarding or resembling this bid throughout the proposal process. The Contract Administrator has been designated the responsibility to ensure compliance with contract requirements, such as but not limited to, acceptance, inspection and delivery. The County will not pay for work, equipment or supplies, which it deems unsatisfactory. Vendors will be given a reasonable opportunity to correct deficiencies before termination. This however, shall in no way be construed as negating the basis for termination for non-performance.
42. Packing slips or other suitable shipping documents shall accompany each special order shipment and shall include:

- (a) Name and address of successful vendor;
  - (b) Name and address of receiving department and/or location;
  - (c) Gregg County Purchase Order number; and,
  - (d) Descriptive information of the materials shipped or services rendered, including item numbers, serial numbers, quantities, number of containers and package numbers, address/location of services rendered, as applicable.
43. Unless otherwise indicated, items will be new, unused, and in first class condition in containers suitable for damage-free shipment and storage.
44. Invoices must show all information as stated above, and will be issued for each purchase order.
45. Equipment/Good/Services supplied under this contract shall be subject to the County's approval. Item(s) found defective or not meeting specifications shall be picked up and replaced by the successful vendor within one (1) week after notification at no expense to the County. If item(s) is not picked up within one (1) week after notification, the item(s) will become a donation to the County for disposition.
46. Warranty: Successful vendor shall warrant that all equipment/goods/services shall conform to the proposed specifications and/or all warranties stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title.
47. Remedies: The successful vendor and Gregg County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.
48. Silence of Specification: The apparent silence of specifications as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.
49. The Contractor shall procure and maintain at its sole cost and expense for the duration of this Agreement insurance against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, volunteers, employees or subcontractors. The Contractor's insurance coverage shall be primary insurance with respect to the County, its officials, employees and volunteers. Any insurance or self-insurance maintained by the County, its officials, employees or volunteers shall be considered in excess of the Contractor's insurance and shall not contribute to it. Further, the Contractor shall include all subcontractors as additional insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein. **All Certificates of Insurance and endorsements shall be furnished to the County's Purchasing Agent and approved by the County before work commences.**

50. ***Standard Insurance Policies Required:***

- a. Commercial General Liability Policy
- b. Automobile Liability Policy
- c. Worker's Compensation Policy

General Requirements applicable to all policies:

- a. Only insurance carriers licensed and admitted to do business in the State of Texas will be accepted.
- b. Deductibles shall be listed on the Certificate of Insurance and are acceptable only on a per occurrence basis for property damage only.
- c. "Claims Made" policies will not be accepted.
- d. Each insurance policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to Gregg County.
- e. All insurance policies shall be furnished to Gregg County upon request.

Commercial General Liability

- a. General Liability insurance shall be written by carrier with an A:VIII or better rating in accordance with the current Best Key Rating guide.
- b. Minimum Combined Single Limit of \$1,000,000.00 per occurrence for bodily Injury and property damage with Gregg County named as an additional insured.
- c. No coverage shall be deleted from the standard policy without notification of individual exclusions being attached for review and acceptance.

Automobile Liability

- a. General Liability Insurance shall be written by a carrier with an A:VIII or better rating in accordance with the current Best Key Rating Guide.
- b. Minimum Combined Single Limit of \$600,000.00 per occurrence for bodily injury and property damage.

51. ***Workers Compensation Insurance*** - Pursuant to the requirements set forth in Title 28, Section 110.110 of the Texas compensation insurance policy; either directly through their employer's policy (the Contractor's or subcontractor's policy) or through an executed coverage agreement on an approved TWCC form. Accordingly, if a subcontractor does not have his or her own policy and a coverage agreement is used, Contractors and subcontractors must use that portion of the form whereby the hiring contractor agrees to provide coverage to the employees of the subcontractor. The portion of the form that would otherwise allow them not to provide coverage for the employees of an independent contractor may not be used.

The worker's compensation insurance shall include the following terms:

- a. Employer's Liability limits of \$500,000.00 for each accident is required.

- b. "Texas Waiver of Our Right to Recover from Others Endorsement" shall be included in this policy. (Waiver of Subrogation)

Pursuant to the explicit terms of Title 28, Section 110.110 (c) (7) of the Texas Administrative Code, the Proposal specifications, this Agreement, and all subcontracts on this Project must include the following terms and conditions in the following language, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

A. Definitions:

Certificate of coverage ("certificate")- A copy of a certificate of insurance, a certificate of authority to self-insure issued by the division, or a coverage agreement (DWC Form-81, DWC Form-82, DWC Form-83, or DWC Form-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 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

H. The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Department of Insurance, Division of Workers' Compensation, 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, Section 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 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 the 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 division. 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.

***CERTIFICATES OF INSURANCE*** shall be prepared and executed by the insurance company or its authorized agent, and shall contain the following provisions and warranties:

- a. The company is licensed and admitted to do business in the State of Texas.
- b. The insurance policies provided by the insurance company are underwritten on forms that have been provided by the Texas State Board of Insurance or ISO.
- c. All endorsements and insurance coverage according to requirements and instructions contained herein.
- d. The form of the notice of cancellation, termination, or change in coverage provisions to Gregg County.
- e. Original endorsements affecting coverage required by the section shall be

**RELATING TO STATE CONTRACTS WITH AND INVESTMENTS IN COMPANIES THAT BOYCOTT ISRAEL AND INVESTMENTS IN COMPANIES THAT DO BUSINESS WITH Iran, Sudan, or any known foreign terrorist organizations**

Effective September 1, 2018, Contractor/Vendor verifies that it/he/she does not boycott Israel and will not boycott Israel during the term of this contract. The term "boycott Israel" is defined by Texas Government Code Section 808.001, effective September 1, 2018. Contractor/Vendor further verifies that it/he/she is not engaged in business with Iran, Sudan, or any foreign terrorist organization. The term "foreign terrorist organization" means an organization designated as a foreign terrorist organization by the United States Secretary of State as authorized by 8 U.S.C. Section 1189. furnished with the certificates of insurance.



## ***BONDING REQUIREMENTS***

If applicable, a Bid Bond shall be required. Pursuant to the provisions of Section 262.032 (a) of the Texas Local Government Code, if the contract contemplated by this request is a bid for the construction of public works, or will be under a contract exceeding \$100,000.00, Gregg County may require the vendor to execute a good and sufficient bid bond in the amount of five percent (5%) of the total contract price. Said bond shall be executed with a surety company authorized to do business in the State of Texas.

If applicable, a Performance Bond shall be required. Pursuant to the provisions of Section 262.032 (b) of the Texas Local Government Code, within thirty (30) days of the date of the signing of a contract or issuance of a purchase order following the acceptance of a bid by Gregg County Commissioners Court and prior to commencement of the actual work, the successful vendor shall furnish a performance bond to Gregg County for the full amount of the contract if the contract exceeds \$50,000.00. Said bond shall be for the purpose of insuring the faithful performance of the work in accordance with the plans, specifications and contract documents associated with the contract.

If applicable, a Payment Bond shall be required. Pursuant to the provisions of Section 2253.021, Texas Government Code, if the amount of the contract awarded to the successful vendor exceeds \$25,000.00, the successful vendor shall execute a payment bond in the amount of the contract. Said bond is solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the prime contractor or a subcontractor to supply public work labor or material. This bond must be issued to the County within ten (10) days of the award of the contract and before vendor begins the work.

If applicable, a Performance Bond shall be required. Pursuant to the provisions of Section 2253.021, Texas Government Code, if the amount of the contract awarded to the successful vendor exceeds \$100,000.00, the successful vendor shall execute a performance bond in the amount of the contract. Said performance bond is solely for the protection of Gregg County and is conditioned on the faithful performance of the work in accordance with the plans, specifications, and contract documents. This bond must be issued to the County within ten (10) days of the award of the contract and before the vendor begins the work.

## ***CRIMINAL BACKGROUND CHECKS***

**Any contracts will require vendors to enter sensitive security areas. These include, but are not limited to, Gregg County Courthouse, Gregg County Sheriff's Department and/or Gregg County Jails.**

**The following will apply to awarded vendor personnel.**

- The successful bidder shall provide information, including, but not limited to, name, date of birth, and driver's license number for each individual who will be performing work on Gregg County property.
- Vendor personnel who perform work on Gregg County property must submit to and pass a Sheriff's Department Criminal Background Check. That status must be maintained by all vendor personnel entering County buildings for the duration of the contract.
- Criminal Background checks conducted by your firm may or may not be acceptable to certain departments depending on their particular requirements. The County reserves the right to conduct additional Criminal Background Checks as it deems necessary.
- Award of a contract could be affected by your firms' refusal to agree to these terms. Award could also be affected if your firm is unable to supply personnel who can pass a Criminal Background Check.

**The Criminal Background Check applies to the individual and not the company.**

## SPECIAL CONDITIONS

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## SPECIAL CONDITIONS

1. OWNER. Whenever the term "Owner" appears in these specifications, it shall be understood to mean Gregg County, Texas.
2. ENGINEER. The word "Engineer" in these specifications shall be understood as referring to Hayes Engineering, Inc., 2126 Alpine St., Longview, Texas 75601, Engineer of the Owner, or such other Engineer, Supervisor or Inspector as may be authorized by said Owner to act in any particular position.
3. EXAMINATION OF SITE OF PROJECT. Prospective bidders shall make a careful examination of the site of the project, soil and water conditions to be encountered, improvements to be protected, disposal sites for surplus materials not designated to be salvaged materials, and methods of providing ingress and egress to private properties and of handling traffic during construction of the entire project.
4. QUALIFICATION OF LOW BIDDER. Before being awarded a contract, the low bidder shall submit such evidence as the Engineer may require to establish his financial responsibility, experience, and possession of such equipment as may be needed to prosecute the work in an expeditious, safe, and satisfactory manner.  
  
Should the low bidder fail to produce evidence satisfactory to the Engineer on any of the foregoing points, he may be disqualified and the work awarded to the next low bidder so qualifying.
5. AWARD OF THE CONTRACT. The Owner, acting through its authorized representatives, will notify the successful bidder, in writing, within ninety (90) days after the date of receiving bids of its acceptance of this proposal. The Contractor shall complete the execution of the required Bond and Contract within fifteen (15) days of such notice.
6. ADDENDA. Bidders desiring further information or interpretation of the Plans or Specifications must make request for such information to the Engineer, prior to 48 hours before the bid opening. Answers to all such requests will be given in writing to all bidders in Addendum form, and all Addenda will be bound with, and made a part of, the Contract Documents. No other explanation or interpretation will be considered official or binding. Should a bidder find discrepancies in, or omission from the Plans, Specifications, or other Contract Documents, or should he be in doubt as to their meaning, he should at once notify the Engineer in order that a written Addendum may be sent to all bidders. Any addenda issued prior to 24 hours of the opening of bids will be mailed or delivered to each Contractor contemplating the submission of a proposal on this work. The proposal as submitted by the Contractor will be so constructed as to include any addenda if such are issued by the Engineer prior to 24 hours of the opening of bids.
7. BASIS FOR BID AWARD. If no alternates are specified in the bid proposal, award will be made to the lowest responsible, responsive bidder. However, the Owner reserves the right to reject any and all bids and to waive any irregularities as may be deemed best and in the Owner's interest.
8. TIME FOR COMPLETION. The time allowed for completion of all items of work shall be ninety (90) consecutive calendar days for the base bid work, which time shall begin the tenth (10th) day after issuance of the Work Order. The Work Order shall consist of a written request by the Engineer for the Contractor to proceed with the construction of the project.
9. LIQUIDATED DAMAGES FOR DELAY. The Contractor agrees that time is the essence of this Contract, and that for each day of delay beyond the number of calendar days herein agreed upon for the completion of the work herein specified and contracted for (after due allowance for such extension of time as is provided for in the General Conditions of Agreement) the Owner may withhold, permanently from the Contractor's total compensation, the sum of One Thousand Dollars (\$1000.00) per calendar day or an

amount equal to actual damages incurred by the Owner, whichever is greater, as stipulated damages for such delay.

10. RIGHTS OF VARIOUS INTERESTS. Wherever work being done by the Owner's employees or by other Contractors is contiguous to work covered by this contract, the respective rights of the various interests involved shall be established by the Engineer to secure the completion of the various portions of the work in general harmony.

11. CORPORATE CONTRACTS. Corporate contractors to be eligible to enter into contract with the Owner shall be qualified to do business in the State or States where the work is to be performed. All licensing requirements shall be complied with. Foreign corporations which have not domesticated or otherwise become licensed in the State or States where work will be performed shall obtain a permit to do business in such State or States pursuant to the State's requirements.

12. PROPOSALS. Proposals must be submitted on forms furnished by the Owner or the Owner's Engineer, Hayes Engineering, and endorsed as provided in the Contract Documents.

Proposals must be submitted filled out with ink or typewriter and without erasure, interlineation or changes, and if not made in accordance with the General Conditions and other contract documents, will be subject to rejection as irregular, yet the Owner reserves the right to waive any irregularities.

Proposals will be made in the name of the principal and, in a co-partnership, the names of all partners shall be given. Exact post office address shall be given in all cases. If proposals are submitted by an agent, satisfactory evidence of agency authority must accompany the proposal.

13. IRREGULAR PROPOSALS. Proposals shall be considered irregular and may be rejected for the following reasons unless otherwise provided by law:

- a. If the proposal form furnished to the Contractor by the Owner or the Owner's Engineer is not used or is altered;
- b. If there are unauthorized additions or conditional bids, or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning;
- c. If the bidder adds any provisions reserving the right to accept or reject any award, or to enter into a contract pursuant to an award;
- d. If the unit or lump sum prices contained in the bid schedule are obviously unbalanced either in excess or below the reasonable cost analysis values;
- e. If the bidder fails to insert a unit price for every pay item indicated except in the case of authorized alternate pay items;
- f. If the bidder fails to complete the proposal in any other particulars where information is requested so bidder's proposal may be properly evaluated.

The Owner reserves the right to reject any or all bids and to waive irregularities as may be deemed best and in the Owner's interest.

14. RETURN OF BID SECURITY. Bid security of the lowest two or more bidders may be retained until a contract is executed or rejection made by the Owner. Other bid security will be returned only after the canvass and tabulation of bids is completed.

15. FAILURE TO EXECUTE CONTRACT. Should the successful bidder fail to execute the contract and furnish bonds satisfactory to the Owner to validate the same within fifteen (15) days after award of contract, his bid security shall be forfeited to the Owner as liquidated damages.

16. RIGHT-OF-ENTRY. Contractor shall provide the Owner, the Owner's Architect or Engineer, or representative of the Federal, State, County, District and Municipal governmental services proper facilities for access to the work wherever it is in preparation or progress.

17. ACCESS ROUTES. The plans provide phase specific access routes. The Contractor shall request in writing from the Engineer authorization to use routes other than as specified in the plans. The Contractor shall leave all routes in as good or better condition as found prior to use of the route. The Contractor shall maintain mechanically operated brooms to keep pavements clear of FOD. The Contractor shall coordinate access through security gates with the onsite Deputy Sheriff's office at the start and end of all work days.

18. CONSTRUCTION ACTIVITY AND AIRCRAFT MOVEMENTS. Safety requirements for construction activities effecting aircraft operations and movements shall be coordinated with the Airport, resident project representative, and the FAA. The work sequence shall have minimum disruption to Airport operations. The associated restrictions and limitations has been outlined in the Contract Provisions and shall be included in the Contractor's unit pricing.

While the Contractor is performing the contractual work, all active pavements shall remain in operation to the maximum extent possible. Aircraft operations shall always have priority over the Contractor's construction activities. The Contractor, his employees, subcontractors, suppliers, and all other persons shall comply with the project specific construction phasing and safety plan.

19. REFERENCE SPECIFICATIONS. Where reference is made in these specifications to specifications compiled by other agencies, organizations or departments, such reference is made for expediency and standardization from the material supplier's point of view, and such specifications referred to are hereby made a part of these specifications. Any reference to standard specifications in any of the Contract Documents shall always imply the latest edition of said standard specification or specifications available at time notice inviting Contractors to bid is published unless otherwise stated.

20. TRADE NAMES AND MATERIALS. No material which has been used by the Contractor for any temporary purpose whatever is to be incorporated in the permanent structure without written consent of the Engineer.

Where materials or equipment are specified by a trade or brand name, it is not the intention of the Owner to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality of performance, and to establish an equal basis for the evaluation of bids. Where the words "equivalent", "proper", or "equal to" are used, they shall be understood to mean that the thing referred to shall be proper, the equivalent of, or equal to some other thing, in the opinion or judgment of the Engineer. Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. Notwithstanding that the words "or equal to" or other such expressions may be used in the specifications in connection with a material, manufactured article or process, the materials, article or process specifically designated shall be used, unless a substitute shall be approved in writing by the Engineer, and the Engineer shall have the right to require the use of such specifically designated material, article or process.

21. QUALITY OF MATERIALS. In the absence of detailed specifications in other sections, all materials shall conform to the latest standards of the American Society for Testing Materials.



22. MATERIALS, SERVICES, AND FACILITIES. It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, equipment rental, water, heat, light, fuel, power, transportation, superintendence, temporary construction of every nature and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time.

23. WORKMANSHIP, MATERIALS, EQUIPMENT, AND STORAGE. All work done and all materials and equipment furnished by the Contractor shall strictly conform to the plans, drawings, and specifications. Competent labor, mechanics, and tradesmen shall be used to supervise the installation of equipment as may be required by the Engineer. Any special tools or equipment which may be required for first class work shall be provided by the Contractor.

The acceptance at any time of materials by or in behalf of the Owner shall not be a bar to future rejection if they are subsequently found to be defective or inferior in quality or uniformity to the material specified, or are not as represented to the Engineer or Owner.

Contractor shall be responsible for the care and storage of materials delivered on the work site or purchased for use thereon. Stored materials shall be carefully and continuously protected from damage or deterioration and so located as to facilitate inspection by the Owner and Engineer. This responsibility for the care and storage of materials shall be with the Contractor whether such materials are furnished by the Contractor or by the Owner.

24. INSPECTION AND TESTING OF MATERIALS.

- a. During the progress of the work, it shall be subject to the inspection and observance of the Engineer, and the contractor shall afford every reasonable facility and assistance to the Engineer to make such inspection thorough and intelligent. If any work is covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for examination at the Contractor's expense.
- b. The fact that the Engineer is on the job site shall not be taken as an acceptance of the Contractor's work or any part of it. Contractor shall notify the Engineer upon completion of his contract and the work shall be given final inspection by the Engineer and any tests shall be witnessed by the Engineer. If all parts of the work are acceptable and substantially comply with the intent of the plans, drawings, and specifications, a recommendation of final acceptance will be made by the Engineer to the Owner. If parts of the work are not acceptable and require additional work by the Contractor to complete the project, necessitating additional inspection by the Engineer, the cost of such additional inspections including time, travel, and lodging, shall be paid for by the Contractor to the Owner who will reimburse the Engineer.
- c. Contractor shall submit to the Engineer seven (7) days in advance of construction, and without charge, samples or specifications of materials he proposes to use and shall not use these materials until he has received approval from the Engineer.
- d. The Owner shall direct and furnish all items necessary for the testing of all materials called for in the specifications. The Owner shall pay the cost of the tests, including all transportation charges unless otherwise noted in the specifications. The cost of re-testing any failed specimens shall be paid by the Contractor.

- e. All tests, unless otherwise provided, shall be in accordance with the pertinent sections of the latest edition of the standards applicable to the material or devices to be tested. A partial list of the principal societies referred to and their abbreviations follows:

ASTM	American Society for Testing Materials
AISC	American Institute of Steel Construction
ACI	American Concrete Institute
FS	Federal Specifications
AASHO	American Association of State Highway Officials
AWWA	American Water Works Association

- f. All parts of the improvements shall conform to the standard of construction as given in detail under the various items, and in general to the intent thereof, and if they do not conform, shall be made to do so by rebuilding or replacing or otherwise as directed by the Engineer or Owner before acceptance shall be made.

25. **BARRICADES, LIGHTS, AND WATCHMEN.** Where the work is carried on in or adjacent to any active pavement, the Contractor shall at his own cost and expense furnish and erect such barricades, staking, shall provide such watchmen, and shall provide such other precautionary measures for the protection of aircraft, persons or property and of the work as are necessary. Barricades shall be as shown on the plans. From sunset to sunrise the Contractor shall furnish and maintain at least one light at each barricade and sufficient number of barricades shall be erected to keep vehicles and/or aircraft from entering or exiting active pavements. The Contractor shall furnish watchmen in sufficient numbers to protect the work.

The Contractor will be held responsible for all damage to the work due to failure of barricades, signs, lights, and watchmen to protect it, and whenever evidence is found of such damage, the Engineer may order the damaged portion immediately removed and replaced by the Contractor at his cost and expense. The Contractor's responsibility for the maintenance of barricades, signs, and lights, and for providing watchmen shall not cease until the project shall have been accepted by the Owner.

The Contractor shall use only battery powered lights or other lights satisfactory to the Engineer. Smudge pots or other lights which have an open flame will not be permitted.

26. **DISPOSAL OF WASTE AND SURPLUS EXCAVATION.** All trees, stumps, slashings, brush or other debris removed from the job site as a preliminary to the construction of the work or its appurtenances shall be removed from the property and disposed of in a manner approved by the Engineer.

All excavated earth in excess of that required for backfilling shall be removed from the job site and disposed of in a satisfactory manner except in locations where, in the judgment of the Engineer, it can be neatly spread over existing Airport property.

27. **GUARANTY AGAINST DEFECTIVE WORK.** The Contractor shall indemnify the Owner against any repairs which may become necessary to any part of the work performed under the contract, arising from defective workmanship or materials used therein, for a period of one (1) year from the date of final acceptance of the work.

28. **RESTORATION OF SITE & CLEANUP.** Upon completion of the project (or major portions thereof) the Contractor shall restore the site to its original condition or better. Driveways and streets shall be compacted and resurfaced as originally found. All private property disrupted during construction including shall be mended or repaired to their original condition. At the conclusion of the

work, all tools, temporary structures and materials belonging to the Contractor shall be promptly removed, and all dirt, rubbish and other foreign substances shall be disposed of.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver over such materials and equipment in an undamaged, clean condition.

29. **CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE.** The Contractor shall not commence work under this contract until he has obtained at his expense all insurance required under this section of the General Conditions and by the Contract Documents, and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on any subcontract until all similar insurance required of the subcontractor has been so obtained and approved. Such insurance shall remain in full force and effect on all phases of the work, whether or not the work is occupied or utilized by the Owner, until all work under the Contract is completed and has been accepted by the Owner.

Nothing contained in the insurance requirements shall be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operations under the Contract.

Any insurance bearing an adequacy of performance will be maintained after completion of the project for the full guarantee period.

The Contractor shall obtain and maintain for the full period of the Contract the following types of insurance in the form, minimum limits and amounts herein specified or as may be otherwise required in the Contract Documents. The Contractor shall automatically renew any policy which expires during the performance of his Contract and notify the Owner and Engineer of such a renewal prior to expiration date.

A. **Workmen's Compensation including Occupational Disease, and Employer's Liability Insurance.** Before commencement of the work, the Contractor shall take out and maintain during the life of this contract Statutory Workmen's Compensation Insurance and Occupational Disease Disability Insurance for all of his employees to be engaged in work under this Contract, and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation and occupational Disease Disability Insurance for the latter's employees engaged in such work unless such employees are covered by the protection afforded by the Contractor's insurance. In case any class of employees engaged in hazardous work under the Contractor is not protected under the Workmen's Compensation statute, or in case there is no applicable Workmen's Compensation Statute, the Contractor shall provide, and shall cause each subcontractor to provide adequate insurance for the protection of his employees not otherwise protected.

B. **Public Liability and Property Damage Insurance:** (Note "Indemnity" clause hereinafter). Before commencement of the work, the Contractor shall submit written evidence that he and all his subcontractors have obtained for the period of the Contract full Comprehensive General Liability and Property Damage Insurance coverage. This coverage shall protect the Contractor; the Owner; the Engineer, its architects and engineers; and each of their officers, agents and employees; from claims for damages for bodily or personal injury, sickness or disease, including death, and from claims for damages to property, which may arise directly or indirectly out of, or in connection with the performance of work under this Contract by the Contractor, by any of his Subcontractors, or by anyone directly or indirectly employed of either of them, or under the control of either of them, and the minimum amount of such insurance shall be as follows unless higher minimum amounts are otherwise required in the Contract Documents:

Public Liability Insurance in an amount not less than One Million Dollars (\$1,000,000) for damages arising out of bodily or personal injury, sickness or disease, or death of one person and subject to the same limit for each person and in an amount not less than One Million Dollars (\$1,000,000) in any one occurrence; and Property Damage Insurance in an amount not less than

Five Hundred Thousand Dollars (\$500,000) for all damages arising out of injury to or destruction of property of others in any one occurrence with an aggregate limit in the same amount.

The Property Damage portion of this coverage shall include where applicable explosion, collapse and underground exposure coverage. In addition, where Completed Operation Insurance coverage is applicable, such coverage will be maintained after completion and acceptance of the project for the full guarantee period.

C. Automobile Liability and Property Damage Insurance: Before commencement of the work, the Contractor shall submit written evidence that he and all his subcontractors have obtained Automobile Liability and Property Damage Insurance coverage on all self-propelled vehicles used in connection with the Contract, whether owned, non-owned, or hired. The liability limits shall be not less than One Million Dollars (\$1,000,000) for injury or death of one person and in an amount not less than One Million Dollars (\$1,000,000) in any one occurrence; and Property Damage limits of not less than Five Hundred Thousand Dollars (\$500,000) in any one occurrence.

D. Contractual Liability Coverage: Each and every policy for Liability Insurance carried by each Contractor and Subcontractor will include a "Contractual Liability Coverage" endorsement sufficiently broad to insure the provision titled "Indemnity" hereinafter set forth.

E. Indemnity: The Contractor shall defend, indemnify and hold harmless the Owner; the Engineer, its Engineers; and each of their officers, agents, servants and employees; from any and all suits, actions, claims, losses or damage of any character and from all expenses incidental to the defense of such suits, actions or claims, based upon or arising out of or alleged to be based upon or arising out of (1) any injury, disease, sickness or death of any person or persons, (2) any damages to any property including in part loss of use thereof, caused by any act or omission of the Contractor, of any Subcontractor of the Contractor, or by their officers, agents, servants, employees, or anyone else under the Contractor's direction and control, and arising out of, occurring in connection with, resulting from, or caused by the performance or failure of performance of any work or services called for by the Contract or from conditions created by the performance or non-performance of said work or services, but not including the sole negligence of any party herein indemnified.

F. Builder's Risk "All-Risk" Insurance: In addition to such Fire and extended Insurance coverage which the Contractor or his Subcontractors elect to carry for their own protection, the Contractor, before commencement of the work, shall effect and maintain for the life of his Contract Builder's Risk "All-Risk" Completed Value Insurance coverage upon the full insurable value of all portions of the project which is the subject of this Contract and subject to a loss for which Builder's Risk "All-Risk" Insurance coverage gives protection, and shall include completed work and work in progress. This coverage shall be with an insurance company or companies acceptable to the Owner.

Such insurance shall include as Additional Named Insureds: the Owner; The Engineer, its architects and engineers; and each of their officers, agents, and employees; and any other persons with an insurable interest designated by the Owner as an Additional Named Insured.

Duplicate originals of the policy of insurance required herein shall be furnished to the Engineer as provided under "Evidence of Insurance Coverage" hereinafter.

G. Evidence of Insurance Coverage: Before commencement of any work, the Contractor shall submit written evidence that he and all his Subcontractors have obtained the minimum insurance required by the Contract Documents. Such written evidence shall be in the form of a Certificate of Insurance (see attached form) executed by the Contractor's insurance carrier showing such policies in force for the specified period or by furnishing a copy of the actual policy or policies. Each policy or certificate will bear an endorsement

or statement waiving right of cancellation or reduction in coverage without minimum ten (10) days notice in writing to be delivered by registered mail to the owner.

The Contractor shall furnish duplicate originals of Builders' Risk "All-Risk" Completed Value Insurance coverage to the Engineer, one copy of which shall be for the Owner and one copy for the Engineer.

30. SAFETY.

- a. In accordance with generally accepted construction practices, the Contractor alone will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.
- b. The duty of the Engineer or Architect to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, or on, or near the construction site.
- c. The Contractor shall comply with the project specific construction phasing and safety plan.

31. EXISTING CABLES. The Contractor shall be responsible for the protection of all existing lighting cables, FAA cables, Gregg County electrical circuits, and any foreign cables encountered on the project.

32. DURING CONSTRUCTION. During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris, and rubbish as is practicable and shall remove same from any portion of the site, if in the opinion of the Engineer, such material, debris, or rubbish constitutes a nuisance or is objectionable. The Contractor shall develop and implement a foreign object debris (FOD) management plan. The Contractor shall comply with the construction phasing and safety plans.

The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops.

33. COPIES OF PLANS AND SPECIFICATIONS FURNISHED. Five (5) sets of plans and specifications shall be furnished to the Contractor, at no charge, for construction purposes. Additional copies may be obtained at cost of reproduction upon request.

34. LIGHT AND POWER. The Contractor shall provide, at his own expense, temporary lighting and facilities required for the proper prosecution and inspection of the work.

35. EXISTING STRUCTURES. The plans show the locations of all known surface and subsurface structures. However, the Owner assumes no responsibility for failure to show any or all of these structures on the plans, or to show them in their exact location. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for extra work or for increasing the pay quantities in any manner whatsoever, unless the obstruction encountered is such as to necessitate changes in the lines or grades, or requires the building of special work, provisions for which are not made in the plans and proposal, in which case the provisions in these specifications for extra work shall apply.

36. USE OF EXPLOSIVES. Use of explosives will not be allowed.

37. SUNDAYS, HOLIDAYS, AND OVERTIME. Any work necessary to be performed after regular working hours, on Sundays, or legal holidays, shall be performed without additional expense to the Owner. The Contractor shall notify the Engineer if any work is to be performed on Sundays or holidays.

38. PAYMENTS NO EVIDENCE OF PERFORMANCE. No progress or final estimate certificate given or payment made under this contract shall be evidence of the performance of this contract or construed to be acceptance of defective work or improper materials, either wholly or in part.

39. TEMPORARY SUSPENSION OF THE WORK. The Engineer shall have authority to suspend the work wholly or in part for such period or periods of time as he may deem necessary due to unsuitable weather or other conditions considered unfavorable for the suitable prosecution of the work; or for the failure of the Contractor to carry out instructions or to perform any provisions of the contract. During periods of suspension, the Contractor shall properly protect the work from possible injury.

40. OWNER'S RIGHT TO DO WORK. If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this contract, the Owner, after seven (7) days written notice to the Contractor, may, without prejudice to any other remedy the Owner may have, make good such deficiency and may deduct the cost thereof from the payment then or thereafter due the Contractor. Any money due the Owner after such deduction shall be paid by the Contractor or his sureties who hereby agree to these provisions.

41. RIGHT OF OWNER TO TERMINATE CONTRACT. Should it appear at any time that the work is not being prosecuted with sufficient competence or rapidity to insure the proper completion of the work within the stipulated time, and, if upon seven (7) days written notice to the Contractor, he fails to increase the quality or the quantity of his work, or both, the Owner reserves the right to annul and cancel this contract and relet the work or any part thereof, or at the Owner's option to complete it by day labor. The Contractor shall not be entitled to any claims for damages on account of such annulment, and he will be held liable for costs and expenses incurred in reletting or completing the work under this contract. All money due the Contractor will be retained until the work is completed and all expenses and costs have been deducted and any money due the Owner, after such deductions have been made, shall be paid by the Contractor or his Sureties who hereby agree to these provisions.

42. TERMINOLOGY. Throughout these specifications, the word "shall" denotes mandatory. The word "may" implies only permission. All other "terms" or "word phrases" shall be interpreted as having the meaning customarily ascribed to them by the several building trades of the United States.

43. CERTIFICATES AND GUARANTEES. Four (4) copies of any manufacturer's guaranty or certificate as may be required by the Contract Documents shall be submitted to the Owner prior to the acceptance of the work by the Owner.

44. STATE SALES TAX. This Contract is issued by an organization which qualifies for exemption pursuant to the provisions of Article 20.04 (F) of the Texas Limited Sales, Excise and Use Tax Act. The Contractor performing this contract may purchase, rent or lease all materials, supplies, equipment used or consumed in the performance of this contract by issuing to his suppliers an exemption certificate.

45. COORDINATION WITH OTHERS. In the event other contractors are doing work in the same area simultaneously with this project, the Contractor shall coordinate his proposed construction with that of the other contractors.

46. DEWATERING EXCAVATION. The prospective bidders shall make sufficient subsurface explorations to determine the location of groundwater which might be encountered. The Contractor shall, at his own expense, utilize a pumping system in order to place materials in dewatered excavations.

47. PUBLIC UTILITIES AND OTHER PROPERTY TO BE CHANGED. In case it is necessary to change or move the property of any owner or of a public utility, such property shall not be moved or

interfered with until ordered to do so by the Engineer. The right is reserved to the owner of public utilities to enter upon the limits of the project for the purpose of making such changes or repairs of their property that may be made necessary by performance of this Contract.

Any time the Contractor intends to expose, cross, or otherwise work in the area of the existing petroleum pipelines, telephone lines, water lines, etc., the Contractor shall notify the Owner(s) of the respective facilities forty-eight (48) hours in advance.

48. PAY ITEMS. Pay items are listed in the Proposal. All other items necessary to complete the work as shown and specified shall be considered subsidiary obligations of the Contractor.

49. MUTUAL RESPONSIBILITY OF CONTRACTORS. If, through acts or neglect on the part of the Contractor, any other Contractor or Subcontractor shall suffer loss or damage to his work, the Contractor agrees to settle with such other Contractor or Subcontractor by agreement or arbitration, if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor asserts been so sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against such claims and for any costs in connection with such claims.

50. PROTECTION OF PROPERTY. The Contractor shall, at no additional expense to the Owner, protect by false work, braces, shoring or other property along his line of work or affected directly by his work, against damage and shall repair the damages or repay the injured Owners if such damage occurs.

The Contractor shall exercise care to protect from injury all water pipes, sanitary sewer pipes, gas mains, telephone cables, electric cables, service pipes, and other utilities or fixtures which may be encountered during the progress of the work. All utilities and other service facilities or fixtures if damaged, shall be repaired by the Contractor without additional compensation.

The Contractor shall personally check and verify utility information on the plans. Where existing utilities or structures are shown on the plans or drawings, they are believed to be accurate but are not guaranteed to such or that these are the only utilities or structures in the construction area. Protection is Contractor's responsibility and he must satisfy himself as to the existence and location of all utilities and structures.

The Contractor shall give notice in writing at least 48 hours before breaking ground, to all persons, superintendents, inspectors, or those otherwise in charge of property, streets, water pipes, gas pipes, sewer pipes, telephone cables, electric cables, railroads or otherwise, who may be affected by the Contractor's operation, in order that they may remove any obstruction for which they are responsible and have a representative on the ground to see that their property is properly protected.

51. EXTENSION OF CONTRACT PERIOD. The Contractor may be granted an extension of time due to Acts of God, Acts of War, Strikes, or non-delivery of materials provided he submits a request in writing to the Engineer not later than ten (10) days from the date of such occurrence. A separate request must be made for each occurrence.

52. FAILURE TO COMPLETE WORK WITHIN CONTRACT PERIOD. If the Contractor fails to complete his work within the contract period, or any extension thereof, as provided in the "Extension of Contract Period" said contract shall upon written notice to the Contractor and Surety be in default.

The Owner may, at its (his) option, permit the Contractor or his surety to complete the work included in the contract, or may proceed to complete the work in accordance with "Completion of Contract in Default". In either event, the Contractor or his Surety shall be responsible for all costs incidental to the completion of the work and also for the liquidated damages stipulated in the proposal form. The Owner may waive such

portion of the liquidated damages as may occur after the work is in condition for the safe and convenient use by the Owner.

53. **CONTRACTS IN DEFAULT.** The Owner may declare a contract in default for any one or more of the following reasons:

- a. Failure to complete the work within the contract period or any extension thereof.
- b. Failure or refusal to comply with an order of the Engineer or Architect within a reasonable time.
- c. Failure or refusal to remove rejected materials.
- d. Failure or refusal to perform anew any defective or unacceptable work.
- e. Bankruptcy or insolvency, or the making of an assignment for the benefit of creditors.
- f. Failure to provide a qualified superintendent, competent workmen or subcontractors to carry on the work in an acceptable manner or failure to prosecute the work according to the agreed schedule of completion.
- g. Disregard or violation of any other important provisions of the Contract Documents as determined by the Engineer.

54. **COMPLETION OF CONTRACTS IN DEFAULT.** If for any reason, a contract is declared in default, the Owner shall have the right, without process or action at law to take over all or any portion of the work and complete it at its (his) option, either by day labor or by reletting same. Written notice shall be given the Contractor by the Owner that his contract has been declared in default and upon receiving such notice, the Contractor shall peaceably relinquish possession of said work or the parts thereof specified in the notice.

The Owner may, at its (his) option and at a rental which it considers reasonable, retain all materials, equipment, and tools on the work until the work is complete.

Neither the Owner nor the Owner's officers, agents, or employees shall be in any way liable or accountable to the Contractor or his Surety for the method by which the completion of the said work, or any portion thereof, may be accomplished, or for the price paid therefor. Should the cost of completing the work be in excess of the original contract price, the Contractor and his Surety shall be held responsible for such excess cost. Should the cost of such completion including all proper charges, be less than the original contract price, the amount so saved shall be paid to the Contractor. Neither by taking over the work nor by declaring the contract in default shall the Owner forfeit the right to recover damages from the Contractor or his Surety for failure to complete the entire contract. Maintenance of the work shall continue to be the Contractor's and Surety responsibilities as provided for in the Bond and Guaranty of the Contractor.

55. **EXCAVATION IN ACTIVE AREAS.** No trench excavation within an active area shall be carried closer than the edge of safety areas for the respective runway or taxiway unless shown on the plans. No dirt from trench excavation shall be stockpiled in safety areas, object free areas, or transitional areas. Stockpiles shall be removed and the disturbed areas be restored to original conditions.

56. **PROVISIONS FOR CLOSURE OF ACTIVE PAVEMENTS.** The Contractor will be required to furnish all barricades, lights, signs, and flagmen where it becomes necessary to close active pavements as shown on the phasing plans.



57. **MOTORIZED VEHICLES.** All motorized vehicles and equipment shall be clearly marked with the Contractor, subcontractor, supplier, or other support personnel's company. The markings shall be as required by the Airport. Motorized vehicles shall be in direct contact with the Tower or shall be escorted by a vehicle with direct radio contact with the Tower. All operators of vehicles that will be used on the airfield that will not be escorted shall complete the Airport's vehicle training program.

58. **SCHEDULE OF WORK SEQUENCE.** Upon award and prior to any construction, it shall be the responsibility of the Contractor to present, to the Owner and Engineer for approval, a tentative schedule of the sequence in which the work will be performed. The schedule should include the following information:

- a. The sequence of work in which the construction will be done.
- b. The approximate period of time in constructing and testing of the facilities.
- c. Coordination of work using two (2) or more crews.

59. **COST BREAKDOWN.** Immediately after being awarded a contract for the work, the Contractor shall furnish the Engineer with a cost breakdown of each lump sum bid. Such a breakdown shall be in sufficient detail to permit its use in the preparation of progress estimates by the Engineer. Progress payments for materials and equipment on hand shall be based on invoice prices and invoice copies must be presented to the Engineer.

60. **FINAL FIELD TESTS.** Upon completion of the work and prior to final payment, all equipment and appliances installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, water and all other material, equipment, and instrument necessary for all acceptance tests, at no additional cost to the Owner.

61. **WATER FOR CONSTRUCTION.** The Contractor shall coordinate and purchase water for construction as necessary.

62. **ELECTRICITY FOR CONSTRUCTION.** Except as provided elsewhere in these specifications, the Contractor shall provide all electricity required.

63. **CLEARANCE FOR USE WITH FAA.** At the end of each work period, phase, or other sequence of work, the Engineer and Airport shall determine if pavements are ready to be opened to active operations. They will inform the FAA in the control tower of the inspection results.

64. **CONTRACT DOCUMENTS.** The Contract Documents shall consist of all documents contained herein as stated in the Table of Contents including the Notice to Bidders (Advertisement), Special Conditions, Instructions to Bidders, Proposal, signed Agreement, Performance and Payment Bonds (when required), Special Bonds (when required), General Conditions of Agreement, Technical Specifications, Plans, and all modifications thereof incorporated in any of the documents before the execution of the Agreement.

65. **POLES, SIGNS, GUY WIRES, ETC.** All utility poles, guy wires, private sign posts, signs, and similar private obstructions which interfere with the construction of this project will be removed and replaced by the Contractor at his own expense.

66. DAYTIME WORK RESTRICTIONS. The Contractor shall follow and comply with the construction safety and phasing plan. It shall be the Contractor's responsibility to maintain and keep clear active pavements of foreign object debris (FOD). It shall also be the responsibility of the Contractor to coordinate with the resident project representative, Airport, FAA, and other interested parties as necessary throughout the duration of the project. The Contractor shall maintain radio communications at all times with the FAA tower. The Tower may direct the Contractor to move all men and equipment at least two hundred fifty (250) feet from the edge of runway pavement or one hundred (100) feet from the edge of taxiway pavement. Equipment and personnel shall not return to the restricted area until authorization is provided by the FAA tower.

67. PROPERTY LINES AND MONUMENTS. The Contractor shall protect all property lines, monuments and stakes encountered in his work. All monuments, and stakes for later use, that are disturbed or destroyed by the Contractor shall be replaced at his expense.

68. HORIZONTAL AND VERTICAL CONTROL POINTS. Location of the centerlines and grades will be determined and staked by the Contractor. The Contractor shall assume full responsibility for construction in accordance with the approved lines and grades.

69. CONFINED SPACE ENTRY. The Contractor shall be responsible for compliance with any and all Federal and State confined space entry and permitting requirements.

70. ALLOWANCE FOR MISCELLANEOUS EXTRA WORK. A discretionary allowance may have been established in the Bid Proposal for miscellaneous extra work which may arise during the construction phase of the project due to the discovery of unknown obstructions or other unexpected project conditions for which a method of payment, such as individual bid items, is not established. This allowance, if established in the Bid Proposal, is not intended to be used to procure payment for items specifically named as subsidiary to other bid items within the contract documents. Prior to initiating any item of extra work under this bid item, the Owner, Engineer, and Contractor will agree as to the scope of extra work to be performed and the amount of payment to be made for the particular item of extra work under consideration. A written field order for the extra work will be approved by all parties before commencing with extra work. Expenditure of the allowance funds is at the sole discretion of the Owner. The allowance may be used in full or in part as the Owner deems necessary. If no extra work is identified and approved by the Owner, the allowance funds will not be expended.

71. NOTAMS. The Airport will issue all necessary Notices to Airmen (NOTAMS) to reflect construction activities and potential hazardous conditions. It is of most importance to keep NOTAMS up to date. It will be the responsibility to coordinate and notify the Airport of weekly construction progress and any changes that are required to maintain schedule or is the result of weather or other work delays.

72. RADIO OPERATIONS. The Contractor shall maintain in radio communication with the Tower at all times.

73. WORK HOURS. All work shall be conducted between 7:00 a.m. and 8:00 p.m. Work shall be completed between Monday and Saturday with no work on Sunday. Requests to work areas or days must be made in writing to the Engineer for consideration and approval. Required night work shall be coordinated and approved by the Airport.

74. SAFETY DURING CONSTRUCTION. The Contractor shall strictly adhere to the project specific construction safety and phasing plan, AC 150/5370-2G.

## WAGE RATE DETERMINATION

General Decision Number: TX190113 01/04/2019 TX113

Superseded General Decision Number: TX20180145

State: Texas

Construction Type: Heavy

Counties: Bowie, Gregg and Smith Counties in Texas.

HEAVY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/04/2019

SUTX2004-003 11/09/2004

Rates Fringes

Asphalt Distributor Operator.....	\$ 11.74	0.00
Asphalt paving machine operator.....	\$ 10.49	0.00
Asphalt Raker.....	\$ 8.58	0.00
Asphalt Shoveler.....	\$ 8.00	0.00
Broom or Sweeper Operator.....	\$ 8.47	0.00
Bulldozer operator.....	\$ 11.97	0.00
CARPENTER.....	\$ 12.59	0.00
Concrete Finisher, Paving.....	\$ 12.46	0.00
Concrete Finisher, Structures....	\$ 10.40	0.00
Concrete Paving Saw Operator.....	\$ 12.13	0.00
Crane, Clamshell, Backhoe, Derrick, Dragline, Shovel Operator.....	\$ 12.14	0.00
ELECTRICIAN.....	\$ 15.00	0.00
Flagger.....	\$ 7.61	0.00
Form Builder/Setter, Structures.....	\$ 9.57	0.00
Front End Loader Operator.....	\$ 10.78	0.00
Laborer, common.....	\$ 8.86	0.00
Laborer, Utility.....	\$ 11.39	0.00
MECHANIC.....	\$ 13.53	0.00
Motor Grader Operator Fine Grade.....	\$ 13.35	0.00
Motor Grader Operator Rough.....	\$ 13.34	0.00
Pavement Marking Machine Operator.....	\$ 10.56	0.00
Reinforcing Steel Setter.....	\$ 12.52	0.00

Roller Operator, Pneumatic, Self-Propelled.....	\$ 8.39	0.00
Roller Operator, Steel Wheel, Flat Wheel/Tamping.....	\$ 9.23	0.00
Roller Operator, Steel Wheel, Plant Mix Pavement.....	\$ 9.75	0.00
Scraper Operator.....	\$ 9.50	0.00
Servicer.....	\$ 10.00	0.00
Spreader Box operator.....	\$ 13.12	0.00
Tractor operator, Pneumatic.....	\$ 11.00	0.00
Traveling Mixer Operator.....	\$ 10.05	0.00
Truck driver, lowboy-Float.....	\$ 10.50	0.00
Truck driver, Single Axle, Heavy.....	\$ 13.13	0.00
Truck driver, Single Axle, Light.....	\$ 9.62	0.00
Truck Driver, Tandem Axle, Semi-Trailer.....	\$ 10.51	0.00
Work Zone Barricade Servicer.....	\$ 7.85	0.00

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is

like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that

no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling



On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

## TECHNICAL SPECIFICATIONS

GREGG COUNTY, TEXAS  
 GREGG COUNTY BID NO. 2019-903  
 FOR  
 EAST TEXAS REGIONAL AIRPORT  
 SOUTH GA APRON CONNECTOR

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**The Texas Department of Transportation 2014 Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges shall govern the following Items and any other Items of work required to complete the work as shown or specified. These Items shall be considered included in these Specifications in their entirety with the exception of the Measurement and Payment sections:**

Item 360	Concrete Pavement
Item 401	Flowable Backfill
Item 420	Concrete Substructures
Item 421	Hydraulic Cement Concrete
Item 427	Surface Finishes for Concrete
Item 438	Cleaning and Sealing Joints
Item 440	Reinforcement for Concrete
Item 464	Reinforced Concrete Pipe

DIVISION G

GENERAL

## TECHNICAL SPECIFICATIONS

### SECTION G1 - GENERAL INFORMATION

**G1.1. PERMITS AND RIGHT-OF-WAY:** The Owner will provide rights-of-way for the purpose of construction without cost to the Contractor by securing permits in areas of public dedication or by obtaining easements across privately owned property. It shall be the responsibility of the Contractor, five (5) days prior to the initiation of construction on easements through private property, to inform the Owner's Representative of his intent to begin construction. The Owner's representative will notify property owners of intent to begin construction. Before beginning construction in areas of public dedication, the Contractor shall inform the agency having jurisdiction in the area forty-eight (48) hours prior to initiation of the work.

**G1.2. CONSTRUCTION IN PUBLIC ROADWAYS AND PRIVATE DRIVEWAYS:** No public road shall be entirely closed overnight. It shall be the responsibility of the Contractor to build and maintain by-passes and detours, if necessary, and to properly light, barricade and mark all by-passes and detours that might be required on and across the road involved in the work included in this contract.

The Contractor shall make every effort to complete construction and allow immediate access to adjacent property at all driveway entrances located along the roads. Owners and tenants of improvements where access and/or entrance drives are located shall be notified at least twenty-four (24) hours prior to the time the construction will be started at their drive-ins or entrances and informed as to the length of time driveways will be closed, which period shall not exceed ten (10) hours.

The Contractor shall be responsible for all road and entrance reconstruction, and repairs and maintenance of same, for a period of one (1) year from the date of acceptance. In the event the repairs and maintenance are not made immediately to the satisfaction of the Engineer, and it becomes necessary for the Owner to make such repairs, the Contractor shall reimburse the Owner for the cost of such repairs.

Where sufficient right-of-way is not available and prior approval is obtained from the Engineer, dirt from the excavation may be temporarily placed on city streets. Where this is necessary, the Contractor shall provide proper barricading and other traffic control measures to provide at least one lane of open traffic. Where prior approval of the Engineer is obtained, the roadway may be completely closed, provided alternate routes for traffic are available and detour routings clearly marked by the Contractor.

Where construction alongside roadways is required, it shall be the Contractor's responsibility to insure that precautions are taken to avoid damage to the roadway surface. Damages to the roadway from the Contractor's construction activities shall be repaired by the Contractor to return the roadway to its original condition prior to construction.

The Contractor is responsible for traffic handling and safety in the construction area during the construction period. Signs, barricades and other necessary devices shall be furnished and maintained by the Contractor in compliance with Part IV of the Texas Manual of Uniform Traffic Control Devices, current edition.

G1.3. PUBLIC UTILITIES AND OTHER PROPERTY TO BE CHANGED: In case it is necessary to change or move the property of any owner or of a public utility, such property shall not be moved or interfered with until ordered to do so by the Engineer. The right is reserved to the owner of public utilities to enter upon the limits of the project for the purpose of making such changes or repairs of their property that may be made necessary by performance of this Contract.

Any time the Contractor intends to expose, cross, or otherwise work in the area of the existing petroleum pipelines, telephone lines, water lines, etc. the Contractor shall notify the utility or pipeline owner five (5) days in advance.

G1.4. POLES, GUY WIRES, ETC.: All utility poles, guy wires, private sign posts, signs and similar private obstructions which interfere with the construction of this project will be removed and replaced by the Contractor at his own expense.

G1.5. PROTECTION OF TREES, PLANTS AND SHRUBS: The Contractor shall make every effort to protect all trees, plants, and shrubs encountered during construction outside of the construction area. Where Owner-planted shrubbery must be removed for construction, it shall be stored by the Contractor and replaced in good condition. In all cases where questions arise, the Contractor shall request clarification from the Engineer.

Contractor shall not cut down, remove or trim existing trees without prior approval from the Engineer. Trees noted as "DO NOT DISTURB" on the plans shall be protected from construction activity by construction of a barrier fence at a minimum of 5 ft. radius around the trunk of the trees. The barrier fence shall be constructed a minimum of 4 ft. high with polyethylene/polypropylene grid safety barricade fencing supported by steel t-posts or approved equivalent. Payment for tree protection shall be considered subsidiary to various items of work within the contract. The alignment of the pipe may need to be slightly adjusted in the field to avoid significant root damage to the trees. Field alignment adjustments shall have prior approval of the Engineer.

G1.6. ARCHEOLOGICAL DISCOVERIES: The Contractor may encounter unanticipated cultural or archaeological deposits during construction. If archeological sites or historic structures are discovered after construction operations are begun, the Contractor shall immediately cease operations in that particular area and notify the Owner. The Contractor shall take reasonable steps to protect and preserve the discoveries until they have been inspected by the Owner's Representative. The Owner will promptly coordinate with the Texas Historical Commission and any other appropriate agencies to obtain any necessary approvals or permits to enable the work to continue. The Contractor shall not resume work in the area of the discovery until authorized to do so by the Owner.

G1.7. CONSTRUCTION STAKING: The Contractor shall provide for his own horizontal and vertical construction staking as a subsidiary cost to his bid. The plans include locations and elevations of temporary bench markers along the right-of-way.

## TECHNICAL SPECIFICATIONS

### SECTION G1A - GENERAL CONSTRUCTION INFORMATION AND REQUIREMENTS

G1A.1. RELATIONSHIP WITH EXISTING FACILITIES: The Contractor is advised that, unless otherwise indicated, existing utilities must be available at all times for use. The Contractor, therefore, shall at all times take particular care to avoid needless confusion, clutter and debris at the site of the work. At no time shall the Contractor's personnel, equipment, or material prevent the normal conveyance of water and wastewater flows. If it is necessary to request the Contractor to move his equipment, materials, or any material included in the work, he shall do so promptly and place said equipment or material in an area which does not interfere with proper service. The Contractor is further cautioned against adjusting or altering any private property without the written consent of the Owner.

G1A.2. PROTECTION OF EXISTING INSTALLATIONS: The Contractor shall correct or replace, without delay any and all damage to existing structures, surfaces, equipment, controls or systems resulting from his operations.

The Contractor's attention is particularly directed to the dust, abrasive particles, debris and dirt generated by the placement, chipping, cutting, finishing and grinding of new or existing concrete, and the dust debris and dirt generated by excavation and backfill operations; and the filters, protective shieldings, and other dust suppression methods at all times to adequately protect private property.

G1A.3. PERMANENT UTILITIES: The existing site is presently served with utilities. The utilities to be modified by the Contractor are as shown on the plans.

G1A.4. CLEANING UP: The Contractor shall not allow the site of the work to become littered with trash and waste material but shall maintain the site of the work in a neat and orderly condition throughout the construction period. On or before the completion of the work, the Contractor shall carefully clean out all pits, drain lines and drains, chambers or conduits and shall remove all temporary structures built by him and rubbish of all kinds from any of the grounds which he has occupied and leave them in first-class condition to the satisfaction of the Engineer.

TECHNICAL SPECIFICATIONS

SECTION G2 - SITE PREPARATION, EXCAVATION  
BACKFILL, FILLS

G2.1. GENERAL: The work under this section shall consist of all labor, equipment, and materials as required or necessary for site preparation, excavation, and backfill, fills, underdrain systems, and storm drainage as shown in the plans and specified herein.

- A. Submittals: The Contractor shall submit test reports prepared by a certified testing laboratory acceptable to the Engineer for Type 1 material and all rock material. No material shall be used unless it has been accepted by the Engineer.
- B. Testing: The standard test to define maximum densities of all compaction work shall be ASTM D698. All densities shall be expressed as a relative density in terms of the maximum density obtained in the laboratory by the foregoing standard procedure.

Periodically throughout the job the Engineer will make compaction tests on fills and backfills as placed by the Contractor. The Contractor shall permit the Engineer to sample, test, and inspect in-place materials at times selected by the Engineer and without additional compensation or additional time.

G2.2. MATERIALS:

- A. Type 1: Select Fill Material: Type 1 material shall consist of homogeneous soils free of organic matter and rocks larger than 3" in diameter and possessing an Atterburg plasticity index from 0% to 15%, and with a liquid limit of 30% or less, or as shown on the plans.
- B. Type 2: Sand: Type 2 material shall be a select, granular material free from organic matter and, when tested in accordance with ASTM D422, shall conform to the following requirements:

<u>U.S. Standard Sieve Size</u>	<u>Percent by Weight Passing</u>
3/4"	100
#4	95 to 100
#8	80 to 100
#16	50 to 85
#30	25 to 60
#50	10 to 30
#100	2 to 10

- C. Type 5: Topsoil: Type 5 material shall consist of soils suitable for the growth of surface cover. Topsoil may be that material stripped and stockpiled from site preparation or hauled in from off site.



Topsoil shall be free from roots, rocks, and other extraneous matter which exceeds one inch in any one direction and free from noxious weeds and consisting of the following by weight:

Sand	Minimum of 60%
Silt	Maximum of 30%
Clay	Maximum of 10%
Organic Matter	6% to 20%

The above minimum-maximum percentages are based on oven dried material and percentages shall be determined by either the pipette or hydrometer method of soil analysis. The pH range shall be from 6.0 to 7.5.

- (1) Sand: Sand shall be clean natural sand, free from roots, rocks, or other extraneous matter. Particle size range shall be 2.0 mm to 0.05 mm.
- (2) Silt: Silt shall have a particle size range of 0.05 mm to 0.002 mm.
- (3) Clay: Clay shall have a particle size range of 0.002 mm minus.
- (4) Organic Matter: Organic matter shall be partially decomposed residue of plants and animals and the tissues of living and dead micro-organisms and shall be medium in texture containing no material that exceeds 1/2" in any one direction.

Submit test data showing topsoil source, percent by weight of constituent materials, particle size of constituent materials, and pH for all topsoil hauled in from off site.

- D. Type 6: Undisturbed Firm Native Soil Subgrade: Type 6 soils shall be those remaining in place after excavating that are suitable for slab subgrades and have not been disturbed or overexcavated. Where subgrade soils are soft, loose, or otherwise unsatisfactory, the soils shall be recompacted or replaced with select fill as determined by the Engineer. Select fill and recompaction of native soil shall be as specified in Paragraph 3.C.2.
- E. Type 7: Common Fill: Type 7 material shall be unclassified material obtained from excavation or from any other source. The material shall be free from peat, wood, roots, bark, debris, garbage, rubbish, or other extraneous material. The maximum size of stone shall not exceed 6".
- F. Type 8: Rock Riprap: Type 8 material shall consist of individual rock fragments dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

Except as provided below, the rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
2. Absorption not more than 2 percent.

3. Soundness: Weight loss in 5 cycles not more than 10 percent when sodium sulfate is used or 15 percent when magnesium sulfate is used.

The bulk specific gravity and absorption shall be determined by ASTM Method C 127. The test for soundness shall be performed by ASTM Method C 88 for the coarse aggregate modified as follows:

The test sample shall not be separated into fractions. It shall consist of 5000 +/- 300 grams of rock fragments, reasonably uniform in size and shape and weighing approximately 100 grams each, obtained by breaking the rock and selecting fragments of the required size.

After the sample has been dried, following completion of the final test cycle and washing to remove the sodium sulfate or magnesium sulfate, the loss of weight shall be determined by subtracting from the original weight of the sample the final weight of all fragments which have not broken into three or more pieces.

The report shall show the percentage loss of weight and the results of the qualitative examination.

Rock that fails to meet the requirements stated in 1., 2., and 3. above, may be accepted only if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weather, wetting and drying, and erosive forces similar to those anticipated for the rock to be installed under this specification.

Rock riprap shall meet the following gradation:

Size of Rock, LBS	% Smaller by Weight
200	100
75	50
25	15

Riprap shall be 18" deep unless otherwise noted on the plans and shall be laid on drainage fabric (Mirafi 700X or equal).

G2.3. CONSTRUCTION: Soil types and placement shall be as shown in the Plans and as specified herein.

A. General Requirements:

- (1) Control of Water: The Contractor shall, during the excavation period and as long thereafter as the condition of the work may require, provide and maintain, in good operating condition, pumping equipment full adequate in capacity to promptly remove all water entering any excavation or other parts of the work.

All excavation shall be kept dry and water pumped or drained from the work shall be disposed of in such a manner as to prevent damage to adjacent property or to other work under construction. Any and all damage, or whatever nature, caused by dewatering the work shall be promptly repaired or remedied by the Contractor at his own expense. This shall include the cleaning and flushing of existing drainage pipe lines where such are used.

The Contractor shall at all times have on hand sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, and shall have available at all times competent workmen for the operation of the pumping equipment. The dewatering systems shall not be shut down between shifts, on holidays or weekends, or during the work stoppages without written permission from the Engineer. The control of groundwater shall be such that softening of the bottom of excavations or formation of "quick" conditions or "boils" shall be prevented. Dewatering systems shall be designed and operated so as to prevent the removal of the natural soils.

During excavation, construction of structures and backfilling, excavations shall be kept free of water. The static water level shall be drawn down below the bottom of the excavation so as to maintain the undisturbed state of the natural soils and allow the placement of any fill or backfill to the required density. The dewatering system shall be provided so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbances of compacted fill or backfill, and prevent flotation or movement of all structures and pipelines.

(2) Removal of Obstructions: The Contractor shall remove all heavy sods, heavy growths of grass, and all decayed vegetable matter where the proper construction and completion of the work require their removal. The Contractor shall also remove all rock, stones, debris, and all obstructions of whatsoever kind or character, whether natural or artificial, encountered in the work. Material shall be removed from the site of the work and disposed of in a manner acceptable to the Engineer.

(3) Excess Excavated Material: Excess excavation from all sources shall be placed in accordance with the site grading plans. Material in excess of an approved grading plan shall be disposed of off-site at the Contractors expense.

Material shall be spread and thoroughly compacted at optimum moisture to densities specified in SECTION G2 of these Specifications. Topsoil shall be stockpiled as required for landscaping.

(4) Shoring, Sheet piling, and Bracing: As may be necessary for the safety of workmen and to prevent shifting of material with possible damage to existing or uncompleted structures and attendant delay of the work, trenches and other excavations shall be properly shored, sheeted, and braced as the nature of the ground may require or prudence dictate. Bracing shall be so arranged as not to place any strain on portions of completed work until the general construction has proceeded far enough to provide ample strength.

The Contractor shall include in his bid price and be solely responsible for trench safety provisions meeting the requirements of the United States Department of Labor Occupational Safety and Health Administration. The following regulations, as contained in Subpart P, Part 1926 of the code of Federal Regulations, shall be complied with along with all other applicable Subparts and Regulations not herein contained.

In general, the sheet piling and bracing shall be removed as the trench or excavation is backfilled, and in such a manner as to avoid the caving in of the bank or disturbance of

adjacent areas or structures. The void left by the withdrawal of sheeting shall be filled by jetting or otherwise, as approved by the Engineer.

Removal of sheeting, shoring, or bracing shall be subject to approval by the Engineer, but such approval by the Engineer shall not relieve the Contractor from the responsibility for injury to any structure or to other property or persons from failure to leave such sheeting, shoring or bracing in place.

Such shoring and sheeting as may be required during excavation shall be installed to protect adjacent structures and utilities.

(5) Unauthorized Excavation: Whenever, through neglect of the Contractor, the excavation is carried below or beyond the lines and grades as given by the Engineer or as shown on the Plans, except as specified above, all such excavated space shall be refilled with such material and in such a manner as may be directed by the Engineer, so as to insure the stability of the affected structure. Beneath all structures, space excavated without authority shall be refilled by the Contractor, at his own expense, with 2500 psi concrete and as directed by the Engineer.

- B. Excavation for Structures: Unless otherwise specified, any method of excavation within the work limits shown may be employed which, in the opinion of the Contractor, is considered best. At those locations where the excavation extends below the static groundwater level, the Contractor shall take whatever precautions are necessary to maintain the undisturbed state of either the natural soils or the compacted fill at and below the bottom of the excavation.

Where, in the opinion of the Engineer, the condition of the exposed soils is inadequate for the support of the planned structure, the Engineer shall require the Contractor to overexcavate to adequate soils and refill the excavated space to the proper elevation with select fill in accordance with the procedure specified in paragraph 3.C.(2).

Excavation shall extend a sufficient distance from walls and footings to allow for placing and removal of forms, installation of structures, and for inspection, except where concrete is authorized to be deposited directly against excavated surfaces.

Where pipelines enter a structure, the requirement for trench excavation shall be complied with up to the excavation line of the structure, unless specified or required otherwise.

- C. Backfill:

(1) Filling and Backfilling: Trenches and excavations for structures shall be backfilled to original ground level, or to such other grades as the Engineer may direct. The time elapsing before backfilling is begun shall be subject to the Engineer's approval. All backfilling shall be carried along in an orderly manner and as expeditiously as is consistent with good scheduling.

Before backfilling around structures, all lumber, rubbish, braces, and refuse shall be removed from the excavation and disposed of in a manner satisfactory to the Engineer.

The backfill around and within 10 ft. of the exterior wall of all structures shall be structural backfill brought up in horizontal layers of uniform thickness as described in paragraph 3.C.(2).

The method of compaction for berms, levees, and fill areas shall be by equipment and methods approved by the Engineer and shall attain a density equal to or greater than 90% maximum density.

The method of compaction of backfill outside the 10 ft. zone around structures and except as specified for backfill of pipeline trenches shall be at the option of the Contractor, and approved by the Engineer, and shall attain a density equal to or greater than 85% maximum density.

(2) Structural Backfill: Structural backfill shall be constructed at the locations and to the lines and grades indicated on the plans. Unless otherwise indicated, structural backfill shall be Type 1 material. The material shall be placed in horizontal layers not exceeding 8" in loose depth and shall be moisture conditioned to at least 3% of optimum moisture such that the required degree of compaction may be obtained.

Each layer shall be compacted by power-operated tampers, rollers, or other suitable equipment at a dry density equal to 90% of maximum. Each layer shall be compacted to the specified density prior to placing subsequent layers. The thickness of the loose layer may be increased when in-place density tests satisfactory to the engineer show that the specified density can be obtained. Dewatering must be maintained during the placement of compacted backfill. When backfill is subgrade for walks, roadways, foundations or slabs, it shall be structural backfill compacted to a dry density equal to 95% of maximum. Compaction shall be done in a manner that will not damage adjacent or buried facilities. In place field density tests shall be conducted to verify compaction.

(3) Compacted Select Fill under Structures: Material shall be Type 1 and shall be placed in the following manner:

- a. Scarify the exposed subgrade to a depth of 6", adjust the moisture content, and recompact to 95% of the maximum density.
- b. Place subsequent lifts of select fill in thin, loose layers not exceeding 9" in thickness to the desired rough grade and compact to 95% of the maximum density. Maintain moisture within 2% of theoretical optimum.
- c. Conduct in-place field density tests at the rate of one test per 2,000 square feet for every other lift.
- d. Prevent excessive loss of moisture during construction.
- e. Fill strata which provide shallow foundation support should extend 5 ft. beyond the structure to restrict lateral movement.

A portion of the soil strata removed from structure excavations may be suitable as select fill; however, it is the responsibility of the Contractor to provide and place all select fill material required to include material hauled in from off site as required.

G2.4. SITE DEVELOPMENT: Area development includes all fill, excavation, and grading required to bring the site to finished elevations as shown.

- A. Site Preparations: Site preparation shall include the removal of trees and brush required for installation of proposed structures, pipelines, roadways, and all other work. Topsoil, all vegetation such as roots, brush, heavy sods, heavy growths of grass and all decayed vegetable matter, rubbish and other unsuitable material within the area of the work shall be stripped or otherwise removed before grading is started. After stripping has been done, all grading within the limits of work shall be performed to the lines and grades indicated on the drawings. Unsuitable and surplus excavated material not required as fill shall be removed from the site of the work. During construction, excavation and filling shall be performed in a manner and sequence that will provide proper drainage at all times. Top of cuts shall be bladed or otherwise rounded off to provide a gradual transition at the break point. Stockpiled topsoil shall be spread on all unimproved areas.

Topsoil stripped shall be moved to a stockpile for future replacement on slopes and disturbed areas. Stockpiles of topsoil shall not exceed 4 ft. in height and shall be uniformly graded and maintained to preclude excessive erosion. Locations of stockpiles shall be approved by the Engineer prior to the beginning of stripping operations.

- B. Area Fill: Area fill shall be constructed at the locations and to lines and grades indicated. Material for the area fill shall be Type 7 and shall be placed in layers not exceeding 12" in loose depth. The Contractor shall route his hauling equipment over each lift as placed and distribute the travel evenly over the entire width of fill so as to obtain the maximum compaction practicable, and use additional compaction as necessary to achieve a minimum of 85% of maximum density.
- C. Engineered Fill: Engineered fill shall be constructed at the locations and to the lines and grades shown. Prior to placement of the engineered fill, the stripped natural surfaces shall be scarified to a depth of 12" and recompacted to a minimum of 95% of the maximum dry density. Engineered fill shall consist of Type 1 material compacted to 95% of maximum density in lifts not to exceed 8" of loose depth. Each lift shall meet the required density prior to the placement and compaction of additional lifts.

G2.5. FINISH: All areas covered by the work, including excavated and filled sections, borrow areas, and transition area shall be graded uniformly to the elevations shown on the drawings. The finished surface shall be compacted and finished to drain readily. The degree of finish shall be that ordinarily obtainable from a blade grader. The finished surface shall not be more than 0.2 ft. above or below the finished elevations shown on the drawings. The surface of areas to be paved, on which a base-course is to be placed, shall not vary more than 0.05 ft. from finished elevations and cross sections shown on the drawings. Improved areas and all roadways affected by any excavation shall be restored to the condition which existed at the time the Contractor entered upon the work. Ditches shall be graded, fences shall be restored, and all other work necessary for restoration shall be done.

G2.6. COMPACTION METHODS: Methods required to achieve the necessary compaction for each of the soil types encountered may vary. Pneumatic or vibration type methods of compaction may be required for cohesionless soils. A "Sheep's-foot" type roller must be used, however, for all cohesive soils.

G2.7. AVAILABILITY OF REQUIRED SOILS: Select fill material required during construction may or may not be available on-site. Any off-site borrow required to meet requirements of plans and specifications regarding fill material shall be supplied by the Contractor at no additional expense to the Owner. Testing to determine the suitability of borrow materials shall be performed at the Contractor's expense.

## TECHNICAL SPECIFICATIONS

### SECTION G3 - FINISH GRADING, REPLACEMENT OF TOPSOIL, HYDROMULCHING

G3.1. GENERAL: The work to be performed under this section of the Specifications shall consist of the removal and disposal of excess excavation, construction of finished grading, replacement of previously stripped topsoil and providing ground cover by hydromulching.

G3.2. FINISH GRADING: Excess excavation from all sources shall be placed in accordance with the site grading plans. Materials placed under access roads and parking areas shall be compacted according to the applicable Specifications. Excavated material in excess of the requirements of the grading plan shall be disposed of off-site at the Contractor's expense.

Materials shall be spread and thoroughly compacted at optimum moisture to densities specified in SECTION G2 of these Specifications.

G3.3. REPLACEMENT OF TOPSOIL AND GROUND COVER: The work to be performed under this section of the Specifications shall consist of replacement of topsoil previously stockpiled to conform to the finish grades as indicated on the Plans, and providing ground cover by hydromulching.

A. Topsoil: The topsoil shall consist of material previously stockpiled under SECTION G2.3 of these Specifications.

Topsoil shall be placed at a depth of 4" over all disturbed areas prior to placing ground cover.

B. Hydromulching: This item shall consist of furnishing and applying fertilizer, seed, mulch cover, and water on all areas disturbed by construction except within residential lots as noted on the Plans.

Application of ground cover shall be by hydromulching. The mulch, fertilizer, and seed may be incorporated into one operation, or if the Contractor so elects, the fertilizer may be applied during preparation of the seedbed. Water used in hydromulching shall be of drinking water quality.

After application of the mulch cover, water shall be applied as necessary at the direction of the Engineer for a period of at least three (3) weeks. The time required for application of water will not be included in the computations of contract time for completion of the project provided all other work under the Contract has been completed. Fertilizer shall be a commercial grade, uniform in composition, free flowing, and suitable for application with mechanical equipment, delivered to the site in labeled containers, to current State Fertilizer Laws and bearing the name, trademark, and warranty of the producer.

All seed shall be labeled in accordance with the current rules and regulations of State law and shall be free of noxious weeds. Seed shall be furnished in sealed, standard containers unless otherwise authorized by the Engineer in writing. Seed which has become wet, moldy, or otherwise damaged in transit or storage will not be acceptable. The minimum percentage by weight of pure live seed shall not be less than 85 when



tested according to current regulations under the Federal Seed Act. All legumes must be inoculated with an approved culture as per the manufacturer's recommendations.

Seed shall be composed of the varieties and amounts by weight as shown below.

VARIETY	WEIGHT, LBS. PER ACRE
Rye Grass (Gulf Coast or Italian)	50
Crimson Clover	2
Bermuda (Common)	10

The Common Bermuda seed shall be applied during the months of March, April and May only. Rye Grass and Crimson Clover shall be applied with hydromulch and fertilizer immediately upon completion of finish grading. The Contractor shall be responsible for all seeding at the specified times, whether accomplished in single or multiple applications.

For maximum soil holding ability the mulch shall be a wood cellulose fiber. This mulch shall be applied at the rate of 1200 lbs. per acre on 4:1 slopes or flatter or at 1500 lbs. per acre on slopes steeper than 4:1.

Fertilizer shall be composed of 16% nitrogen, 8% phosphorous, and 8% potash and applied at a minimum rate of 400 lbs./acre.

- C. Construction Methods: The area to receive hydromulch shall be brought to a smooth and uniform surface to conform to an elevation 4" below the finished grade indicated on the Plans. The surface of the topsoil stockpile shall be thoroughly disked to a depth of 6" prior to loading. The topsoil shall then be dumped upon the prepared area and spread to a uniform depth of 4". Ground cover shall then be applied by hydromulching as described above.
- D. Maintenance of Ground Cover: Areas which have been hydromulched shall be maintained by the Contractor in a manner to insure that grass cover is established. The Contractor shall further maintain areas to specified grades for a period of one year from the date of receiving the Notice of Substantial Completion on the project. Final payment will not be made until ground cover is established in accordance with these Specifications.

## TECHNICAL SPECIFICATIONS

### SECTION G4 - BARRICADES AND WARNING DEVICES

- G4.1. DESCRIPTION: This Item shall consist of the construction, maintenance and removal, if required, of detours of the type and length, and to the lines, grades and typical cross sections shown on the plans. The work shall be done in accordance with the provisions of this specification.
- A. Prior to closing any section of the project to traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs and devices, temporary suitable removable lane delineation striping and all other applicable requirements at and in the vicinity of all road and bridge construction projects at all times; both day and night during the construction period of the contract. The Texas Manual on Uniform Traffic Control Devices (TMUTCD) shall serve as a guideline for the installation and maintenance of barricades and warning devices. All of the above does not preclude the requirements of the City of Longview.
  - B. Responsibility for damage or claims: The Contractor shall hold harmless the Owner, the City of Longview, and Hayes Engineering, Inc. and all its representatives from all suits, actions or claims of any damages sustained by any person or property in consequence of any neglect in safeguarding the work or through the use of unacceptable materials in the construction of the improvement, or on account of any act of omission by said Contractor. He shall not be released from said responsibility until the roadway shall have been completed and accepted, and so much of the money due the said Contractor under and by virtue of his contract may be retained by the Owner, the City of Longview and Hayes Engineering, Inc., or his surety may be held until such claims have been settled and suitable evidence to that effect furnished to the Engineer.
  - C. In areas where traffic re-alignment is required, all conflicting existing lane lines shall be obliterated and re-alignment made by use of temporary, removable lane delineation striping until construction is completed and then the temporary striping is removed and permanent striping applied in accordance with the TMUTCD specifications for traffic lane striping or buttons.

Whenever temporary pavement marking is required either for re-aligning existing traffic lane striping or for new temporary locations it shall be provided in accordance with TMUTCD requirements.

## TECHNICAL SPECIFICATIONS

### SECTION G5 – STORM WATER POLLUTION PREVENTION

- G5.1. DESCRIPTION: This item shall consist of the work required to provide storm water pollution prevention meeting the requirements of the Texas Commission on Environmental Quality (TCEQ). The TCEQ requirements are specified in the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP) No. TXR150000.
1. REQUIREMENTS – 5 OR MORE ACRES DISTURBED. For construction activities that will disturb 5 or more acres, the Contractor shall perform all activities required by TCEQ. TCEQ requirements include, but are not limited to the following tasks:
    - a. Obtain a copy of the TCEQ CGP (TPDES Permit No. TXR150000).
    - b. Develop a storm water pollution prevention plan (SWP3) meeting the requirements of the TCEQ General Permit.
    - c. Complete and submit a Notice of Intent (NOI) to the TCEQ using the TCEQ form. Include all necessary fees with the NOI submittal. The NOI and all fees must be submitted at least two (2) days prior to commencement of construction.
    - d. Provide the Owner and the Engineer with a copy of the NOI and a copy of the check to the TCEQ and a written notice indicating the date that the NOI was submitted to the TCEQ.
    - e. Implement the SWP3. Perform maintenance and inspection as required by the SWP3.
    - f. Continue to submit the annual project fee as the project continues.
    - g. Modify the SWP3 during construction as necessary.
    - h. Complete and submit a Notice of Termination (NOT) to the TCEQ once the site has reached final stabilization.
  2. REQUIREMENTS – 1 OR MORE ACRES BUT LESS THAN 5 ACRES DISTURBED. For construction activities that will disturb 1 or more acres, but less than 5 acres, the Contractor shall perform all activities required by TCEQ. TCEQ requirements include, but are not limited to the following tasks:
    1. Obtain a copy of the TCEQ CGP (TPDES Permit No. TXR150000).
    2. Develop a storm water pollution prevention plan (SWP3) meeting the requirements of the TCEQ General Permit.
    3. Complete and post a Construction Site Notice (CSN) on the job site at least two (2) days prior to commencement of construction.
    4. Implement the SWP3. Perform maintenance and inspection as required by the SWP3.
    5. Modify the SWP3 during construction as necessary.
  3. REQUIREMENTS – LESS THAN 1 ACRE DISTURBED. For construction activities that will disturb less than one acre, coverage under the TCEQ permit is not required. The Contractor shall, regardless of the size of the area disturbed, provide storm water pollution prevention to protect downstream water quality. If construction activity increases and the disturbed area increases to 1 or more acres, the Contractor will be required to comply with the applicable sections above.

DIVISION C  
CONCRETE AND METALS

## TECHNICAL SPECIFICATIONS

### SECTION C1 - CONCRETE FORMWORK

1. SCOPE: Work in this section includes all labor, plant and material necessary to furnish and install all concrete formwork required by the project. Concrete formwork shall conform to all requirements of ACI 301 "Specifications for Structural Concrete for Buildings" and ACI 318 "Building Code Requirements for Reinforced Concrete" and ACI 347 "Recommended Practice for Concrete Formwork" except as modified herein.
2. MATERIALS:
  - A. Forms shall be of wood, metal, highly water resistant plywood, or other material approved by the Engineer. Forms for sections greater than 18" thick shall be of wood. Form surfaces shall be smooth and free from irregularities, dents, sags, or holes when used for permanently exposed surfaces. Bolts and rods used for internal ties shall be so arranged that, when the forms are removed, all metal will not be less than two (2) inches from any concrete surface. Wire ties will not be permitted where concrete surface will be exposed to weathering, and discoloration would be objectionable. Exposed concrete shall have approved form liners of Masonite or plywood, or shall be constructed of smooth surfaced plywood.
  - B. Corner forms forming 1/2 inch chamfers or as otherwise specified on plans, shall be used on all outside corners that are to be exposed in the finished structure. Chamfer forms shall be molded plastic or polyvinyl chloride radius of chamfer strips. Use one style of form throughout the project.
  - C. Rustication and Score Line Strips shall be a non-absorbent material such as extruded polyvinyl chloride, plastic, fiberglass or metal or they may be milled from good quality lumber and well sealed to prevent moisture absorption, wood strips may not have protruding splinters which may become embedded in the concrete. Sealing wood shall be accomplished by immersion or brushing on two coats of form coating.
  - D. Form ties for concrete shall have an approved waterstop barrier to prevent seepage of moisture along the ties. The ends of the tie metal after breaking off shall be minimum of 1 1/2 inches from the finished wall face. Submit samples to the Engineer for review.
3. EXECUTION: Forms shall be built true to line and grade, and be mortar-tight and sufficiently rigid to prevent displacement or sagging between supports. All formwork and shoring shall be designed for the construction loads to be placed on them, and the design and construction of said forms shall be in accordance with ACI Standard "Recommended Practice for Concrete Formwork (ACI 347)". The structural adequacy of the formwork shall rest with the Contractor. All forms shall be so constructed that they can be removed without hammering or prying against the concrete. Forms shall not be removed without approval of the Engineer. Forms shall not be removed before the minimum times given below, or longer if job control tests indicate the concrete has not attained strength specified below, except when specifically authorized by the Engineer.

Beams and Slabs	14 days
Walls up to 12" Thick and Vertical Surfaces	3 days

Columns  
Walls greater than 12" Thick

5 days  
7 days

In general, forms or shores for supported slabs and beams shall not be removed until the concrete, so supported, has acquired 70% of its design strength; except where loads other than the dead weight of the concrete are added, the shores shall not be removed until 24 hours after the concrete has obtained 90% of its design strength. Forms shall be removed immediately after expiration of the lapsed time specified above or sooner, if required by the Engineer, where concrete is to receive a rubbed finish.

## TECHNICAL SPECIFICATIONS

### SECTION C2 - STEEL REINFORCEMENT

1. **MATERIAL:** Steel reinforcement shall conform to the "Specification for Deformed Billet Steel Bars for Concrete Reinforcement" ASTM A615, Grade 40.

Wire fabric reinforcement shall conform to the current "Specifications for Welded Steel Wire Fabric for Concrete Reinforcement", ASTM A-185, or "Specifications for Welded Deformed Steel Wire Fabric for Concrete Reinforcement", ASTM A-497.

2. **STORAGE:** Reinforcement shall be stored above the ground surface upon skids, platforms or other supports and shall be protected from mechanical injury and surface deterioration by exposure to the weather.

3. **SPLICES:** No splices of bars, except when shown on the Plans, will be permitted without the approval of the Engineer. Bars shall be rigidly clamped or wired at all splices in a manner approved by the Engineer. Welding may not be used except with the specific approval of the Engineer. Welding, when approved, shall conform to the American Welding Society's "Recommended Practices for Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction" (AWS D12.1). Welded wire fabric shall be lap spliced a minimum of 2 inches plus the bar spacing. Splices in reinforcing bars shall conform to the general requirements of the ACI Code, except ring tension reinforcement splices, which should be a minimum of 40 bar diameters. Splices should be staggered where possible or increased by 30%.

4. **DETAILING & FABRICATION:** Furnish Shop Detail and Field Placing Drawings for all reinforcing steel for approval of the Engineer. Shop Drawings shall include reinforcing, placing plans and details indicating size, location, arrangement, splice locations, bending diagrams, placing sequence, etc. Placing Drawings shall be insufficient detail to allow field personnel to accurately place reinforcing. Shop and Placing Drawings shall be prepared in accordance with "Manual of Standard Practice for Detailing Reinforced Concrete Structures" ACI 315-65, current edition.

Reinforcement bars shall be bent cold to the shapes indicated on the Plans. Fabrication tolerances, fabrication, and detailing of steel reinforcement shall conform to the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI-315).

Steel reinforcement shall be of the type and size, cut to lengths and bent to shapes as indicated on the Plans. Unless otherwise indicate, hooks, laps, splices, embedment lengths, and other details of reinforcement shall be provided as set forth in the

ACI Building Code (ACI-318) to develop the full tensile strength of the bar.

5. **PLACING REINFORCEMENT:** Metal reinforcement at the time concrete is placed shall be free from mud, oil, paint, excessive rust and excessive mill scale or any other coating that would destroy or reduce its bond with the concrete.

Metal reinforcement shall be accurately positioned and dimensioned in accordance with the Plans and Specifications. The bars and mesh shall be tightly secured against displacement by

ties of annealed wire, or suitable clips at intersections. Wall reinforcement shall be supported and held securely against displacement in its proper position clear of the forms as indicated on the Plans. Placing tolerances shall conform to ACI-318.

Nails shall not be driven into the wall forms to support reinforcement nor shall any other device used for this purpose come in contact with the form on the waterside of any water containing structure. Metal devices used to provide the required clear distances from reinforcing steel to waterside of concrete surfaces shall be galvanized, or shall be as approved by the Engineer.

The main reinforcement of slabs in contact with the ground shall be supported in its proper position, as indicated on the Plans, by means of precast cement mortar blocks, of approved dimensions, resting on the slab's subbase. Such precast blocks shall be made of mortar composed of 1 part cement to 2 parts sand. Blocks shall be spaced at the intervals required to maintain the reinforcement in its required position in the slab during the placing of the concrete. The slab reinforcement shall not be used to support planking or runways used in placing concrete.

Bending of bars embedded in hardened concrete will not be permitted except when specifically approved by the Engineer for the field condition encountered.

In the case of floor slabs, galleries, deck slabs, and beams, metal chairs, spacers and other metal accessories necessary to provide the required clear distances and proper alignment and spacing between bars shall be galvanized or shall have plastic protective covering over portions in contact with forms.

6. **CONCRETE PROTECTION FOR REINFORCEMENT:** Steel reinforcement shall be placed and held in position so that the concrete cover, as measured from the surface of the bar shall be the following, except as otherwise shown, specified, or directed:

Slabs:

- 1 1/2 inches, in general, top and bottom.
- 1 1/2 inches at surfaces troweled as floor finish, walkway, or driveway.
- 2 inches on bottom for slabs over water and where exposed to the weather.

Footings:

- 2 inches at top of footings.
- 3 inches at bottom, sides, and end of footings.

Walls:

- 2 inches on surfaces against earth.
- 1 inch on interior surfaces.
- 2 inches on interior surfaces contacting water.

Beams and Girders in Contact with Water:

- 2 inch minimum to stirrup steel.
- 2 1/2 inch minimum to main longitudinal steel.



Columns:

2 inches, in general, to main vertical reinforcement.

2 1/2 inches, to main reinforcement on surfaces in contact with water.

Beams and Girders:

1 1/2 inch minimum to stirrup steel.

2 inches minimum to longitudinal Steel.

## TECHNICAL SPECIFICATIONS

### SECTION C3 - CAST-IN-PLACE CONCRETE

#### 1. GENERAL:

- A. Standards: Concrete work shall conform to all requirements of ACI-301 "Specifications for Structural Concrete for Buildings" ACI-318 "Building Code Requirements for Reinforced Concrete" ACI-350 "Concrete Sanitary Engineering Structures", and ACI 305 and 306 "Recommended Practice for Hot (Cold) Weather Concreting", and the provisions of these specifications.
- B. Scope: Work consists of furnishing all plant, labor, materials, equipment, and appliances, and performing all operations in connection with installation of the concrete work, complete, in strict accordance with the Specifications and Drawings.
- C. Inspection: Embedded items must be inspected and tests for concrete and other materials shall have been completed and approved by the Engineer before concrete is placed.

#### 2. MATERIALS: All concrete materials shall conform to the latest revised ASTM Designations listed below:

- A. Coarse Aggregate shall consist of gravel, crushed gravel, crushed stone, air-cooled blast furnace slag, or a combination thereof, conforming to ASTM C-33 with a maximum size of 1-1/2"
- B. Fine Aggregate shall conform to ASTM C-33 and shall be washed river sand composed of clean, uncoated grains of strong materials.
- C. Cement shall be Portland cement conforming to ASTM Specification C-150, Type I, Type IA, Type III, or Type IIIA. Only one brand of cement shall be used for exposed concrete.
- D. Water: Clean, fresh and free from oil, acids, alkali, vegetable, sewerage, organic or other deleterious matter.
- E. Admixtures: A cement reducing admixture conforming to ASTM C-618 will be used for all concrete at the Contractor's option. Concrete mix designs shall include the admixture, should this option be exercised.

Admixture shall be a cement dispersing agent used in conformance with manufacturer's directions. The dispersing agent used shall be subject to the approval of the Engineer. Contractor shall notify Engineer in writing that he is taking this option.

A retarding admixture, conforming to ASTM C-494, pretested with job materials under job conditions, shall be used, if approved, whenever necessary to prevent cold joints due to the quantity of concrete placed, to permit revibration of the concrete, to offset the effects of high concrete temperature, or to reduce the maximum temperature and rate of temperature rise.

- F. Premolded Expansion Joint Filler Strips shall be nonextruding type conforming to the current AASHTO Designation M153.
- G. Abrasive Aggregate shall be equal to fine (c.f.) "Alundum" aggregate as manufactured by Norton Company, Worcester, Mass. or "Frictex NS" as manufactured by Sonneborn-Contech.
- H. Curing Compound: Concrete curing compound shall be of a nature and composition not deleterious to concrete and shall be of a standard and uniform quality ready for use as shipped by the manufacturer. At the time of use, the curing compound shall be in a thoroughly stirred condition. Curing compounds shall not be diluted by the addition of solvent or thinners, or be altered in any manner without the specific approval of and in a manner prescribed by the manufacturer. Curing compound shall conform to the requirements of ASTM C309 Type 1.

The curing compound shall be sufficiently transparent and free from color that there will be no permanent change in the color of the concrete. The compound shall contain, however, a temporary dye of sufficient color to make the membrane clearly visible for a period of at least four hours after application.

- I. Cement Grout: Cement based grout shall be used for grouting work except as otherwise specified.
  - (1) Quality: Grout shall be composed of cement, sand, admixtures and water proportioned and mixed as hereinafter specified.
  - (2) Cement: Cement for grout shall be Type I normal Portland cement conforming to the specifications for cement in concrete. Type III high early strength Portland cement may be used only when approved by the Engineer.
  - (3) Sand: Sand shall conform to ASTM C33 and shall be graded so that 100% by weight will pass a standard No. 8 mesh sieve, and at least 45% by weight will pass a standard No. 40 mesh sieve.
  - (4) Design Mix: Grout shall be a mixture of one part cement to two parts sand with a water cement ratio of 0.55. Drypack grout shall be a mixture of one part cement, two parts sand and the minimum amount of water required for mixing and placing. When shrinkage control of standard grout is required, aluminum powder shall be added as herein specified.
  - (5) Mixing: Mixing and placing apparatus shall be similar to that specified for concrete. Grout shall be mixed for a period of at least one minute. Diluted grout shall be agitated from time to time as considered necessary to keep the ingredients well mixed and in suspension. Sand and cement shall be free from lumps when placed in the mixer. Grout shall be screened to remove coarse particles.
- J. Nonshrink Cement-Based Grout: Grout for setting equipment, column and other bases and anchor bolts shall be nonshrink cement-based grout. Nonshrink cement-based grout shall consist of pre-measured, prepackaged materials supplied by the

manufacturer, requiring only the addition of potable water. The manufacturer's instructions shall be printed on the outside of each bag.

The manufacturer shall submit information verifying the cement-based grout exhibits the following properties:

- (1) Nonshrink -- No shrinkage (0.0%) and a maximum 4.0% expansion when tested in accordance with ASTM C-827. No shrinkage (0.0%) and a maximum of 0.2% expansion in the hardened state when tested in accordance with CRD-C 621.
- (2) Compressive Strength -- A minimum 28-day compressive strength of 5,000 psi when tested in accordance with ASTM C-109.
- (3) Setting Time -- A minimum initial set time of 60 minutes when tested in accordance with ASTM C-191.
- (4) Composition -- No metallic particles (aluminum powders, iron fillings) or expansive cement.

The contractor shall perform all grouting in accordance with the manufacturer's recommendations, Technical service shall be supplied upon request.

Grout shall be Five Star Grout, as manufactured by U.S. Grout Corporation, Fairfield, CT or equal.

K. Nonshrink Epoxy-Based Grout: Nonshrink Epoxy-based Grout shall be a pourable, 100% solids epoxy system consisting of three, pre-measured, prepackaged components: resin, hardener, and specially-blended aggregate. Resin component shall not contain any non-reactive diluents. Variation of component ratios is not permitted unless specifically recommended by the manufacturer. The manufacturer shall submit information verifying the epoxy grout exhibits the following properties:

- (1) Grout for bonding new cement to old, setting reinforcing dowels into pre-drilled holes and or pressure grouting shall be an epoxy grout mixed in accordance with the manufacturer's instructions.
- (2) Nonshrink -- No shrinkage (0.0%) and a maximum 4.0% expansion when tested in accordance with ASTM C-827.
- (3) Compressive Strength -- A minimum compressive strength of 10,000 psi in 7 days when tested according to ASTM C-579, Method B.
- (4) Heat Development -- A maximum 100 degrees F peak exotherm in a 2" diameter x 4" high sample when tested at 75 degrees F material and laboratory temperatures.
- (5) Thermal Coefficient -- A maximum 30 x 10 in./ in./ degree F thermal coefficient when tested according to ASTM C-531.

The contractor shall perform all grouting in accordance with the manufacturer's recommendations. Technical service shall be supplied upon request.

Grout shall be Five Star Epoxy Grout, as manufactured by U.S. Grout Corporation, Fairfield, CT or equal.

- L. Drypack Mortar: Drypack mortar shall be composed of approximately one part Type II Portland cement, 1-1/2 to 2 parts sand, 2 to 3 fluid ounces water reducing densifier per sack of cement, aluminum powder as required for shrinkage control, and sufficient water to make a stiff workable mix. Sand, cement, water, and water reducing densifier shall be as specified for concrete.

3. QUALITY AND CONTROL

- A. Design: Concrete shall be composed of Portland cement, fine aggregate, coarse aggregate and water. All concrete shall be designed by an approved testing laboratory in accordance with the ACI Standard Recommended Practice for Selecting Proportions for Concrete (ACI-211) to produce the strength for each class of concrete specified, and with slumps and maximum sizes of coarse aggregate in accordance with the requirements outlined below. The concrete shall be so designed that the concrete materials will not segregate and excessive bleeding will not occur. Any costs to the testing laboratory for designing concrete mixes shall be borne by the Contractor.

Prior to placing any concrete, the Contractor shall submit for review mix designs for each specified concrete and grout type. Design data shall include the name of the concrete supplier; manufacturer/supplier and type of cement used; size and type of aggregate; proportional weights of cement, aggregate, and water per cubic yard of concrete; name and quantity of admixture used. Trial batches shall be made and the following data shall be submitted: 1-seven day, 1-14 day, and 1-28 day compressive strength test for each mix at various slumps; and percent of air content for each mix. No deviation for accepted mix designs will be permitted without prior written approval by the Engineer.

Concrete strengths shall be as follows:

Class A Concrete	-	3500 psi @ 28 days; minimum 5 1/2 sack mix (To be used for all work unless otherwise specified)
Air Content	-	4 - 1%
Maximum Water Cement Ratio	-	0.45
Class B Concrete	-	2000 psi @ 28 days; minimum 4 sack mix (To be used only as concrete fill)

**MAXIMUM SLUMPS FOR VARIOUS  
TYPES OF CONSTRUCTION**

<u>Types of Construction</u>	<u>Hand Placed Maximum</u>	<u>High Frequency Vibrator Used Maximum</u>
Reinforced Foundation Walls and Footings	4"	2"
Slabs, Beams, and Reinforced Walls	4"	3"
Building Columns	4"	3"
Pavements	3"	2"

The slump shall not exceed the maximum specified above for the type of construction for which it is to be used. The 28-day compressive strength determined in accordance with current ASTM Specifications C-39 and C-31 and with specimens cured in accordance with C-31 shall not be less than that shown above for the specified class of concrete. No water will be added after the amount specified by the mix design.

- B. Production of Concrete: All ready-mixed concrete shall be batched, mixed and transported in accordance with "Specifications for Ready-Mixed Concrete (ASTM C-94)". Plant equipment and facilities shall conform to the "Check List for Certification of Ready-Mixed Concrete Production Facilities" of the National Ready-Mixed Concrete Association. Site mixed concrete shall conform to the requirements of "Specifications for Structural Concrete" (ACI-301). The Contractor may elect to use either ready-mixed or site mixed concrete for this project provided he informs the Engineer of his choice.
- C. Laboratory Testing: The Owner shall engage an independent testing laboratory to conduct concrete tests. Unless otherwise informed, the Contractor will be responsible for sampling concrete for test cylinders, recording, and delivering them to the laboratory, providing all materials required, and for making all slump tests in the field directed by the Engineer. All costs in connection with work performed by the laboratory will be paid by the Owner. The Contractor shall be responsible for the costs of work performed by the laboratory required for redesign of concrete proportions and retesting of in place concrete when cylinders indicate low strength concrete has occurred.

At least one test shall be made on fresh concrete for each sixty (60) cu. yds. of each class of concrete (or fraction thereof) placed on any one day and in any event, not less than one test for each class of concrete each day it is used. Testing shall be done in accordance with the following ASTM Specifications, latest edition:

C172,	Standard Method of Sampling Fresh Concrete
C31,	Standard Method of Making and Curing Concrete Compression & Flexure Test Specimens in the Field
C39,	Standard Method of Test of Compressive Strength of Molded Concrete Cylinders
C143,	Standard Method of Slump Test for Consistency of Portland Cement Concrete

Before any concrete is poured, the Contractor shall construct a storage box in accordance with ASTM Specification C31. Each set of tests shall consist of one slump test and three compression test cylinders. All cylinders shall be kept in the storage box for the first 24 hours. The three cylinders shall be laboratory cured and tested for

adequacy of the design for strength of the concrete in accordance with ASTM Specification C31. One cylinder shall be tested at 7 days and two at 28 days.

- D. Failure of Concrete to Meet Strength Requirements: The concrete shall be considered acceptable if, for any one class of concrete, the average of all tests or any five consecutive tests is equal to or greater than the specified strength, provided that no more than one test of the five falls between 90% and 100% of the specified strength. The only cylinders to be used for determination of concrete acceptability will be those laboratory cured and tested at 28 days. When it appears the tests of laboratory-cured cylinders will fail to meet these requirements, the Engineer may require changes in the proportions of concrete for the remainder of the work in order to meet the strength requirements. In addition, the Engineer may also require additional curing not to exceed a total of 21 days on portions of the concrete already poured.

The Engineer may also require tests in accordance with Methods of Securing, Preparing and Testing Specimen from Hardened Concrete for Compressive and Flexural Strengths (ASTM Specifications C42) when the concrete cylinder tests fail to meet strength requirements. In the event there still is questions as to the quality of the concrete in the structure, the Engineer may require load tests for that portion where the questionable concrete has been placed. Such load tests will be made as outlined in Chapter 20 of American Concrete Institute Building Code. (ACI 318-71), and shall be at the expense of the Contractor.

- E. Removal of Under Strength Concrete: If the above tests indicate that a particular batch of previously placed concrete is under strength, the Engineer may direct that the under strength batch be removed and replaced. The removal of the under strength concrete shall also include the removal of concrete that has obtained the required strength if the Engineer deems this necessary to obtain structural or visible continuity when the concrete is replaced.

The removal, and replacement of any under strength concrete, shall be made at no additional cost to the Owner. This shall include any new formwork required or any reinforcing steel that may be required. The Owner shall not be charged any additional costs for any extra work that is required because of the failure of any concrete to meet the minimum test requirements.

#### 4. INSTALLATION:

- A. Preparation before Placing: Water shall be removed from excavations before concrete is deposited. Hardened concrete, wood chips, shavings, and other debris shall be removed from interior of forms and inner surfaces of mixing and conveying equipment. Wood forms shall be oiled or, except in freezing weather, wetted with water in advance of pouring. Reinforcement shall be secured in position, inspected and approved by the Engineer before starting pouring of concrete.
- B. Conveying: Concrete shall be conveyed from mixer to forms as rapidly as practicable and by methods which will prevent segregation or loss of ingredients. It shall be deposited as nearly as practicable in its final position. Chutes used shall be such that concrete slides in them and does not flow. Chutes, if permitted, shall have a slope of less than 1 on 2. Where a vertical drop greater than five (5) feet is necessary, placement shall be through elephant trunks or similar devices to prevent segregation.

- C. Placing: Concrete shall be placed before initial set has occurred and in no event after it has contained its water content for more than 30 minutes. Unless otherwise specified, all concrete shall be placed upon clean, damp surfaces free from running water, or upon properly consolidated fills, but never upon soft mud or dry, porous earth. The concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures as to prevent segregation of the coarse aggregate. Construction of forms for the lifts of vertical walls shall be such as to make all parts of the walls easily accessible for the placement, spading, and consolidation of the concrete as specified herein.
- D. Vibration: All concrete shall be placed with the aid of mechanical vibration equipment as approved by the Engineer. Vibration shall be transmitted directly to the concrete; in no case shall it be transmitted through forms. The duration of vibration at any location in the forms shall be held to the minimum necessary to produce thorough compaction. Vibrations shall be supplemented by forking or spading by hand, and adjacent to the forms on exposed faces in order to secure smooth, dense and even surfaces, with particular care being taken to prevent coarse aggregate from becoming set too near any surfaces that are to receive rubbed finish.
- E. Construction Joints: Construction joints shall be formed as indicated on the Drawings or as approved or directed by the Engineer. Where indicated or required, dowel rods shall be used. All concrete at the joints shall have been in place not less than 12 hours, and longer if so directed by the Engineer, before concrete resting thereon is placed. Before placing is resumed or commenced, excess water and laitance shall be removed and concrete shall be cut away, where necessary, to insure a strong dense concrete at the joint. In order to secure adequate bond, the surface of concrete already in place shall be cleaned, roughened, and then spread with a one-half (1/2) inch layer of mortar of the same cement-sand ratio as is used in the concrete, immediately before the new concrete is deposited. The unit of operation is not to exceed 100 feet in any horizontal direction, unless otherwise required by the Drawings. Construction joints, if required, shall be located near the mid-point spans for slabs, beams or girders. Joints in columns or piers shall be made at the underside of the deepest beam or girder at least five (5) hours before any overhead work is placed thereon. Joints not shown or specified shall be so located as to least impair strength and appearance of work. Vertical joints in wall footings shall be reduced to a minimum. Placement of concrete shall be at such a rate that surfaces of concrete not carried to joint levels will not have attained initial set before additional concrete is placed thereon. Girders, beams and slabs shall be placed in one operation. To insure a level straight joint in exposed vertical surfaces, a strip of dressed lumber may be tacked to the inside of the forms at the construction joint. The concrete shall be poured to a point one (1) inch above the underside of the strip. The strip shall be removed one (1) hour after concrete has been placed and any irregularities in the joint line leveled off with a wood float and all laitance removed. Waterstops shall be installed in all construction joints below grade or in liquid containing structures as noted on the Plans. Install as per SECTION C4 - CONSTRUCTION JOINTS.
- F. Patching: Any concrete which is not formed as shown on the Plans, or for any reason is out of alignment or level or shows a defective surface shall be considered as not conforming with the intent of these Specifications and shall be removed from job by Contractor at his expense, unless the Engineer grants permission to patch defective area, which shall be done in accordance with the following procedure. Permission to



patch any such area shall not be considered a waiver of the Engineer's right to require complete removal of defective work if patching does not, in his opinion, satisfactorily restore quality and appearance of surface. Suitable non-shrink, latex or epoxy mortar shall be used for patching and repairing defective surface if directed by the Engineer.

After removing forms, all concrete surfaces shall be inspected and any poor joints, voids, stone pockets, all tie holes, or other defective areas shall be patched, if permitted by the Engineer. Where necessary, defective areas shall be chipped away to a depth of not less than one (1) inch with edges perpendicular to the surface. Area to be patched and a space at least six (6) inches wide entirely surrounding it shall be wetted to prevent absorption of water from the patching mortar. A grout of equal parts Portland cement and sand, with sufficient water to produce a brushing consistency, shall then be well brushed into the surface followed immediately by the patching mortar. The patch shall be made of the same material and of approximately the same proportions and shall not be richer than 1 part cement to 3 parts sand. White Portland cement shall be substituted for a part of the gray Portland cement to match color of the surrounding concrete. The proportion of white and gray cements shall be determined by making a trial patch. The amount of mixing water shall be as little as consistent with the requirements of handling and placing. The mortar shall be retempered without the addition of water by allowing it to stand for a period of one (1) hour during which time it shall be mixed occasionally with a trowel to prevent setting.

The mortar shall be thoroughly compacted into place and screeded off so as to leave patch slightly higher than surrounding surface. It shall then be left undisturbed for a period of 1 to 2 hours to permit initial shrinkage before being finally finished. The patch shall be finished in such a manner as to match the adjoining surface. On exposed surfaces where unlined forms have been used, the final finish shall be obtained by striking off the surface with a straightedge spanning the patch and held parallel to the direction of the form marks.

Tie holes left by withdrawal of rods or the holes left by removal of ends of ties shall be filled solid with mortar after first being thoroughly wetted.

- G. Slabs on Grade: The Contractor shall insure that subgrade has been thoroughly compacted and leveled prior to concrete placement. Sprinkle all subgrades with water no more than 1/2 hour prior to placing concrete.

Place vapor barrier below interior slabs unless noted otherwise. Sprinkling of fill is not necessary when using vapor barrier. Lap vapor barrier 6" in direction of pour, and seal laps with specified mastic. Repair all ruptures of the vapor barrier that might occur before or during concrete pour.

The Contractor shall insure that all reinforcing steel is located properly prior to pour, and that steel will not be vertically displaced during the pour.

- H. Edging: Edges exposed to view on the outside of structures, footings, pads and slabs, and all those in the inside of structures shall be chamfered, beveled or neatly edged with a radius tool as approved by the Engineer. Bevel shall be at an angle of 45 degrees, such bevel being 3/4 inch on a side. If so required by the Engineer, however, the Contractor shall provide square edges for any portion of the work.

5. SLAB FINISHES:

- A. Exterior Walks & Paving: The top surface shall be "slip-resistant" as follows:

Steel troweled as noted in SECTION C3.5B and have a final finish applied in brushing lightly with a soft bristle brush to form a slightly roughed surface.

- B. Interior slabs that are to receive a finish floor covering (this does not include ceramic tile covering) shall be finished by tamping the concrete with special tools to force the coarse aggregate below the surface, then screeding and floating with straightedges to bring the surface to the required finish level. While the concrete is still green but sufficiently hardened to bear a man's weight without deep imprint, it shall be wood floated to a true and even plane with no coarse aggregate visible. Sufficient pressure shall be used on the wood floats to bring moisture to the surface. After surface moisture has disappeared, surfaces shall be steel-trowelled to a smooth, even, impervious finish, free from trowel marks. After cement has set enough to ring the trowel, surface of all slabs shall be given a second steel trowelling to a burnished finish.
- C. Interior slabs to receive fill or mortar setting bed shall be finished by tamping concrete with special tools to force coarse aggregate below the surface, and screeded with straightedges to bring surface to required finish plane. Surface shall be left roughened sufficiently to produce good bond with topping material.
- D. Top and bottom slabs of all structures and water carrying conduits except as noted otherwise on the Plans shall be finished as follows: The top of the slab shall be screeded to grade and cross section; lightly tamped as required to bring up a good bed of mortar for finishing and re-screeded as necessary. The surface shall then be finished with a wood float and leveling darby. No further finish will be required on top slabs of structures or conduits which are to be buried. In the case of all exposed top slabs of structures and conduits, they shall be given a final wood float and a light broomed, slip resistant finish to a uniform surface which conforms with accuracy to required shape, slope and grade. Slabs shall be edged as appropriate.
- E. Interior floor slabs that are not to receive any finish floor covering shall be "slip resistant finish" as follows: The top surface shall be steel trowelled as noted in C3.5B above and have a final finish applied by brushing lightly with a soft bristle brush to form a slightly roughed surface.
- F. The floor surfaces of basins in which raking mechanisms are to be installed shall be finished, as indicated on the Drawings, by sweeping in cement grout with the mechanism. The cement grout to be used shall be composed of one part Portland cement and two parts sand by weight.

The sweeping-in process shall be performed under the supervision of the Engineer or, if necessary, under the supervision of a factory representative of the equipment manufacturer. The slab upon which the grout is to be applied shall be finished in accordance with the provisions of paragraph C3.5D above except that after leveling and floating, it shall be raked in such a manner as to provide a good bond for the grout. Before grout is deposited on the slab, it shall be thoroughly cleaned, wet down with clean water, and lightly dusted with neat cement immediately prior to placement of the grout.

- G. Concrete Hardener shall be applied to the floors where scheduled to be exposed concrete. Concrete surfaces to be treated must be thoroughly set and dry, clean and free of dust. Three applications of "lapidolith", "saniseal", "hornolith", "vitrox", or equal liquid are required, using one gallon per 100 square feet for the complete treatment. Apply hardener strictly according to the manufacturer's printed instructions. Any substitution for the specified hardeners must be of the magnesium fluosilicate or zinc fluosilicate types.

6. FINISH OTHER THAN FLOORS:

- A. All top surfaces, other than slabs, not covered by forms, and which are not to be covered by additional concrete or fill shall receive a wood float finish without additional mortar. Care shall be taken that no excess water is present when the finish is made. Other surfaces shall be brought to finished elevations and left true and regular. All exposed interior concrete shall be grouted smooth and give a cement wash of one part light colored Portland cement and two parts fine aggregate mixed with water to consistency of thick paint. Grout shall be cork or wood floated to fill all pits, air bubbles, and surface holes. Excess grout shall be scraped off with a trowel and rubbed with burlap to remove any visible grout film. Surface shall be kept damp during setting period. The finish for any area shall be completed in same day and the limits of a finished area shall be made at natural breaks in finished surface.
- B. Rubbed Finish Unless otherwise indicated, all faces (except top surfaces of slabs) exposed to view, such as walls, grade beams, columns, beams, canopy soffits and fascias, etc. shall be finished as follows:

Forms shall be removed, as specified in SECTION C1 - CONCRETE FORMWORK, and all fins removed, offsets leveled, damaged places and depressions resulting from the removal of metal ties or other causes shall be carefully pointed with a mortar of sand and cement in the proportion which has been employed for the particular class of concrete treated. The surface film of all such pointed places shall be carefully removed before setting occurs. After the point has set sufficiently to permit it, all exposed surfaces shall be dampened and rubbed with a No. 16 carborundum stone, to a smooth even plane. Final rubbing shall be done with a No. 30 carborundum stone, or an abrasive of equal quality, to obtain an entire surface of a smooth texture and uniformity in color. Mortar or grout worked up during rubbing shall be promptly removed by sacking with burlap or other suitable means so that no visible grout film or paste will remain. A cement wash or plaster coat shall not be used. All surfaces shall be finished uniformly smooth and washed clean. The rubbed finish for any area shall be completed in the same day and the limits of a finished area shall be made at natural breaks in the finished surface. If the Contractor does not provide suitable surface finish using carborundum stones specified above, the Engineer, without additional cost to the Owner, may require the use of a power operated grinding machine to produce the desired finish.

7. CURING:

- A. Unformed concrete surfaces shall be water cured to prevent check of the fresh concrete surface. Where drying conditions are severe, as determined by the Engineer, fog sprays shall be employed to prevent checking of the fresh concrete surface. Fog spraying shall be continued as specified until the finished surface has attained sufficient strength to

permit flooding or covering with burlap mats. Where drying conditions are not severe, as determined by the Engineer, unformed concrete surfaces shall be covered with wet burlap mats as soon as the concrete has sufficiently set, and shall thereafter be kept under wet burlap.

Formed surfaces, both interior and exterior, shall be water cured by water sprays or under burlap mats beginning as soon as the forms are stripped. Prior to stripping of forms, the concrete and forms shall be kept moist by the water sprays.

Unless otherwise specified, surfaces shall be water cured for 7 days after the concrete is placed.

After 48 hours of water cure, and with the acceptance of the Engineer, the curing of concrete surfaces may be completed by the curing compound method. Curing compounds shall be applied in strict conformance with the manufacturer's instructions. If the compound is applied to a surface which is later to be painted, the Contractor shall thoroughly sandblast the surface to remove all vestiges of the compound prior to concrete finishing. Curing compound shall not be used on any surfaces against which additional concrete or other finishing materials are to be bonded.

- B. In all concrete structures, Class A concrete made with normal Portland cement shall be prevented from drying for at least the first seven (7) days after placing. Whenever the temperature of the surrounding air is between 40 deg. and 60 deg. F., adequate provision shall be made for maintaining the temperature of concrete above 60 deg. F. or the moist curing period shall be extended to insure a compressive strength corresponding to that which would be secured under provisions of the previous part of this paragraph.
  - C. Whenever the temperature of surrounding air is below 40 deg. F., all Class A concrete shall be maintained at a temperature of not less than 50 deg. F. for at least 72 hours for normal concrete or for as much more time as is necessary to insure proper rate of curing of the concrete. The housing, covering or other protection used in connection with curing shall remain in place and intact at least 24 hours after the artificial heating is discontinued. No salt or other chlorides shall be used for prevention of freezing.
  - D. Protection from the Sun: All concrete shall be adequately protected from injurious action of sun in a manner satisfactory to the Engineer.
  - E. Temperature Control: During and at the conclusion of the specified curing period, means shall be provided to insure that the temperature of the air immediately adjacent to the concrete does not fall more than 3 deg. F in any 1 hour nor more than 30 deg. F in any 24 hours.
8. **CONCRETING IN COLD WEATHER**: When the atmospheric temperature may be expected to drop below 40 deg. F at the time concrete is delivered to the work site, during placement, or at any time during the curing period, the following provisions also shall apply:
- A. The temperature of the concrete at the time of placing shall not be less than 50 deg. F nor more than 90 deg. F. The temperature of neither aggregates nor mixing water shall be more than 100 deg. F just prior to mixing with the cement.

- B. When the daily minimum temperature is less than 40 deg. F, concrete structures shall be insulated or housed and heated after placement. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than 50 deg. F nor more than 90 deg. F for the duration of the curing period.
  - C. Methods of insulating, housing, and heating the structure shall conform to "Recommended Practice for Cold Weather Concreting," ACI Standard 306.
  - D. When dry heat is used to protect concrete, means of maintaining an ambient humidity of at least 40% shall be provided unless the concrete has been coated with curing compound as specified in Section 21 or is covered tightly with an approved impervious material.
9. CONCRETING IN HOT WEATHER: When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 90 deg. F at the time of delivery at the work site, during placement, or during the first 24 hours after placement, the following provisions also shall apply:
- A. The Contractor shall maintain the temperature of the concrete below 90 deg. F during mixing, conveying, and placing. Methods used shall conform to "Recommended Practice for Hot Weather Concreting," ACI Standard 305.
  - B. The concrete shall be placed in the work immediately after mixing. Truck mixing shall be delayed until only time enough remains to accomplish it before the concrete is placed.
  - C. Exposed concrete surfaces which tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying during the time between placement and finishing, and after finishing.
  - D. Finishing of slabs and other exposed surfaces shall be started as soon as the condition of the concrete allows and shall be completed without delay.
  - E. Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 48 hours of the curing period, and for the entire curing period unless curing compound is applied as specified.
  - F. Formed surfaces shall be kept completely and continuously wet for the duration of curing period (prior to, during, and after form removal) or until curing compound is applied as specified.
10. INSERTS AND EMBEDDING:
- A. Inserts: Where pipes, castings or conduits are to pass through the walls, the Contractor shall place such pipes or castings in the forms before pouring the concrete, or in special cases, with the express consent of the Engineer or as specified, he shall build accepted boxes in the forms to make openings for subsequent insertion of such pipes, castings or conduits as required by the Engineer. To withstand water pressure and to insure watertightness around the openings so formed, the boxes shall be provided with continuous keyways and waterstops all the way around, and they shall have a slight flare to facilitate grouting and the escape of entrained air during grouting. Before placing the

grout, the concrete surfaces and the surfaces of the insert shall be coated with an epoxy bonding compound. Mixing and application of the bonding agent and time of placement of the grout shall be in accordance with the manufacturer's directions.

Additional reinforcement shall be provided around large openings, as shown on the drawings. The pipes, castings or conduits as specified shall be grouted in place by pouring in grout under a head of at least 4 inches. The grout shall be poured or rammed or joggled into place to fill completely the space between pipes, castings or conduits, and the sides of the openings so as to obtain the same watertightness as the wall itself. The grouted castings shall then be water cured as specified herein. The grouting material so placed shall be surfaced when the forms are removed to give a uniform appearance to the wall if such wall be exposed to view.

- B. Embedding: The Contractor shall set accurately and hold in exact position in the forms until the concrete is poured and set, all gate frames, gate thimbles, special castings, channels or other metal parts that are to be embedded in the concrete; and he shall set accurately all inserts and anchor or other bolts necessary for the attaching of piping, valves, metal sash and equipment. All nailing blocks, plugs, strips and the like, necessary for the attachment of trim, finish and similar work shall be furnished and placed by the Contractor.

Blockouts may be used for embedded items, with the prior written consent of the Engineer. Where blockouts are allowed, non-shrink cement based grout shall be used to set the embedded items.

In lieu of embedding anchor bolts and other items to be anchored in the concrete, the Contractor will be permitted with prior written acceptance of the Engineer, to drill holes in hardened concrete and install the anchor bolts and other items with non-shrink epoxy based grout. Drilling or coring holes shall be done by rotary drill with diamond boring or coring bits. Bonding mortar or grout shall be epoxy bonding adhesive grout or epoxy bonding adhesive mortar. Holes shall be blown clean and dry before installation of embedded items. Before insertion, both the hole and the item to be embedded shall be coated with bonding compound. Studs of equal size and length may be substituted for anchor bolts if nut fasteners are used. When accepted by the Engineer, three-part compounded expansion shields may be used for anchorage of minor miscellaneous metal.

11. DRYPACK MORTAR: Where surfaces are required to be built up with mortar, such surfaces shall be thoroughly roughened by brushing, completely cleaned, and coated with appropriate bonding compound before the application of the required mortar. The mortar shall be applied immediately following the application of the bonding compound in bands or strips to form a compact durable covering of the required thickness and shall be free from lumps and depression. Construction joints in the mortar shall be sloped to thin edges and, before application is resumed, the joint shall be thoroughly cleaned. Drypack mortar shall be used for built-up surfaces, setting miscellaneous metal items, and correcting minor repairs and imperfections.

No mortar shall be applied during freezing weather unless adequate protection is provided.

The mortar shall be cured as specified for concrete.

12. MODIFICATION OF EXISTING CONCRETE: Where the work indicated on the drawings required modification of existing concrete structures or concrete poured over six months previously to be removed or modified, the existing concrete shall be cut accurately to the lines required under the supervision of the Engineer. Concrete faces exposed to view shall be cut with a concrete saw. The cutting shall be accomplished in a manner that preserves, free from cracks or other injuries, those parts of the existing structure that are to remain. Where the cut surface is to be left exposed, it shall be cleaned and faced with non-shrink grout and finished to match adjacent surface. Where new concrete or mortar is to be placed against existing concrete surfaces or surfaces that have been cut, such surfaces shall be thoroughly cleaned by sandblasting, if required by the Engineer, and coated with the bonding compound just prior to the placement of the new concrete. Bonding compounds shall be as specified herein. Depth of saw cut should be 3/4" minimum. Unless otherwise indicated on the drawings or specified, continuity of reinforcing steel shall be obtained by either exposing bars to provide sufficient laps with new bars or by welding existing bars with new bars as specified. Where indicated, existing bars shall be exposed and fully developed by; embedding in new concrete.
13. PROTECTION AND REPAIR OF CONCRETE CONSTRUCTION: All surfaces shall be protected against injury. During the first 72 hours after placing the concrete, any wheeling, working or walking on the concrete shall not be permitted. All slabs subject to wear shall be covered with a layer of sand or other suitable material as soon as the concrete has set. Sisalcraft paper or other similar tough waterproof paper may also be used, provided all joints between adjacent strips of paper are carefully sealed. This does not alter the requirements for proper curing as specified herein.

No concrete slabs or top surfaces or walls shall be placed during rain unless acceptable protective shelter is provided, and during such weather, all concrete placed within the preceding 12 hours shall be protected with waterproof canvas or other suitable coverings. These shall be provided and kept ready at hand.

Immediately after the removal of forms, all concrete shall be inspected, and all pour joints, rough sections or rock pockets containing loose materials such size and shape as will form a 1" key for cement mortar fill: Before the mortar is applied, the surface of the existing concrete shall be coated with epoxy bonding compound. All form tie holes and small imperfections shall be filled. The fill for small imperfections and form ties shall consist of cement mortar composed of one part cement well mixed with three parts of the fine aggregate by volume and just enough water so that the mortar will stick together on being molded into a ball by slight pressure of the hands; and is shall be thoroughly compacted into place. Where the area or volume of defective concrete is large, it may be repaired by; reforming the surface and filling the opening with concrete. For such major repairs, the filling shall be reinforced and doweled securely to the old concrete, neatly finished to match the surface and texture of the adjacent concrete. All patches shall be cured as accepted by the Engineer.

## TECHNICAL SPECIFICATIONS

### SECTION C4 - CONSTRUCTION JOINTS AND WATERSTOPS

C3.1. GENERAL: This section covers construction joints, expansion joints, and the placing of waterstops where such are indicated on the Plans.

C3.2. POLYVINYL PLASTIC WATERSTOP: Waterstops shall be installed in all construction joints with water or other liquid on one side of joint and at other locations as required by the Plans. All waterstops shall be continuous throughout their length.

The waterstops shall be heavy duty polyvinyl waterstop conforming to Corps of Engineers Specification CRD-C-572, latest edition, as manufactured by Serviced Products Division of W.R. Grace and Company; Vinylstops by Sonneborn-Contech; W.R. Meadows, Inc.; Vinylex Corporation; or an equal of the same type and material and approximately equal in dimensions and weight but not necessarily of exactly the same shape. Waterstops shall be "Rib Type" with a center bulb, 4" wide, capable of resisting a maximum pressure load of 65 feet of water, unless otherwise shown on Plans.

"Expansion Type" waterstops shall be of ribbed construction, 6" wide, with a capacity for 1" of movement.

All waterstops shall be installed so that one-half its width will be embedded on one side of the joint and one-half on the other. The Contractor shall employ a method of holding the waterstop in position for the first pour that is satisfactory to the Engineer. The method selected must insure that the waterstop will be held securely in true vertical or horizontal position and in straight alignment in the joint.

Care shall be exercised to insure that the waterstop is completely encompassed in good mortar.

C3.3. JOINTS IN WATERSTOPS: All waterstops shall be continuous and so joined at all points of contact in the same plane, or at intersections with waterstops in different planes, as to form a complete barrier to the passage of water through any construction, contraction, or expansion joint.

Joints in the waterstops, whether made for the purpose of continuity in a straight strip or for the purpose of securing a watertight junction between strips in different planes, shall be made by heat welding as hereinafter specified.

Joints in PVC waterstops shall be made by heating the two surfaces to be jointed until the material has softened to the point where it is just short of being fluid and then bringing the two softened surfaces together with a slight rubbing motion followed by firmly pressing them together so that a solid and tight bond is made.

The joints in strips of waterstop made in the above manner shall be such that the entire cross section of the joint shall be dense, homogeneous and free of all porosity. All finished joints shall have a tensile strength of not less than 75 percent of the material of the strip as extruded.

The heating of the surfaces to be joined shall be done by means of an electric splicing iron designed for the specified purpose and controlled by means of a voltage regulator.



In use, the heat of the hot plate shall be so regulated as to prevent too rapid melting and accompanying charring of the waterstop material.

The use of makeshift hot plates will not be permitted nor will other means of heating the strips to be joined be allowed except in a case of emergency, as determined by the Engineer.

The Contractor shall provide such jigs as will assist in making the joints in a proper and workmanlike manner and in holding the strips so that the alignment of jointed strips is correct and angles are true to those required.

Prior to embedment, all joints in the waterstop strips will be inspected by the Engineer and any found defective shall be remedied without delay.

**C3.4. PROTECTION OF WATERSTOP BETWEEN POURS:** The Contractor shall take such steps as are necessary to protect exposed waterstops in the interim period between concrete pours.

**C3.5. EXPANSION JOINTS:** Expansion joints of the size and type shown on the Plans, or specified herein, shall be placed in concrete pavement or structure as shown on the Plans.

A. **Preformed Asphalt Fiber Joint Material:** Asphalt fiber sheet filler shall consist of preformed strips of inert material impregnated with asphalt. It shall be of the thickness shown on the Plans or indicated in these Specifications.

The sheet filler shall conform to the requirements of AASHTO Specification M-59 with the following additional provisions.

The sheet filler shall be of such character that it will not be deformed by ordinary handling during hot weather nor become hard and brittle in cold weather. It shall be of a tough, resilient, durable material not affected by weathering.

B. **Hot Poured Rubberized Tar Joint Sealer:** Hot poured rubberized mastic sealer shall consist of a mixture of durable, elastic rubber, coal tar pitch, and other materials which will form a resilient and adhesive compound capable of effectively sealing concrete joint surfaces against repeated expansion and contraction. The material shall be installed in accordance with the manufacturer's directions.

**C3.6. CONSTRUCTION JOINTS:** Location of all construction joints shall be approved by the Engineer. Maximum length of wall pours shall be 40 ft. maximum height of wall pours shall be 18 ft. provided in the construction joints or as shown on the plans. Bottom slabs and wall footings for concrete structures that will hold water shall be poured monolithically without cold joints or other discontinuities or weakened areas. Radial control joints consisting of 1/2" to 3/4" wide troweled grooves shall be required at 60 deg. increments in circular slabs. Such joints shall be caulked with epoxy joint sealer after the concrete is cured and prior to placement of grout topping if required. All cracks greater than 0.05" wide not located in control joints shall be sealed by cutting a bevel groove on the water side of the crack 1/2" to 3/4" wide and caulking with epoxy sealant. Crack widths shall be measured at the concrete surface.

**C3.7. ADHESIVE WATERSTOP:** Preformed plastic waterstop shall meet or exceed all requirements of Federal Specification SS-S-00210 Type I or Type II. Such plastic waterstop shall be equal to

SYNKO-FLEX as manufactured by SYNKO-FLEX Products, Inc. Houston, TX or equal and shall meet the following requirements.

The plastic waterstop shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler, and shall contain no solvents, irritating fumes or obnoxious odors. The plastic waterstop shall not depend on oxidizing, evaporating or chemical action for its adhesive or cohesive strength. It shall be supplied in extruded form of suitable cross-section and of a size to seal the joint areas of concrete sections. The plastic waterstop shall be protected by a suitable removable two-piece wrapper. The two-piece wrapper shall be so designed that 1/2 may be removed longitudinally without disturbing the other half, to facilitate application of the sealing compound. The flexible plastic waterstop shall also meet the requirements as stated in the following table:

Composition	Test Method	Min	Max
Bitumen (petroleum plastic content)	ASTM D 4	50	70
Ash-Inert Mineral Matter	AASHTO T 111	30	50
Volatile Matter	ASTM D 6	--	2.0

  

Property	Test Method	Min	Max
Specific Gravity @ 77 deg. F.	ASTM D 71	1.20	1.30
Ductility @ 77 deg. F. (cm)	ASTM D 113	5.0	--
Softening Point	ASTM D 36	320°F.	--
Penetration 77 deg. F. (150 gms) 5 sec.	ASTM D 217	50	120

## TECHNICAL SPECIFICATIONS

### SECTION C5 - STRUCTURAL STEEL AND MISCELLANEOUS METALS

1. **GENERAL:** This section shall cover all ferrous and non-ferrous metals, except castings and sheet metal, whether wrought, rolled, fabricated, or assembled.

Included are beams, columns, lintels, miscellaneous angles, supports for pipe, handrails, embedded items, bolts, nuts, washers, fittings, grates, and similar work.

2. **MATERIALS:** Except as otherwise specified herein or noted on the Plans, structural steel and wrought metals shall meet the requirements of the following standards (current edition):

Structural Steel	ASTM Designation A-36
Standard Bolts	ASTM Designation A-307
High Strength Bolts	ASTM Designation A-325
Stainless Steel Bolts	ASTM Designation A-320-65-B8 (AISI 304)
Mild Steel Plates	ASTM Designation A-283
Cold Rolled Steel	ASTM Designation A-108
Aluminum Structural Shapes and Grate Material	ASTM Designation 6061-T6, 6063-T6

3. **WORKMANSHIP:** Unless otherwise shown, specified, or required, the design, workmanship and erection of structural steel shall conform to the requirements of AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings," as last revised. The Contractor shall be solely responsible for the correctness of all shop and field fabrication and fit.

Members shall be straight, shall fit closely together and the finished work shall be free from burrs, twist, bends, and open joints. Holes, connecting angles, supports, braces, handers, and other incidentals appurtenant to the structural steel work shall be provided as required or as indicated on the Plans.

4. **DETAILING:** The Contractor shall submit five (5) sets of completely detailed Shop and Erection Drawings to the Engineer for approval. The approval of Shop Drawings shall be the responsibility of the Contractor.
5. **GRATING:** Floor grating shall be aluminum and shall be installed where noted on the Drawings. Installation shall be in a neat and workmanlike manner.
  - A. **Aluminum Grating:** All aluminum bar grating shall be type 1R4 Double-Lok joint as manufactured by Reliance Steel Industries, or equal. Size of bearing bars to be as shown on the Drawings. Provide standard clips to make all grating sections fully removable. Edge banding will be required only where noted on Drawings. Coat surfaces in contact with concrete or steel with asphaltic paint or aluminum impregnated caulking compound or other approved permanent insulation.

To be considered equal, a grating must have the same load capacity as the size grating noted on the Drawings. The depth may vary from that shown on the Drawings, provided

adequate provisions are made to make modifications to the bearing and anchorage details.

6. WELDING: All welding operations, processes, equipment, materials, workmanship, and inspection shall conform to the requirements of the latest revision of the "Structural Welding Code" of the American Welding Society (AWS D1.1).

Welds shall be thoroughly washed to remove any alkaline residue and the washed surface allowed to dry before application of paint. After cleaning and inspection and within 24 hours after depositing, welds shall be spot painted with approved metal primer as specified below.

Welds shall be made only by welding operators who have been previously qualified in the last 90 days by tests as prescribed by the American Welding Society "Standard Qualification Procedure", to perform the work required.

7. PAINTING: All steel surfaces shall be painted in accordance with the schedule shown in SECTION A1 - PAINTING. Surface preparation shall be in accordance with Steel Structures Painting Council Guides for the exposure zone in the final structure.

All steel items that are not galvanized or to be embedded in concrete or noted to be unpainted in SECTION A1 - PAINTING shall be given one (1) shop coat of metal primer, compatible with the finish coating. Finish painting shall be as specified in SECTION A1 - PAINTING.

All aluminum surfaces that will be in contact with concrete, steel or other dissimilar material shall be coated with asphaltic paint or aluminum impregnated caulking compound or other approved permanent insulation.

8. STAIR NOSINGS: Provide cast aluminum abrasive nosings for all exterior concrete stairs. All nosing is to be three (3) inches wide and have a one (1) inch lip. Nosings shall be the length of the tread less 3" at each end.

Abrasive is to be #20 aluminum oxide (AL203), integrally cast into the walking surface to a minimum depth of 1/32". Fastener screws shall not protrude above the tread surface. Crosshatching and fluting shall be 1/16" deep minimum and shall be clean, sharp, well-defined and free from washes, scabs, buckles, blow holes, knots, cuts, cracks, and pin-holes. Abrasive cast aluminum to have sand blasted finish. Abrasive cast iron to have one (1) coat of shop black paint.

9. GALVANIZING: Galvanizing shall conform to the Standard Specifications of the ASTM A-123, latest edition, for zinc (Hot-Galvanized) Coatings on Structural Steel Shapes, Plates, and Bars, and their products. Damaged areas or field-welded areas shall be repaired after erection by applying a liquid cold galvanizing compound conforming to U.S. Navy Galvanizing Repair Specification MIL-P-21035.

10. HAND RAILS:

- A. Galvanized Steel Hand Rails: Railings shall be a welded assembly of standard 1-1/2" Schedule 40 diameter steel pipe, with welds ground smooth before hot dip galvanizing. Galvanizing shall be shop applied and field repaired in accordance with SECTION C5.11.

- B. Attachment to Structures: Unless otherwise shown on the plans, attach galvanized steel hand railing to concrete floors by inserts, or by expansion type drilled anchor bolts and base plates welded to the rail posts. Attach steel hand railings to walls with adjustable brackets.
11. ANCHOR BOLTS: Anchor bolts complete with washers and nuts shall be fabricated as shown or as specified by the equipment manufacturer and, unless otherwise indicated, shall be hot-dip galvanized or stainless steel. All anchor bolts fastening submerged equipment or piping to concrete shall be stainless steel.
  12. EXPANSION ANCHOR BOLTS: Where expansion anchor bolts are detailed or allowed by the Engineer, they shall be stainless steel wedge type anchors as manufactured by ITT Phillips Drill Co., McCulloch Industries or equal. All components of the fastener including nuts, washer and wedges shall be Type 304 stainless steel. Minimum embedment lengths and edge distances shall be as recommended by the manufacturer.
  13. MISCELLANEOUS FASTENERS: All miscellaneous fasteners, unless otherwise noted, shall be hot-dip galvanized or stainless steel and shall be fitted with standard galvanized washers. All elongated or otherwise oversized holes shall be covered with suitable galvanized washers.
  14. MISCELLANEOUS STEEL METAL WORK: All custom-fabricated steel metalwork other than structural steel shall be considered miscellaneous steel metalwork. Miscellaneous steel metalwork including embedded and nonembedded steel metalwork, brackets, hangers, and inserts shall be fabricated as shown of A36 steel. Anchors for miscellaneous steel metalwork shall be as indicated on the drawings.

TECHNICAL SPECIFICATIONS

SECTION C6 – REINFORCED CONCRETE PIPE

1. GENERAL

This section shall govern reinforced concrete pipe, materials for precast reinforced concrete pipe culverts, precast reinforced concrete pipe storm drain, and precast reinforced concrete box sections.

2. REINFORCED CONCRETE CULVERT, STORM DRAIN, AND PIPE

- A. General: Materials and work shall be in accordance with the Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, 2014 edition.

Unless otherwise shown on the plans, all culverts shall be a minimum of 18" diameter Class III tongue and groove joint RCP conforming to the referenced specification.

Joints shall be wrapped with filter fabric for a distance of 12" on each side of the joint. Joint shall be sealed with RamNek or approved joint sealer.

Reinforced concrete pipe shall conform to the current specifications for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, ASTM Designation C76 (C 76M) of the class as designed on the plans subject to the following modifications:

All pipe shall be machine-made by a process which shall provide for uniform placement of zero slump concrete in the form and compaction by mechanical devices which shall assure a dense concrete in the finished product.

Sizes larger than 60" diameter shall be manufactured, using two lines of circular reinforcement.

Where Class III pipe of sizes larger than 60" (1500 mm) diameter are specified, the manufacturer may at its option furnish pipe manufactured with either Wall "B" or Wall "C": minimum thicknesses and the applicable minimum steel area as listed for circular cages in Table II of Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, ASTM Designation C 76 (C 76M), provided test strength requirements for Class III pipe are satisfactorily met.

- B. Joints: Pipe to be placed along curves shall consist of whatever pipe joint lengths or beveled end joints of pipe, or combination thereof that are required to place the pipe on the designated centerline curve with no more than one-half of the tongue length of the pipe exposed from its fully closed joint position. The amount of bevel, "drop" or shortening of the pipe joint length by the bevel shall not exceed the amount shown below for the pipe sizes indicated.

Pipe Diameter	Maximum Amount of Bevel or Drop
From 12" to 27" inclusive	2"
From 30" to 51" inclusive	3"
From 54" to 84" inclusive	4"

Where pipe joints are not fully closed, special care shall be taken to fill completely, on both inside and outside, the entire annular space at the joint with cement mortar firmly caulked or pressed and compacted to form a dense, tight joint. Unless otherwise specified on the plans or in the special provisions, pipe joints shall be made with cold applied preformed plastic gaskets.

The gasket sealing the joint shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler and shall contain no solvents, irritating fumes nor obnoxious odors.

- C. Tests: The acceptability of the pipe in all diameters and classes shall be determined by the results of the three-edge bearing test for the load to produce a 0.01 inch crack; but such material tests as are required in Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, ASTM Designation C 76 (C 76M), by absorption tests on selected samples from the wall of the pipe; and by inspection of the finished pipe to determine its conformance with the design prescribed in these specifications and its freedom from defects.

Test specimens shall be selected on the basis of not more than 0.5 percent of the number of pipe of each size included in the order, except that in no case fewer than two specimens shall be furnished. Pipes that have been tested only to the formation of a 0.01 inch crack and that meet the 0.01 inch test load requirements shall be accepted for use. Tested pipe accepted for use shall be marked "TEST" or otherwise appropriately identified. Should any of the test specimens fail to meet the test requirements, two consecutive joints in the same mix series shall be tested and results shall be a basis of accepting or rejecting the pipe of the series.

All classes or strengths of reinforced concrete pipe shall be tested in accordance with the current specifications for concrete Pipe, Sections, or Tile, ASTM Designation C 497 (C497M).

- D. Rejection: Reinforced concrete pipe may be rejected for failure to meet any of the requirements of this specification.

### 3. PRECAST REINFORCED CONCRETE BOX SECTIONS

Precast reinforced concrete box sections shall conform to the current specifications for Precast reinforced concrete box Sections for culverts, Storm Drains, and Sewers, ASTM Designation C 1433, as specified on the Plans. Two-piece box culverts, if approved by the Owner, must meet or exceed the load requirements of ASTM C 1433.

### 4. STORM DRAIN CONDUIT INSTALLATION

- A. Description: This item shall govern and control the furnishing and placing of culvert pipe and/or conduits or storm drainage lines, including pipe fittings, connecting drain line to curb inlets, all joints, all connections to new or existing pipe or headwalls, manholes, catch basins, etc., to the lines and grades shown on the plans. All pipe and fittings shall be of the types, shapes, classes, sizes and dimensions as shown thereon; and as may be required to complete the work as shown on the plans.

### 5. REINFORCED CONCRETE CULVERT PIPE

- A. General: This item shall govern and control the furnishing and placing of reinforced concrete culvert pipe.

B. Materials:

1. General. Except as modified herein, materials, manufacture and design of pipe shall conform to ASTM Designation C 76 for circular Pipe or ASTM Designation C 506 for Arch Pipe. All pipe shall be machine made or cast by a process which shall provide for uniform placement of the concrete in the form and compaction by mechanical devices which shall assure a dense concrete. Concrete shall be mixed in a central batch plant or other approved batching facility from which the quality and uniformity of the concrete can

be assured. Transit mixed concrete shall not be acceptable for use in precast concrete pipe.

2. Design. The pipe shall be Class III unless otherwise indicated on the plans. The shell thickness, the amount of circumferential reinforcement, and the strength of the pipe shall conform to the requirements of ASTM Designation C 76 for Circular Pipe or C 506 for Arch Pipe, except as modified as follows:

- (a) All pipe shall be machine made by a process which shall provide for uniform placement of zero slump concrete in the form and compaction by a mechanical devices which shall assure a dense concrete in the finish.
- (b) Sizes larger than 60-inch diameter shall be manufactured using two lines of circular reinforcement.
- (c) When Class III pipe of sizes larger than 60-inch diameter is specified on plans, minimum "Wall B" shell thickness shall apply, and the minimum steel areas as listed for two circular cages under Table II may be submitted at the manufacturer's option, for those listed in Table III, provided test strength requirements for Class III pipe are satisfactorily met.

3. Physical Test Requirements. The acceptability of the pipe shall be determined by the results of the three-edge-bearing test for the load to produce the one-hundredth (0.01) inch crack and the ultimate load; by such material tests as are required in ASTM Designation C 76 or C 506; by absorption tests on selected samples from the wall of the pipe; and by inspection of the finished pipe to determine its conformance with the design prescribed in these specifications and its freedom from defects. Three-edge-bearing tests for the one-hundredth inch crack only shall be performed on eight-tenths percent of the pipe joints. Three-edge-bearing tests for both the one-hundredth inch crack and the ultimate load shall be performed on two-tenths percent of the pipe joints.

Pipe which has been tested only to the formation of a one-hundredth inch crack and meet the requirements for this test shall be accepted for use. Tested pipe accepted for use shall be marked "TEST" or otherwise appropriately identified so that such may be used at the end of the structure or other location not subject to impact loads. The methods of testing shall conform to ASTM Designation C 76 or C 506.

As an alternate to the three-edge-bearing test, concrete pipe 60 inches in diameter and over may be accepted, at the option of the manufacturer, on the basis of material tests and inspection of the completed product. Acceptability of pipe on this basis shall be determined by the results of material tests as required in ASTM Designation C 76 or C 506; by crushing tests on cores taken from the barrel of the completed and cured pipe; by absorption tests on samples from the wall of the pipe; and by inspection of the finished pipe, including amount and placement of reinforcement, to determine its conformance with the design prescribed in these specifications and its freedom from defects.

The manufacturer shall furnish facilities and personnel for taking the cores from the pipe barrel and for determining the compressive strength of the samples. When the cores cut from a section of pipe successfully meet the strength requirement, the core-holes shall be plugged and sealed by the manufacturer in a manner such that the pipe section shall meet all of the test requirement of ASTM Designation C 76 or C 506. Pipe sections, so sealed, shall be accepted for use.

4. Sizes and Permissible Variations.



- (a) Variations. Variations in diameter, size, shape, wall thickness, reinforcement, placement of reinforcement, laying length and the permissible underrun of length shall be in accordance with the applicable ASTM Specification for each type of pipe as referred to previously.
  - (b) Rubber Gasket Pipe Joints. Where rubber gasket pipe joints are to be used, the design of joints and permissible variations in dimensions shall be in accordance with ASTM Designation C 443, Section 5 and 6.
5. Workmanship and Finish. Pipe shall be substantially free from fractures, large or deep cracks and surface roughness. The ends of the pipe shall be normal to the walls and centerline of the pipe within the limits of variations allowed as stated previously.
6. Curing. Pipe shall be cured in accordance with the applicable ASTM Specification for each type of pipe as referred to above.
7. Pipe Marking. The following information shall be clearly marked on each section of pipe:
- (a) the class of pipe.
  - (b) the date of manufacture
  - (c) the name of trademark of the manufacturer.
  - (d) where elliptical reinforcement is used, one end of each section or joint of pipe shall be clearly marked during the process of manufacture or immediately thereafter on the inside and the outside of opposite walls to show the location of the "top" or "bottom" of the pipe as it should be installed. Markings shall be indented on the pipe section or painted thereon with waterproof paint.

"Top" and "bottom" shall not be required on pipe having such an external shape that the correct position of the top and bottom is obvious.

8. Rejection of Pipe. Pipe shall be subject to rejection on account of failure to conform to any of the specification requirements.

All rejected pipe shall be plainly marked by the engineer and shall be replaced by the Contractor with pipe which meet the requirements of these specifications. Such rejected pipe shall be removed immediately from the site of the work.

9. Joining Materials. Unless otherwise specified on the plans or in the special provisions, pipe joints shall be made with cold applied preformed plastic gaskets.

The gasket sealing the joint shall be produced from blends of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler and shall contain no solvents, irritating fumes nor obnoxious odors. The gasket joint sealer shall not depend on oxidizing, evaporating nor chemical action for its adhesive or cohesive strength; and shall be supplied in extruded rope-form of suitable cross section. The size of the plastic gasket joint sealer shall be in accordance with the manufacturer's recommendations and sufficient to obtain the squeeze out as described under Part III, "Construction Methods". The gasket joint sealer shall be protected by a suitable removable two-pieced wrapper. The two-piece wrapper shall be so designed that one-half may be removed longitudinally without disturbing the other half to facilitate application as noted below.

The chemical composition of the gasket joint sealing compound as shipped shall meet the following requirements when tested in accordance with the test methods shown.

<u>Composition</u>	<u>Test Method</u>	<u>Analysis</u>
Bitumen (petroleum plastic content), % by weight	ASTM Designation D4	50-70
Ash-Inert Mineral Matter, % by weight	AASHTO Designation T-111	30-50
Volatile Matter at 325° F, % by weight	ASTM Designation D6	2.0 Max.

The gasket joint sealing compound when immersed for 30 days at ambient room temperature separately in five percent solution of caustic potash, a mixture of five percent hydrochloric acid, a five percent solution of sulfuric acid, and a saturated H<sub>2</sub>S solution, shall show no visible deterioration.

The physical properties of the gasket joint sealing compound as shipped shall meet the requirements shown in the following table:

<u>Property</u>	<u>Test Method</u>	<u>Typical Analysis</u>
Specific Gravity at 77° F	ASTM D 71	1.20 - 1.35
Ductility @ 77° F (cm), min.	ASTM D 113	5.0
Softening Point °F	ASTM D 36	320° F, min.
Penetration		
32° F. (300g) 60 sec., min.	ASTM D 217	75
77° F. (150g) 5 sec.	ASTM D 217	50 -120
115° F (150g) 5 sec, max.	ASTM D 217	150
Flashpoint C.O.C., °F.	ASTM D 92	600
Fire Point C.O.C., °F.	ASTM D 92	625.

C. Construction Methods:

1. Excavation and Embedment. All excavation and pipe embedment shall conform to the requirements of Section G2.
2. Installation of Pipe. The Contractor shall furnish, at his own expense, and place in position as directed by the Engineer all necessary batter boards, string lines, plummets, graduated poles, etc. required in establishing and maintaining the lines and grades. The batter boards and all location stakes must be protected from possible damage or change of location.
  - (a) Trench Location. All pipe and fittings shall be laid and jointed in a dry trench.
  - (b) Pipe Laying. Unless otherwise authorized by the Engineer, the laying of the pipe on the prepared foundation shall be started at the outlet or downstream end with the spigot or tongue end of the pipe joint pointing downstream. Laying shall proceed toward the inlet or upstream end with each abutting section of pipe properly matched, true to the established lines and grades. Approved facilities shall be provided for hoisting and lowering the sections of pipe or the sides of the trench. The ends of the pipe shall be carefully cleaned before the pipe is placed in the trench. As each length of the pipe is laid, the open end shall be protected to prevent the entrance of earth or bedding material. The pipe shall be fitted and matched so that when laid in the prepared bedding, it shall form a smooth, uniform conduit. When elliptical pipe with circular reinforcing, or circular pipe with elliptical reinforcing, is used, the pipe shall be laid in the trench in such a position that the markings "top" or "bottom" shall not be more than five degrees from the vertical plane through the longitudinal axis of the pipe.
3. Jointing. Joints using cold applied preformed plastic gaskets shall be made as follows:

A suitable primer of the type recommended by the manufacturer of the gasket joint sealer shall be brush applied to the tongue-and-groove joint surfaces and the end surfaces and allowed to dry and harden. No primer shall be applied over mud, sand or dirt or sharp cement protrusions. The surface to be primed must be clean and dry when primer is applied.

Before laying the pipe in the trench, attach the plastic gasket sealer around the tapered tongue or tapered groove near the shoulder or hub of each pipe joint. Remove the paper wrapper from one side only of the two-piece wrapper on the gasket and press it firmly to the clean, dry pipe-joint surface. The outside wrapper is not to be removed until immediately before pushing the pipe into its final position.

Then the tongue is correctly aligned with the flare of the groove, remove the outside wrapper on the gasket and pull or push the pipe home with sufficient force and power (backhoe shovel, chain hoist, ratchet hoist or winch) to cause the evidence of squeeze-out of the gasket material on the inside or outside around the complete pipe joint circumference. Remove any joint material that pushed out into the interior of the pipe that would tend to obstruct the flow. (Pipe shall be pulled home in a straight line with all parts of the pipe on line and grade at all times.)

Pipe damaged by this operation shall be subject to review by the Owner and, if necessary, a change in the jointing procedure may be required. Backfilling of pipe laid with plastic gasket joints may proceed as soon as the joint has been inspected and approved by the engineer. Special precautions shall be taken in placing and compacting backfill to avoid damage to the joints.

When the atmospheric temperature is below 60 deg F., plastic joint seal gaskets shall either be stored in an area warmed to above 70 deg F., or artificially warmed to this temperature in a manner satisfactory to the engineer. Gaskets shall then be applied to pipe joints immediately prior to placing the pipe in the trench, followed by connection to previously laid pipe.

4. Backfill. All backfill of pipe trenches shall be in accordance with Section G2.
5. Fittings for Concrete Pipe.
  - (a) Poured Concrete Pipe Collars. At all changes in pipe sizes in the conduit line, except at manholes, a pipe collar, as shown in detail on the plans, shall be provided. The locations at which such collars are to be provided are shown on the plan-profile sheets, and their costs are to be included in the price offered for furnishing and installing reinforced concrete pipe. No extra payment shall be made for the installation of concrete pipe collars as shown on the plan-profile sheets.
  - (b) Shop and Field Fabricated Wyes, Tees, Crosses and Bends. Shop or field fabricated wyes, tees, crosses or bends shall be furnished and installed where indicated on the plans or required by the Engineer. Fittings for pipe, the largest size of which is less than 24 inches in diameter, shall be shop fabricated. Fittings for larger pipe, which is 24 inches in diameter and increasingly larger, may be field fabricated. Care shall be taken in the fabrication that the concrete walls of the pipe are broken back only enough to provide the required finished opening. The reinforcing mesh or bars in each pipe shall be joined by bending, twisting or spot welding, which shall provide a rigid connection. Concrete or mortar (as specified in this Section) shall be wiped over the reinforcing wires connecting the

two-pipe joints, compacted by light blows, shaped to the contour of the pipe barrels, lightly brushed for finish and cured under wet burlap.

- (c) Poured Concrete Pipe Plugs. When conduit lines terminate at locations which do not include connection to drainage structures, the end of the pipe shall be plugged with a field-cast unit as shown on the plan-profile sheets; and the costs thereof are to be included in the price offered to furnish and install reinforced concrete pipe. No extra payment shall be made for the installation of concrete pipe plugs as shown on the plan-profile sheets.

## 6. STORM SEWER APPURTENANCES

- A. Description: This section shall govern for the construction of all miscellaneous storm sewer structures such as junctions, transitions, special concrete manholes, creek crossings, river crossings, utility supports; and for the construction of appurtenances such as manholes, cleanouts, deep-cut connections, wyes, stoppers and bulkheads, fittings and such other miscellaneous structure or appurtenances which may be shown on the plans.
- B. Materials: All materials used in the construction of work specified in this section shall conform to the applicable sections of these specifications.

Unless otherwise specified, all concrete shall have an average compressive strength of 28 days equal to or greater than 3000 psi.

- C. Construction Requirements: The construction of reinforced concrete storm sewer structures including junctions, transitions, special concrete manholes, vaults and such other similar structures as may be covered by this specification shall be performed in accordance with the requirements of these specifications.

Excavation shall be made to the required depth and of sufficient width to construct the work to grade, form and dimensions. All soft and yielding materials shall be removed and replaced with acceptable materials. The subgrade shall be moistened to a minimum depth of two inches before placing of the concrete. All formed surfaces of the concrete exposed to public view shall be given a rubbed finish. All other formed surfaces shall be given the "ordinary horizontal finish". Corrosion protection shall be applied as may be called for on the plans or the proposal and shall be measured for payment and paid for at the contract price as set out in the invitation for offers.

## 7. STORM SEWER MANHOLES

Storm sewer manholes shall be fabricated in different configurations to meet with specific needs required in the storm sewer system.

- A. General Construction: Unless specified otherwise, standard manholes shall be constructed as monolithic concrete structures or as a precast reinforced concrete structure.

1. Standard Manhole. Standard Manholes shall meet the following requirements:

- (a) Standard manholes shall be water-containment structures. Therefore, when precast reinforced concrete manhole sections are used, the precast sections shall be of the bell-and-spigot design incorporating trapped O-ring gaskets, or tongue-and-groove with premolded plastic gasket joint. Prior to placing each section of manhole riser or cone, the bells and spigots to be joined shall be thoroughly cleaned, the O-ring gasket properly placed, lubricated and the joint pushed home.

- (b) In precast manhole construction, combinations of joint lengths shall be selected to minimize the number of individual segments required to provide the total depth specified. Long joints shall be used in the bottom with the shorter segments utilized for top adjustments.
- (c) Poured-in-place manholes may be used in lieu of precast manholes. The base, wall and cone shall be poured and vibrated to assure a monolithic structure free from infiltration.
- (d) Standard manhole shall be four feet inside diameter and shall be constructed to the proper elevation as required and to a depth of at least six feet above the invert of the sewer main(s) or lateral(s) in the system.

- 2. Shallow Manhole. Shallow manholes shall be constructed for specific locations in a storm sewer system for depth less than six feet when specifically designated on the project plans, or when so directed by the Owner. Pipe cradling, formed invert, etc., shall be constructed as described under "Standard Manhole" preceding.
- 3. Drop Manhole. Drop manholes shall be constructed in accordance with the detail provided in the project documents. The basic construction for drop manholes shall be identical to that described for standard manholes preceding with special provisions incorporated to provide drop piping and appurtenance as detailed.
- 4. Type "S" Manhole. Type "S" manholes shall be constructed in accordance with the plans and these specifications for materials and construction.

B. Specified Requirements: Specified requirements include the following:

- 1. The first full joint of pipe extending from the manhole shall be cradled in concrete to the pipe joint in the same pour as that for the manhole base slab as shown on the plans.
- 2. For all manhole installations in streets, the manhole covers shall be provided with pick slots in lieu of pick holes. If the rim elevation above the surrounding ground is prohibited by land use or other reasons, a cover with a pick slot as described for used in street locations shall be used.

C. Test Requirements: Each manhole or water-containment vault structure shall be required to contain water from rim elevation with a range exfiltration as specified below:

Allowable Leakage = 0.008 gal/sq.ft. opening/ft. depth/Hr.

DIVISION MP  
MEASUREMENT AND PAYMENT

## TECHNICAL SPECIFICATIONS

### SECTION MP - MEASUREMENT AND PAYMENT

1. **GENERAL:** This section of the specifications covers the components considered to be a portion of the lump sum pay item as listed in the Lump Sum Bid Schedule and is furnished to aid the Contractor in preparing his bid.

Of necessity, the items described as components of the various items are discussed in a general manner only, describing the major pieces of equipment and/or materials. Failure to list all items and/or appurtenances does not relieve the Contractor from furnishing all apparatus, devices, labor, or materials of whatever nature required for a complete and operational installation in accordance with the intent of the Drawings, approved Shop Drawings, and these Specifications.

- MP.2. BID ITEM DESCRIPTION:** Tabulated in the paragraphs below are descriptions of the various bid items listed in the proposal.

#### GENERAL:

1. **Mobilization:** The item shall include all expenses necessary for the movement of personnel, equipment, material and supplies, temporary facilities, and other incidentals necessary to start construction activity. Measurement for this item shall be on a lump sum basis.  
  
Mobilization shall use the following schedule for payment of the lump sum price:
  - a. 1<sup>st</sup> Pay Request – 25% payment of "Mobilization" lump sum pay item;
  - b. When 25% of the original contract is earned, an additional 25% of "Mobilization" pay item;
  - c. When 50% of the original contract is earned, an additional 40% of "Mobilization" pay item;
  - d. After final inspection, staging area clean ups, and delivery of project closeout documents, an additional 10% of "Mobilization" pay item;
2. **Bonds & Insurance:** Item shall consist of furnishing all required bonds and insurance as specified in the Contract Documents. Measurement and payment for this item shall be on a lump sum basis.
3. **Temporary Barricades:** Item shall consist of furnishing all tools, equipment, materials, and labor necessary to install and maintain temporary barricades in accordance with the latest revision of the Texas Manual of Uniform Traffic Control Devices. Measurement for this item shall be on a lump sum basis.

Temporary Barricades shall use the following schedule for payment of the lump sum price:

- a. 1<sup>st</sup> Pay Request – 25% payment of "Furnish and install barricades" pay item;
- b. When 25% of the original contract is earned, an additional 25% of "Furnish and install barricades" pay item;
- c. When 50% of the original contract is earned, an additional 40% of "Furnish and install barricades" pay item;
- d. After final inspection, staging area clean ups, and delivery of project closeout documents, an additional 10% of "Furnish and install barricades" pay item;

4. Storm Water Pollution Prevention and Erosion Control per TCEQ requirements: Item shall consist of all fees, tools, equipment, materials, and labor necessary to furnish, install, maintain, and remove all filter fabric fencing, hay bale dikes, and erosion control matting necessary to perform SWPP, to establish final stabilizing vegetation for erosion control, the development of a Storm Water Pollution Prevention Plan (SWP3), submitting and posting required notices, paying all required fees, and performing maintenance and inspection per TCEQ requirements. Measurement for this item shall be on a lump sum basis.

Payment shall be made at the contract price per lump sum for "Storm water pollution prevention plan", per lump sum for "Furnish, maintain, and remove hay bale dike", and per lineal foot for "Furnish, maintain and remove filter fabric fence". The items shall include all expenses necessary for performing the work as described.

Payment will be made under:

Item: Storm water pollution prevention plan (SW3P) – per lump sum

The following is the schedule for payment:

- a. 1<sup>st</sup> Pay Request – 25% payment of "SW3P" pay item;
- b. When 25% of the original contract is earned, an additional 25% of "SW3P" pay item;
- c. When 50% of the original contract is earned, an additional 40% of "SW3P" pay item;
- d. After final inspection, staging area clean ups, and delivery of project closeout documents, an additional 10% of "SW3P" pay item;

Item: Furnish, maintain, and remove hay bale dike – per lump sum

The following is the schedule for payment:

- a. 1<sup>st</sup> Pay Request – 25% payment of "Furnish, maintain, and remove hay bale dike" pay item;
- b. When 25% of the original contract is earned, an additional 25% of "Furnish, maintain, and remove hay bale dike" pay item;
- c. When 50% of the original contract is earned, an additional 40% of "Furnish, maintain, and remove hay bale dike" pay item;
- d. After final inspection, staging area clean ups, and delivery of project closeout documents, an additional 10% of "Furnish, maintain, and remove hay bale dike" pay item;

Item: Furnish and install erosion control matting – per square yard.

4. Hydromulch, seed, lime, and fertilizer: Item shall consist of furnishing all tools, equipment, materials, and labor necessary to provide hydromulch seed and fertilizer on all disturbed areas. Disturbed areas shall consist of all disturbed areas on the site, including, but not limited to, public rights-of-way, water, sewer, storm drainage, other utility backfills, and related areas. Measurement and Payment shall be on a square yard basis as shown in the Proposal.
5. Trench Safety: Item shall consist of furnishing all tools, equipment, materials, and labor necessary to perform trench safety. Measurement and payment for this item shall be on a lump sum basis.

#### CONCRETE APRON:

1. Remove and Replace Unsuitable Subgrade with Foundation Material: Item shall consist of furnishing all tools, equipment, materials, and labor necessary to perform all excavation and the placement and compaction of embankment shown on the plans, cross sections and typical sections. The price shall be full compensation for all excavations and fills and for all work required to dispose of material not used elsewhere on the project. Measurement and payment shall be on a cubic yard basis as shown in the Proposal.



2. Construct Concrete (Class "P") Portland Cement Concrete Pavement: Payment shall be for furnishing, loading, hauling, and handling of all concrete materials; for placing and adjusting forms; for furnishing and installing reinforcing steel; for furnishing and installing all materials for sealing joints; and for all labor, tools, equipment and incidentals necessary to complete the work. Payment shall be by the square yard.

STORM WATER DRAINAGE:

1. Furnish and Install 36" RCP, Complete, In Place: Item shall consist of furnishing all tools, equipment, materials, and labor necessary to provide a complete, operational reinforced concrete pipe culvert including, but not limited to, excavation, subgrade compaction, dewatering, trench safety systems, shoring, sheeting, formwork, joint sealant, select material backfill, compaction, dressing, grading, and related work. Measurement and payment shall be per lineal foot as shown in the Proposal.
2. Furnish and Install Class B 4" thick Concrete Seal Slab: Item shall consist of furnishing all tools, equipment, materials, and labor necessary to construct a concrete seal slab including, but not limited to, excavation, subgrade compaction, dewatering, trench safety systems, shoring, sheeting, formwork, joint sealant, select material backfill, compaction, dressing, grading, and related work. Measurement and payment shall be per square yard as shown in the Proposal.
3. Tie in to Existing 36" RCP with Concrete Anchor Collar: Item shall consist of furnishing all tools, equipment, materials, and labor necessary to excavate, locate, clean, and connect to an existing storm drain pipe with concrete anchor collar per detail in the Plans. Item shall include but not be limited to excavation, concrete, formwork, steel reinforcement, ties, joint sealant, backfill, compaction, and related work. Measurement and payment for this item shall be lump sum as shown in the Proposal.
4. Furnish and Install Flowable Fill: Item shall include all excavation, compaction, flowable fill material, and curing. Measurement and payment for this item shall be on a cubic yard basis as shown in the Proposal.