

VILLAGE OF SALADO, TEXAS



SPECIFICATIONS AND CONTRACT DOCUMENTS
FOR THE CONSTRUCTION OF

South Ridge Sawtooth Curb Repair

Prepared By



KASBERG, PATRICK & ASSOCIATES, LP
CONSULTING ENGINEERS
TEMPLE, TEXAS




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SOUTH RIDGE SAWTOOTH CURB REPAIR

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NOTICE TO BIDDERS

Sealed bids addressed to Don Ferguson, Village Administrator, will be received at the Village of Salado, Salado Municipal Building; 301 N. Stagecoach Road; Salado, Texas 76571 until **10:00 A.M. on Friday, January 28, 2022** for the construction of the Salado Plaza Paving Project in the Village of Salado, Texas. The bids shall be labeled:

South Ridge Curb Repair Project
Salado, Texas

The Work includes, but is not necessarily limited to, the following:

Construction of: Remove damaged sawtooth curb, expose and tie to existing concrete rebar, and construct new concrete sawtooth curb on S. Ridge Drive low water crossing, traffic control, etc.

Bids must be submitted on the Bid Form provided and must be accompanied by a cashier's check, certified check or acceptable bidder's bond payable without recourse to the Village of Salado, Texas in an amount not less than five (5) percent of the bid submitted as a guarantee that the bidder will enter into a contract and execute a Performance Bond and a Payment Bond within ten (10) days after the notification of the award of the contract.

The bids will be publicly opened and read aloud in the meeting room in Salado Municipal Building at **10:00 A.M. on Friday, January 28, 2022**. The Board of Aldermen will officially review the bids at their next regularly scheduled meeting and award the contract as soon thereafter as practical.

The Village of Salado reserves the right to accept or reject any and all bids, as the best interest of the Village may require, and to waive any informality in bids received. The Village of Salado also reserves the right to award the Contract as may be advantageous to the City.

Plans, specifications and bidding documents may be secured beginning **Monday, January 3, 2022** at Kasberg, Patrick & Associates, LP; 19 North Main, Temple, Texas; (254) 773-3731 for a non-refundable cost of **\$75.00** per set. Plans may be obtained at no charge in PDF format by request. Contact Carmen Collins at ccollins@kpaengineers.com. Checks shall be made payable to Kasberg, Patrick & Associates, LP. PDF copies may be requested at no charge.

A non-mandatory pre-bid conference will be held in the meeting room at the Salado Municipal Building; 301 N. Stagecoach Road; Salado, Texas at 10:00 A.M. on Tuesday, January 11, 2022.

Salado Village Voice &
Village of Salado Website:
December 30, 2021
January 6, 2022

VILLAGE OF SALADO, TEXAS

SPECIAL PROJECT INFORMATION
TO BIDDERS/CONTRACTORS

- A. All questions and inquiries about the project should be directed to **John A. Simcik, P.E., C.F.M., until 12:00 p.m. on Friday, January 21, 2022.** Questions after that time and date will not be addressed and the Engineer and/or Owner shall not be bound by any references or dates obtained by the Bidders unless an official addendum is produced and released by Kasberg, Patrick & Associates, LP.
- B. Daily, on-site construction representation and observation will be provided by the Village of Salado.
- C. Contract Administration and Pay Estimate Approvals will be provided by Kasberg, Patrick & Associates, LP.
- D. The Village of Salado reserves the right to add or delete bid quantities as needed to conform to budget requirements.
- E. A Notice to Residents shall be distributed to all affected residents at least 48 hours prior to beginning work. A sample form is attached to the back of the bid documents.
- F. Bid Items 1 for Mobilization, Bonds and Insurance shall not exceed 5% of the total amount Bid for their respective Parts.
- G. No Geotechnical Investigations were performed for this project.
- H. The Contractor shall contact Texas One-Call to have all utilities located prior to commencing work.
- I. The Contractor shall report any anticipated quantity overruns on the project to the Project Engineer and obtain City approval prior to overrunning a quantity. Failure to obtain City approval prior to overrunning a quantity may result in non-payment for the overrun.

INSTRUCTION TO BIDDERS FOR CONSTRUCTION

1. Use of Separate Bid Forms

These contract documents include a complete set of bid and contract forms which are for the convenience of the bidders and are not to be detached from the contract document, completed or executed. Separate bid forms are provided for your use.

2. Interpretations or Addenda

Each request for an interpretation shall be made engineer. Each interpretation made will be in the form of an Addendum to the contract documents and will be distributed to all parties holding contract documents no less than one (1) day prior to the bid opening. It is, however, the bidder's responsibility to make inquiry as to any addenda issued. All such addenda shall become part of the contract documents and all bidders shall be bound by such addenda, whether or not received by the bidder.

3. Inspection of Site

Each bidder should visit the site of the proposed work and fully acquaint himself with the existing conditions there and should fully inform himself as to the facilities involved, the difficulties and restrictions attending the performance of the contract. The bidder should thoroughly examine and familiarize himself with the drawings, technical specifications and all other contract documents. The contractor, by the execution of the contract, shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal document or to visit the site or acquaint himself with the conditions there existing. The Village will be justified in rejecting any claim based on lack of inspection of the site prior to the bid.

4. Bids

- a) All bids must be submitted on the forms provided and are subject to all requirements of the Contract Documents, including the Drawings.
- b) All bids must be regular in every respect and no interlineation, excisions or special conditions may be made or included by the bidder.
- c) The Village may consider as irregular any bid on which there is an alteration of or departure from the bid form and, at its option, may reject any irregular bid.
- d) If contract is awarded, it will be awarded to a responsible bidder on the basis of the lowest/most qualified bid and the selected alternate bid items, if any. The contract will require the completion of the work in accordance with the contract documents.

5. Bid Bond

- a) A bid bond in the amount of 5% of the bid issued by the acceptable surety shall be submitted with each bid. A certified check or bank draft payable to the Village may be submitted in lieu of the Bid Bond.
- b) The bid bond or its comparable, will be returned to the bidder as soon as practical after the opening of the bids.

6. Unit Price

The unit price for each of the several items in the bid shall include its pro rata share of overhead so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price bid represents the total bid. Any bid not conforming to this requirement may be rejected as informal. Special attention is drawn to this condition, as the unit prices will be used to determine the amount of any change orders resulting from an increase or decrease in quantities.

7. Corrections

Erasures or other corrections in the bid must be noted over the signature of the bidder.

8. Time for Receiving Bids

Bids received prior to the advertised hour of opening will be kept securely sealed. The officer appointed to open the bids shall decide when he specified time has arrived and no bid received thereafter will be considered; except that when a bid arrives by mail after the time fixed for opening, but before the reading of all other bids is completed, and it is shown to satisfaction of the Village that the late arrival of the bid was solely due to delay in the mail for which the bidder was not responsible, such bid will be received and considered.

9. Opening of Bids

The Village shall, at the time and place fixed for the opening of bids, open each bid and publicly read it aloud, irrespective of any irregularities therein. Bidders and other interested individuals may be present.

10. Withdrawal of Bids

Bidder may withdraw the bid before the time fixed for the opening of bids, by communicating his purpose in writing to the Village. Upon receipt of such notice, the unopened bid will be returned to the bidder. The bid guaranty of any bidder withdrawing his bid will be returned promptly.

11. Award of Contract/Rejection of Bids

- a) The contract will be awarded to the responsive, responsible Bidder submitting the lowest/best bid. The bidder selected will be notified at the earliest possible date. The Village reserves the right to reject any or all bids and to waive any informality in bids received where such rejection or waiver is in its interest.

12. Execution of Agreement/Performance and Payment Bonds

- a) The failure of the successful bidder to execute the agreement and supply the required bonds within ten (10) days after the prescribed forms are presented for signature, or within such extended period as the Village may grant, shall constitute a default and the Village may, at its option either award the contract to the next lowest responsible bidder, or re-advertise for bids. In either case, the Village may charge against the bidder the difference between the amount of the bid, and the amount for which a contract is subsequently executed irrespective of whether this difference exceeds the amount of the bid bond. If a more favorable bid is received through re-advertisement, the defaulting bidder shall have no claim against the Village for a refund.

**BID SCHEDULE
FOR
SOUTH RIDGE SAWTOOTH CURB REPAIR**

Base Bid

Item No.	Estimated Quantity	Unit	Description	Unit Price	Total Amount (in numerals)
1	100%	LS	Mobilization, Bonds and Insurance, not-to-exceed 5% of the Base Bid Amount, Complete For	\$ _____	\$ _____
				_____ Dollars and _____ Cents per Lump Sum.	
2	100%	LS	For Implementing Traffic Control Plan, Complete For		
				_____ Dollars and _____ Cents per Lump Sum.	
3	45	EA	Replacing Concrete Sawtooth Curb Teeth, Per Detail, Complete in Place For	\$ _____	\$ _____
				_____ Dollars and _____ Cents per Each.	

TOTAL BASE BID AMOUNT (ITEMS 1 - 3)

BID AMOUNT \$ _____
(numerals)

(words)

BID SUMMARY

BASE BID - (ITEMS 1 - 3)

Total Amount in Figures

Receipt is hereby acknowledged of the following addenda to the Contract Documents.

Addendum No. 1 dated _____ Received _____
Addendum No. 2 dated _____ Received _____
Addendum No. 3 dated _____ Received _____

The Village reserves the right to award any individual PART or any combination of PARTS.

The above prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for.

The work proposed to be done shall be accepted when fully completed and finished in accordance with the plans, specifications and Project Schedule shown herein to the satisfaction of the Engineer.

The undersigned bidder hereby declares that he has visited the site of the work and has carefully examined the Contract Documents pertaining to the work covered in the above bid, and that the bid prices contained in the proposal have been carefully checked and are submitted as correct and final.

Respectfully submitted:

Name:

By:

Address

Printed Name: _____

City, State & Zip

Seal & Authorization (if a Corporation)

Attest:

Phone

Fax

Email Address

Secretary

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,
_____ as Principal,
and _____ as
Surety, are hereby held and firmly bound unto _____ as OWNER in the penal
sum of _____ for payment
of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and
assigns.

SIGNED, this _____ day of _____, 2022. The Condition of the above obligation is
such that whereas the Principal has submitted to _____
a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for
the

South Ridge Curb Repair Project

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the
Form of Contract attached hereto (properly completed in accordance with said BID) and shall
furnish a BOND for his faithful performance of said contract, and for the payment of all
persons performing labor or furnishing materials in connection therewith, and shall in all
other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being
expressly understood and agreed that the liability of the Surety for any and all claims hereunder
shall, in no event, exceed the penal amount of this obligation as herein stated.

THE SURETY, for value received, hereby stipulates and agrees that the obligations of said Surety
and its BOND shall be in no way impaired or affected by any extension of the time within which the
OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

Surety

By: _____

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

END OF SECTION

STANDARD FORM OF AGREEMENT

STATE OF TEXAS

COUNTY OF Bell }

THIS AGREEMENT, made and entered into this _____ day of _____, 2022, by and between Village of Salado of the County of Bell and State of Texas, acting through Mayor - Michael Coggin 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:

South Ridge Sawtooth Curb Repair

and all extra work in connection therewith, under the terms as stated in the General Conditions of the Agreement and at his (or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said construction, in accordance with the conditions and prices stated in the Proposal attached hereto, and in accordance with the Notice to Contractors, General and Special Conditions of Agreement, Plans and other drawings and printing or written explanatory matter thereof, and the Specifications and addenda therefor, as prepared by Kasberg, Patrick & Associates, LP; 19 North Main; Temple, Texas, 76501; (254) 773-3731, herein entitled the ENGINEER, each of which has been identified by the CONTRACTOR and the ENGINEER, together with the CONTRACTOR'S written Proposal, the General Conditions of the Agreement, and the Performance and Payment Bonds hereto attached; all of which are made a part hereof and collectively evidence and constitute the entire contract.

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

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

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

Village of Salado
Party of the First Part (OWNER)

Party of the Second Part (CONTRACTOR)

By: _____
Title: Mayor

By: _____
Title: _____

ATTEST:

ATTEST:

APPROVED AS TO FORM:

09180
PERFORMANCE BOND
[Public Works]

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS, That _____, a Texas corporation, whose address is _____, Texas, _____; as Principal, and _____, whose address is _____, a corporation organized and existing under the laws of the State of Texas, as Surety, are held firmly bound unto the Village of Salado as Obligee, in the amount of _____ Dollars (\$ _____) for the payment of which sum we will bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 2022, for the construction of the

South Ridge Sawtooth Curb Repair

specifically including in the scope of this work the bond, the additional guaranty provisions set forth in the contract conditions, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein, as well as Principal's primary obligation to perform according to the plans and specifications.

NOW, THEREFORE, the condition of this obligation is such, that if the said Principal shall faithfully perform the work in accordance with the plans, specifications, instructions to bidders, general and special conditions and other contract documents and shall fully indemnify and save harmless Obligee from all costs and damage which Obligee may suffer by reason of Principal's default, and reimburse and repay Obligee all outlay and expense which Obligee may incur in making good such default, then this obligation shall be void; otherwise to remain in full force and effect.

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

PROVIDED further that if any legal action be filed on this bond, venue shall be in Bell County, Texas.

Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder, or the plans, specifications, or drawings accompanying the same, or any assignment of the contract as may be provided for in the instructions to bidders, 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, assignment thereof, or to the work to be performed thereunder. The Surety is responsible for additional amounts authorized by any change orders.

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

Signed and sealed this ____ day of _____, 2022.

Principal: _____

By: _____
_____(Title)

Surety: _____

By: _____

TDI Company Number: _____

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

Note: Attach Power of Attorney and Required Notices Rider

PAYMENT BOND
[Public Works]

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS, That _____, a Texas corporation, whose address is _____, Texas, _____ as Principal, and _____, whose address is _____, a corporation organized and existing under the laws of the State of Texas, as Surety, are held firmly bound unto the _____ Village of Salado as Obligee, in the amount of _____ (\$_____) for the payment of which sum we will bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 2022, for the construction of the

South Ridge Sawtooth Curb Repair

specifically including in the scope of this work the bond, the additional guaranty provisions set forth in the contract conditions, which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

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

PROVIDED further that if any legal action be filed on this bond, venue shall be in Bell County, Texas.

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

Surety, for value received, stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder, or the plans, specifications, or drawings accompanying the same, or any assignment of the contract as may be provided for in the instructions to bidders, 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, assignment thereof, or to the work to be performed thereunder. The Surety is responsible for additional amounts authorized by any change orders.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument on the _____ day of _____, 2022.

Principal: _____

By: _____
_____, (Title)

Surety: _____

By: _____

TDI Company Number: _____

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

Note: Attach Power of Attorney and Required Notices Rider

CERTIFICATE OF INSURANCE

THIS CERTIFICATE IS ISSUED FOR THE DURATION OF THE PROJECT AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED BELOW.

NAME AND ADDRESS OF AGENCY NAME AND ADDRESS OF INSURED	COMPANIES AFFORDING COVERAGES COMPANY A <u>LETTER</u> COMPANY B <u>LETTER</u> COMPANY C <u>LETTER</u> COMPANY D <u>LETTER</u> COMPANY E <u>LETTER</u>
---	---

This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

<div style="border: 1px solid black; width: 80px; height: 20px; margin: 0 auto;"></div> COMPANY		POLICY NUMBER	POLICY EXPIRATION DATE		
					AGGREGATE
	___ Comprehensive Form			\$	\$
	___ Collapse Hazard			\$	\$
	___			\$	\$

						\$
						\$
						\$
						\$

OTHER

Builders Risk

Description of Operations/ _____
 Locations/Vehicles _____

PROJECT TITLE: South Ridge Sawtooth Curb Repair

PROJECT LOCATION: Village of Salado

The Village of Salado is named as an additional insured under all insurance, other than Workman's Compensation.

Cancellation: No policies will be cancelled or reduced, restricted, or limited until ten (10) days after the owner has received written notice as evidence by return receipt or registered or certified letter.

NAME AND ADDRESS OF CERTIFICATE HOLDER:

DATE ISSUED: _____, 2022 AUTHORIZED REPRESENTATIVE

END OF SECTION

Notice of Award

Date: _____

Project: South Ridge Saw Tooth Curb Repair

Owner: Village of Salado

Contract: South Ridge Saw Tooth Curb Repair

Engineer's Project No.:

Bidder:

Bidder's Address:

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for:

South Ridge Saw Tooth Curb Repair

The Amount of your Contract is _____ (\$_____).

____ 5 ____ copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

____ 5 ____ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [15] days of the date you receive this Notice of Award.

1. Deliver to the Owner [5] fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract security [Bonds] as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Paragraph SC-5.01).
3. Other conditions precedent:

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

By: _____

John A. Simcik, P.E., C.F.M.

Title: Project Engineer

NOTICE TO PROCEED

To: _____

In accordance with the Agreement dated _____, by _____ and _____ between the Village of Salado (Owner) and _____ (Contractor) for work to be performed in conjunction with the South Ridge Sawtooth Curb Repair. Construction shall be completed within **30 days** of the issuance of this Notice to Proceed.

1. Contractor is hereby notified to commence work on _____, 2022 and to complete the work on or before _____, 2022.

2. Liquidated damages to be paid by the Contractor for failure to complete the work by the completion date will be assessed at the rate of \$ **250.00** per day for each calendar day after _____, 2022. The procedure and basis for the assessment of damages will be in accordance with the Special Conditions, Section 21.

ISSUED ON BEHALF OF

ACCEPTED ON BEHALF OF

Village of Salado, Texas

(Contractor Signature)

Date

Date

GENERAL CONDITIONS

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GENERAL CONDITIONS OF AGREEMENT

1. DEFINITIONS OF TERMS

1.01 ... OWNER, CONTRACTOR AND ENGINEER. The OWNER, the CONTRACTOR and the ENGINEER are those persons or organizations identified as such in the Agreement and are referred to throughout the Contract Documents as if singular in number and masculine in gender. The term ENGINEER means the ENGINEER or his duly authorized representative. The ENGINEER shall be understood to be the ENGINEER of the OWNER, and nothing contained in the Contract Documents shall create any contractual or agency relationship between the ENGINEER and the CONTRACTOR.

1.02 ... CONTRACT DOCUMENTS. The Contract Documents shall consist of the Notice to Contractors (Advertisement), Special Conditions (Instructions to Bidders), Proposal, signed Agreement, Performance and Payment Bonds (when required), Special Bonds (when required), General Conditions of the Agreement, Technical Specifications, Plans, and all modifications thereof incorporated in any of the documents before the execution of the agreement.

The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. In case of conflict between any of the Contract Documents, priority of interpretation shall be in the following order: Signed Agreement, Performance and Payment Bonds, Special Bonds (if any), Proposal, Special Conditions of Agreement, Notice to Contractors, Technical Specifications, Plans, and General Conditions of Agreement.

1.03 ... SUB-CONTRACTOR. The term Sub-Contractor, as employed herein, includes only those having a direct contract with the CONTRACTOR and it includes one who furnishes material worked to a special design according to the plans or specifications of this work, but does not include one who merely furnishes material not so worked.

1.04 ... WRITTEN NOTICE. Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

1.05 ... WORK. The CONTRACTOR shall provide and pay for all materials, supplies, machinery, equipment, tools, superintendence, labor, services, insurance, and all water, light, power, fuel, transportation and other facilities necessary for the execution and completion of the work covered by the Contract Documents. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of a good quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials. Materials or work described in words, which so applied, have a well-known technical or trade meaning shall be held to refer to such recognized standards.

1.06 ... EXTRA WORK. The term "Extra Work" as used in this contract shall be understood to mean and include all work that may be required by the ENGINEER or OWNER to

be done by the CONTRACTOR to accomplish any change, alteration or addition to the work shown upon the plans, or reasonably implied by the specifications, and not covered by the CONTRACTOR'S Proposal, except as provided under "Changes and Alterations", herein.

1.07 ... WORKING DAY. A "Working Day" is defined as any day not including Saturdays, Sundays or any legal holidays, in which weather or other conditions, not under the control of the CONTRACTOR, will permit construction of the principal units of the work for a period of not less than seven (7) hours between 7:00 a.m. and 6:00 p.m.

1.08 ... CALENDAR DAY. "Calendar Day" is any day of the week or month, no days being excepted.

1.09 ... SUBSTANTIALLY COMPLETED. By the term "substantially completed" is meant that the structure has been made suitable for use or occupancy or the facility is in condition to serve its intended purpose, but still may require minor miscellaneous work and adjustment.

2. RESPONSIBILITIES OF THE ENGINEER AND THE CONTRACTOR

2.01 ... OWNER - ENGINEER RELATIONSHIP. The ENGINEER will be the OWNER'S representative during construction. The duties, responsibilities and limitations of authority of the ENGINEER as the OWNER'S representative during construction are as set forth in the Contract Documents and shall not be extended or limited without written consent of the OWNER and ENGINEER. The ENGINEER will advise and consult with the OWNER, and all of OWNER'S instructions to the CONTRACTOR shall be issued through the ENGINEER.

2.02 ... PROFESSIONAL INSPECTION BY ENGINEER. The ENGINEER shall make periodic visits to the site to familiarize himself generally with the progress of the executed work and to determine if such work generally meets the essential performance and design features and the technical and functional engineering requirements of the Contract Documents; provided and except, however, that the ENGINEER shall not be responsible for making any detailed, exhaustive, comprehensive or continuous on-site inspection of the quality or quantity of the work or be in any way responsible, directly or indirectly, for the construction means, methods, techniques, sequences, quality, procedures, programs, safety precautions or lack of same incident thereto or in connection therewith. Notwithstanding any other provision of this agreement or any other Contract Document, the ENGINEER shall not be in any way responsible or liable for any acts, errors, omissions or negligence of the CONTRACTOR, any subcontractor or any of the CONTRACTOR'S or subcontractor's agents, servants or employees or any other person, firm or corporation performing or attempting to perform any of the work.

2.03 ... PAYMENTS FOR WORK. The ENGINEER shall review CONTRACTOR'S applications for payment and supporting data, determine the amount owed to the CONTRACTOR and approve, in writing, payment to CONTRACTOR in such amounts; such approval of payment to CONTRACTOR constitutes a representation to the OWNER of ENGINEER'S professional judgment that the work has progressed to the point indicated to the best of his knowledge, information and belief, but such approval of an application for payment to CONTRACTOR shall not be deemed as a representation by ENGINEER that ENGINEER has

made any examination to determine how or for what purpose CONTRACTOR has used the moneys paid on account of the Contract price.

2.04 ... INITIAL DETERMINATIONS. The ENGINEER initially shall determine all claims, disputes and other matters in question between the CONTRACTOR and the OWNER relating to the execution or progress of the work or the interpretation of the Contract Documents and the ENGINEER'S decision shall be rendered in writing within a reasonable time. Should the ENGINEER fail to make such decision within a reasonable time, appeal to arbitration may be taken as if his decision had been rendered against the party appealing.

2.05 ... OBJECTIONS. In the event the ENGINEER renders any decision which, in the opinion of either party hereto, is not in accordance with the meaning and intent of this contract, either party may file with the ENGINEER within thirty days his written objection to the decision, and by such action may reserve the right to submit the question so raised to arbitration as hereinafter provided.

2.06 ... LINES AND GRADES. Unless otherwise specified, all lines and grades shall be furnished by the ENGINEER or his representative. Whenever necessary, construction work shall be suspended to permit performance of this work, but such suspension will be as brief as practicable and the CONTRACTOR shall be allowed no extra compensation therefor. The CONTRACTOR shall give the ENGINEER ample notice of the time and place where lines and grades will be needed. All stakes, marks, etc., shall be carefully preserved by the CONTRACTOR, and in case of careless destruction or removal by him or his employees, such stakes, marks, etc., shall be replaced at the CONTRACTOR'S expense.

2.07 ... CONTRACTOR'S DUTY AND SUPERINTENDENCE. The CONTRACTOR shall give adequate attention to the faithful prosecution and completion of this contract and shall keep on the work, during its progress, a competent superintendent and any necessary assistants. The superintendent shall represent the CONTRACTOR in his absence and all directions given to him shall be as binding as if given to the CONTRACTOR.

The CONTRACTOR is and at all times shall remain an independent contractor, solely responsible for the manner and method of completing his work under this contract, with full power and authority to select the means, method and manner of performing such work, so long as such methods do not adversely affect the completed improvements, the OWNER and ENGINEER being interested only in the result obtained and conformity of such completed improvements to the plans, specifications and contract.

Likewise, the CONTRACTOR shall be solely responsible for the safety of himself, his employees and other persons, as well as for the protection of the safety of the improvements being erected and the property of himself or any other person, as a result of his operations hereunder. Engineering construction drawings and specifications as well as any additional information concerning the work to be performed passing from or through the ENGINEER shall not be interpreted as requiring or allowing CONTRACTOR to deviate from the plans and specifications, the intent of such drawings, specifications and any other such instructions being to define with particularity the agreement of the parties as to the work the CONTRACTOR is to perform. CONTRACTOR shall be fully and completely liable, at his own expense, for design, construction, installation and use, or non-use of all items and methods incident to performance of

the contract, and for all loss, damage or injury incident thereto, either to person or property, including, without limitation, the adequacy of all temporary supports, shoring, bracing, scaffolding, machinery or equipment, safety precautions or devices, and similar items or devices used by him during construction.

Any review of work in process, or any visit or observation during construction, or any clarification of plans and specifications, by the ENGINEER, or any agent, employee, or representative of either of them, whether through personal observation on the project site or by means of approval of shop drawings for temporary construction on construction processes, or by other means or method, is agreed by the CONTRACTOR to be for the purpose of observing the extent and nature of work completed or being performed, as measured against the drawings and specifications constituting the contract, or for the purpose of enabling CONTRACTOR to more fully understand the plans and specifications so that the completed construction work will conform thereto, and shall in no way relieve the CONTRACTOR from full and complete responsibility for the proper performance of his work on the project, including but without limitation the propriety of means and methods of the CONTRACTOR in performing said contract, and the adequacy of any designs, plans or other facilities for accomplishing such performance. Deviation by the CONTRACTOR from plans and specifications that may have been in evidence during any such visitation or observation by the ENGINEER, or any of his representatives, whether called to the CONTRACTOR'S attention or not shall in no way relieve CONTRACTOR from his responsibility to complete all work in accordance with said plans and specifications.

2.08 ... CONTRACTOR'S UNDERSTANDING. It is understood and agreed that the CONTRACTOR has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this contract. No verbal agreement or conversation with any officer, agent or employee of the OWNER or ENGINEER either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

2.09 ... CHARACTER OF WORKMEN. The CONTRACTOR agrees to employ only orderly and competent men, skillful in the performance of the type of work required under this contract, to do the work; and agrees that whenever the ENGINEER shall inform him in writing that any man or men on the work are, in his opinion, incompetent, unfaithful or disorderly, such man or men shall be discharged from the work and shall not again be employed on the work without the ENGINEER'S written consent.

2.10 ... CONTRACTOR'S BUILDINGS. The building of structures for housing men, or the erection of tents or other forms of protection, will be permitted only at such places as the ENGINEER shall direct, and the sanitary conditions of the grounds in or about such structures shall at all times be maintained in a manner satisfactory to the ENGINEER.

2.11 ... SANITATION. Necessary sanitary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained by the CONTRACTOR in such a manner and at such points as shall be approved by the ENGINEER, and their use shall be strictly enforced.

2.12 ... SHOP DRAWINGS. The CONTRACTOR shall submit to the ENGINEER, with such promptness as to cause no delay in his own work or in that of any other Contractor, four checked copies, unless otherwise specified, of all shop and/or setting drawings and schedules required for the work of the various trades, and the ENGINEER shall pass upon them with reasonable promptness, making desired corrections. The CONTRACTOR shall make any corrections required by the ENGINEER; file with him two corrected copies and furnish such other copies as may be needed. The ENGINEER'S approval of such drawings or schedules shall not relieve the CONTRACTOR from responsibility for deviations from drawings or specifications, unless he has in writing called the ENGINEER'S attention to such deviations at the time of submission, nor shall it relieve him from responsibility for errors of any sort in shop drawings or schedules. It shall be the CONTRACTOR'S responsibility to fully and completely review all shop drawings to ascertain their effect on his ability to perform the required contract work in accordance with the plans and specifications and within the contract time.

Such review by the ENGINEER shall be for the sole purpose of determining the sufficiency of said drawings or schedules to result in finished improvements in conformity with the plans and specifications, and shall not relieve the CONTRACTOR of his duty as an independent contractor as previously set forth, it being expressly understood and agreed that the ENGINEER does not assume any duty to pass upon the propriety or adequacy of such drawings or schedules, or any means or methods reflected thereby, in relation to the safety of either person or property during CONTRACTOR'S performance hereunder.

2.13 ... PRELIMINARY APPROVAL. The ENGINEER shall not have the power to waive the obligations of this contract for the furnishing by the CONTRACTOR of good material, and of his performing good work as herein described, and in full accordance with the plans and specifications. No failure or omission of the ENGINEER to discover, object to or condemn any defective work or material shall release the CONTRACTOR from the obligations to fully and properly perform the contract, including without limitations, the obligation to at once tear out, remove and properly replace the same at any time prior to final acceptance upon the discovery of said defective work or material; provided, however, that the ENGINEER shall, upon request of the CONTRACTOR, inspect and accept or reject any material furnished, and in event the material has been once accepted by the ENGINEER, such acceptance shall be binding on the OWNER, unless it can be clearly shown that such material furnished does not meet the specifications for this work.

Any questioned work may be ordered taken up or removed for re-examination, by the ENGINEER, prior to final acceptance, and if found not in accordance with the specifications for said work, all expense of removing, re-examination and replacement shall be borne by the CONTRACTOR, otherwise the expense thus incurred shall be allowed as EXTRA WORK, and shall be paid for by the OWNER; provided that, where inspection or approval is specifically required by the specifications prior to performance of certain work, should the CONTRACTOR proceed with such work without requesting prior inspection or approval he shall bear all expense of taking up, removing, and replacing this work if so directed by the ENGINEER.

2.14 ... DEFECTS AND THEIR REMEDIES. It is further agreed that if the work of any part thereof, or any material brought on the site of the work for use in the work or selected for the same, shall be deemed by the ENGINEER as unsuitable or not in conformity with the

specifications, the CONTRACTOR shall, after receipt of written notice thereof from the ENGINEER, forthwith remove such material and rebuild or otherwise remedy such work so that it shall be in full accordance with this contract.

2.15 ... CHANGES AND ALTERATIONS. The CONTRACTOR further agrees that the OWNER may make such changes and alterations as the OWNER may see fit, in the line, grade, form, dimensions, plans or materials for the work herein contemplated, or any part thereof, either before or after the beginning of the construction, without affecting the validity of this contract and the accompanying Performance and Payment Bonds.

If such changes or alterations diminish the quantity of the work to be done, they shall not constitute the basis for a claim for damages, or anticipated profits on the work that may be dispensed with, except as provided for unit price items under Section 5 "Measurement and Payment." If the amount of work is increased, and the work can fairly be classified under the specifications, such increase shall be paid for according to the quantity actually done and at the unit price, if any, established for such work under this contract, except as provided for unit price items under Section 5 "Measurement and Payment;" otherwise, such additional work shall be paid for as provided under Extra Work. In case the OWNER shall make such changes or alterations as shall make useless any work already done or material already furnished or used in said work, then the OWNER shall recompense the CONTRACTOR for any material or labor so used, and for any actual loss occasioned by such change, due to actual expenses incurred in preparation for the work as originally planned.

3. GENERAL OBLIGATIONS AND RESPONSIBILITIES

3.01 ... KEEPING OF PLANS AND SPECIFICATIONS ACCESSIBLE. The ENGINEER shall furnish the CONTRACTOR with an adequate and reasonable number of copies of all plans and specifications without expense to him, and the CONTRACTOR shall keep one copy of the same constantly accessible on the work, with the latest revisions noted thereon.

3.02 ... OWNERSHIP OF DRAWINGS. All drawings, specifications and copies thereof furnished by the ENGINEER shall not be reused on other work, and, with the exception of the signed contract sets, are to be returned to him on request, at the completion of the work. All models are the property of the OWNER.

3.03 ... ADEQUACY OF DESIGN. It is understood that the OWNER believes it has employed competent engineers and designers. It is, therefore, agreed that the OWNER shall be responsible for the adequacy of the design, sufficiency of the Contract Documents, the safety of the structure and the practicability of the operations of the completed project; provided the CONTRACTOR has complied with the requirements of the said Contract Documents, all approved modifications thereof, and additions and alterations thereto approved in writing by the OWNER. The burden of proof of such compliance shall be upon the CONTRACTOR to show that he has complied with the said requirements of the Contract Documents, approved modifications thereof and all approved additions and alterations thereto.

3.04 ... RIGHT OF ENTRY. The OWNER reserves the right to enter the property or location on which the works herein contracted for are to be constructed or installed, by such agent or agents as he may elect, for the purpose of inspecting the work, or for the purpose of constructing or installing such collateral work as said OWNER may desire.

3.05 ... COLLATERAL CONTRACTS. The OWNER agrees to provide by separate contract or otherwise, all labor and material essential to the completion of the work specifically excluded from this contract, in such manner as not to delay the progress of the work, or damage said CONTRACTOR, except where such delays are specifically mentioned elsewhere in the Contract Documents.

3.06 ... DISCREPANCIES AND OMISSIONS. It is further agreed that it is the intent of this contract that all work must be done and all material must be furnished in accordance with the generally accepted practice, and in the event of any discrepancies between the separate contract documents, the priority of interpretation defined under "Contract Documents" shall govern. In the event that there is still any doubt as to the meaning and intent of any portion of the contract, specifications or drawings, the ENGINEER shall define which is intended to apply to the work.

3.07 ... EQUIPMENT, MATERIALS AND CONSTRUCTION PLANT. The CONTRACTOR shall be responsible for the care, preservation, conservation, and protection of all materials, supplies, machinery, equipment, tools, apparatus, accessories, facilities, all means of construction, and any and all parts of the work, whether the CONTRACTOR has been paid, partially paid, or not paid for such work, until the entire work is completed and accepted.

3.08 ... DAMAGES. In the event the CONTRACTOR is damaged in the course of the completion of the work by the act, neglect, omission, mistake or default of the OWNER, or of the ENGINEER, or of any other CONTRACTOR employed by the OWNER upon the work, thereby causing loss to the CONTRACTOR, the OWNER agrees that he will reimburse the CONTRACTOR for such loss. In the event the OWNER is damaged in the course of the work by the act, negligence, omission, mistake or default of the CONTRACTOR, or should the CONTRACTOR unreasonably delay the progress of the work being done by others on the job so as to cause loss for which the OWNER becomes liable, then the CONTRACTOR shall reimburse the OWNER for such loss.

3.09 ... PROTECTION AGAINST ACCIDENT TO EMPLOYEES AND THE PUBLIC. The CONTRACTOR shall at all times exercise reasonable precautions for the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America except where incompatible with Federal, State, or Municipal laws or regulations. The CONTRACTOR shall provide such machinery guards, safe walkways, ladders, bridges, gangplanks, and other safety devices. The safety precautions actually taken and their adequacy shall be the sole responsibility of the CONTRACTOR, acting at his discretion as an independent contractor.

3.10 ... PERFORMANCE AND PAYMENT BONDS. Unless otherwise specified, it is further agreed by the parties to this Contract that the CONTRACTOR will execute separate performance and payment bonds, each in the sum of one hundred (100) percent of the total contract price, in standard forms for this purpose, guaranteeing faithful performance of the work and the fulfillment of any guarantees required, and further guaranteeing payment to all persons supplying labor and materials or furnishing him any equipment in the execution of the Contract, and it is agreed that this contract shall not be in effect until such performance and payment bonds are furnished and approved by the OWNER.

Unless otherwise approved in writing by the OWNER, the surety company underwriting the bonds shall be acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United States.

Unless otherwise specified, the cost of the premium for the performance and payment bonds shall be included in the CONTRACTOR'S proposal.

3.11 ... LOSSES FROM NATURAL CAUSES. Unless otherwise specified, all loss or damage to the CONTRACTOR arising out of the nature of the work to be done, or from the action of the elements, or from any unforeseen circumstance in the prosecution of the same, or from unusual obstructions or difficulties which may be encountered in the prosecution of the work, shall be sustained and borne by the CONTRACTOR at his own cost and expense.

3.12 ... PROTECTION OF ADJOINING PROPERTY. The said CONTRACTOR shall take proper means to protect the adjacent or adjoining property or properties in any way encountered, which might be injured or seriously affected by any process of construction to be undertaken under this Agreement, from any damage or injury by reason of said process of construction; and he shall be liable for any and all claims for such damage on account of his failure to fully protect all adjoining property. The CONTRACTOR agrees to indemnify, save and hold harmless the OWNER and ENGINEER against any claim or claims for damages due to any injury to any adjacent or adjoining property, arising or growing out of the performance of the contract; but any such indemnity shall not apply to any claim of any kind arising out of the existence or character of the work.

3.13 ... PROTECTION AGAINST CLAIMS OF SUB-CONTRACTORS, LABORERS, MATERIALMEN AND FURNISHERS OF MACHINERY, EQUIPMENT AND SUPPLIES. The CONTRACTOR agrees that he will indemnify and save the OWNER and ENGINEER harmless from all claims growing out of the lawful demands of sub-contractors, laborers, workmen, mechanics, materialmen and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. When so desired by the OWNER, the CONTRACTOR shall furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the CONTRACTOR fails so to do, then the OWNER may at the option of the CONTRACTOR either pay directly any unpaid bills, of which the OWNER has written notice, or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to liquidate any and all such lawful claims until satisfactory evidence is furnished at all liabilities have been fully discharged, whereupon payments to the CONTRACTOR shall be resumed in full, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligation upon the OWNER by either the CONTRACTOR or his Surety.

3.14 ... PROTECTION AGAINST ROYALTIES OR PATENTED INVENTION.

The CONTRACTOR shall pay all royalties and license fees, and shall provide for the use of any design, device, material or process covered by letters patent or copyright by suitable legal agreement with the patentee or owner. The CONTRACTOR shall defend all suits or claims for infringement of any patent or copyright rights and shall indemnify and save the OWNER and ENGINEER harmless from any loss on account thereof, except that the OWNER shall defend all such suits and claims and shall be responsible for all such loss when a particular design, device, material or process or the product of a particular manufacturer or manufacturers is specified or required by the OWNER; provided however, if choice of alternate design, device, material or process is allowed to the CONTRACTOR, the CONTRACTOR shall indemnify and save OWNER harmless from any loss on account thereof. If the material or process specified or required by the OWNER is an infringement, the CONTRACTOR shall be responsible for such loss unless he promptly gives such information the OWNER.

3.15 ... LAWS AND ORDINANCES. The CONTRACTOR shall at all times observe and comply with all Federal, State and local laws, ordinances and regulations, which in any manner affect the contract or the work, and shall indemnify and save harmless the OWNER and ENGINEER against any claim arising from the violation of any such laws, ordinances, and regulations whether by the CONTRACTOR or his employees, except where such violations are called for by the provisions of the Contract Documents. If the CONTRACTOR observes that the plans and specifications are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in the contract for changes in the work. If the CONTRACTOR performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the ENGINEER, he shall bear all costs arising therefrom. In case the OWNER is a body politic and corporate, the law from which it derives its powers, insofar as the same regulates the objects for which, or the manner in which, or the conditions under which the OWNER may enter into contract, shall be controlling, and shall be considered as part of this contract, to the same effect as though embodies herein.

3.16 ... ASSIGNMENT AND SUBLETTING. The CONTRACTOR further agrees that he will retain personal control and will give his personal attention to the fulfillment of this contract and that he will not assign by Power of Attorney, or otherwise, or sublet said contract without the written consent of the ENGINEER, and that no part or feature of the work will be sublet to anyone objectionable to the ENGINEER or the OWNER. The CONTRACTOR further agrees that the subletting of any portion or feature of the work, or materials required in the performance of this contract, shall not relieve the CONTRACTOR from his full obligations to the OWNER, as provided by this Agreement.

3.17 ... INDEMNIFICATION. The CONTRACTOR shall defend, indemnify and hold harmless the OWNER and the ENGINEER and their respective officers, agents and employees, from and against all damages, claims, losses, demands, suits, judgments and costs, including reasonable attorneys' fees and expenses, arising out of or resulting from the performance of the work, provided that any such damages, claim, loss, demand, suit, judgment, cost or expense:

-(1) . . . is attributable to bodily injury, sickness, disease or death or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom; and

.....(2) . . . is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any one of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

The obligation of the CONTRACTOR under this Paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, drawings, reports, surveys, Change Orders, designs or specifications, or the giving of or the failure to give directions or instructions by the ENGINEER, his agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.

3.18 ... INSURANCE. The CONTRACTOR at his own expense shall purchase, maintain and keep in force such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S operations under the Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

.....(1) . . . Workmen's compensation claims, disability benefits and other similar employee benefit acts;

.....(2) . . . Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees, and claims insured by usual bodily injury liability coverages;

.....(3) . . . Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees, and claims insured by usual bodily injury liability coverages; and

.....(4) . . . Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

3.18.1 ... CERTIFICATE OF INSURANCE. Before commencing any of the work, CONTRACTOR shall file with the OWNER valid Certificates of Insurance acceptable to the OWNER and the ENGINEER. Such Certificates shall contain a provision that coverages afforded under the policies will not be canceled until at least fifteen days' prior written notice has been given to the OWNER.

The CONTRACTOR shall also file with the OWNER valid Certificates of Insurance covering all sub-contractors.

4. PROSECUTION AND PROGRESS

4.01 ... TIME AND ORDER OF COMPLETION. It is the meaning and intent of this contract, unless otherwise herein specifically provided, that the CONTRACTOR shall be allowed to prosecute his work at such times and seasons, in such order of precedence, and in such manner as shall be most conducive to economy of construction: provided, however, that the

order and the time of prosecution shall be such that the work shall be substantially completed as a whole and in part, in accordance with this contract, the plans and specifications, and within the time of completion designated in the Proposal; provided, also, that when the OWNER is having other work done, either by contract or by his own force, the ENGINEER may direct the time and manner of constructing the work done under this contract, so that conflict will be avoided and the construction of the various works being done for the OWNER shall be harmonized.

The CONTRACTOR shall submit, at such times as may reasonably be requested by the ENGINEER schedules which shall show the order in which the CONTRACTOR proposes to carry on the work, with dates at which the CONTRACTOR will start the several parts of the work, and estimated dates of completion of the several parts.

4.02 ... EXTENSION OF TIME. Should the CONTRACTOR be delayed in the completion of the work by any act or neglect of the OWNER or ENGINEER, or of any employee of either, or by other contractors employed by the OWNER, or by changes ordered in the work, or by strikes, lockouts, fires, and unusual delays by common carriers, or unavoidable cause or causes beyond the CONTRACTOR'S control, or by any cause which the ENGINEER shall decide justifies the delay, then an extension of time shall be allowed for completing the work, sufficient to compensate for the delay, the amount of the extension to be determined by the ENGINEER, provided, however, that the CONTRACTOR shall give the ENGINEER prompt notice in writing of the cause of such delay.

4.03 ... HINDRANCES AND DELAYS. No claims shall be made by the CONTRACTOR for damages resulting from hindrances or delays from any cause (except where the work is stopped by order of the OWNER) during the progress of any portion of the work embraced in this contract. In case said work shall be stopped by the act of the OWNER, then such expense as in the judgment of the ENGINEER is caused by such stoppage of said work shall be paid by the OWNER to the CONTRACTOR.

5. MEASUREMENT AND PAYMENT

5.01 ... QUANTITIES AND MEASUREMENTS. No extra or customary measurements of any kind will be allowed, but the actual measured and/or computed length, area, solid contents, number and weight only shall be considered, unless specifically provided.

5.02 ... ESTIMATED QUANTITIES. This agreement, including the specifications, plans and estimate, is intended to show clearly all work to be done and material to be furnished hereunder. Where the estimated quantities are shown for the various classes of work to be done and material to be furnished under this contract, they are approximate and are to be used only as a basis for estimating the probable cost of the work and for comparing the proposals offered for the work. It is understood and agreed that the actual amount of work to be done and material to be furnished under this contract may differ somewhat from these estimates, and that where the basis for payment under this contract is the unit price method, payment shall be for the actual amount of such work done and the material furnished.

Where payment is based on the unit price method, the CONTRACTOR agrees that he will make no claim for damages, anticipated profits or otherwise on account of any differences which may be found between the quantities of work actually done, the material actually

furnished under this contract and the estimated quantities contemplated and contained in the proposal; provided, however, that in case the actual quantity of any major item should become as much as 20% more than, or 20% less than the estimated or contemplated quantity for such items, then either party to this Agreement, upon demand, shall be entitled to a revised consideration upon the portion of the work above or below 20% of the estimated quantity.

A "Major Item" shall be construed to be any individual bid item incurred in the proposal that has a total cost equal to or greater than five (5) percent of the total contract cost, computed on the basis of the proposal quantities and the contract unit prices.

Any revised consideration is to be determined by agreement between the parties, otherwise by the terms of this Agreement, as provided under "Extra Work."

5.03 ... PRICE OF WORK. In consideration of the furnishing of all the necessary labor, equipment and material, and the completion of all work by the CONTRACTOR, and on the completion of all work and of the delivery of all material embraced in this Contract in full conformity with the specifications and stipulations herein contained, the OWNER agrees to pay the CONTRACTOR the prices set forth in the Proposal hereto attached, which has been made a part of this contract. The CONTRACTOR hereby agrees to receive such prices in full for furnishing all material and all labor required for the aforesaid work, also for all expense incurred by him, and for well and truly performing the same and the whole thereof in the manner and according to this Agreement.

5.04 ... PARTIAL PAYMENTS. On or before the 10th day of each month, the CONTRACTOR shall prepare and submit to the ENGINEER for approval or modification a statement showing as completely as practicable the total value of the work done by the CONTRACTOR up to and including the last day of the preceding month; said statement shall also include the value of all sound materials delivered on the site of the work that are to be fabricated into the work.

The OWNER shall then pay the CONTRACTOR on or before the 15th day of the current month the total amount of the approved statement, less 10 percent of the amount thereof, which 10 percent shall be retained until final payment, and further less all previous payments and all further sums that may be retained by the OWNER under the terms of this Agreement. It is understood, however, that in case the whole work be near to completion and some unexpected and unusual delay occurs due to no fault or neglect on the part of the CONTRACTOR, the OWNER may -- upon recommendation of the ENGINEER -- pay a reasonable and equitable portion of the retained percentage to the CONTRACTOR, or the CONTRACTOR at the OWNER'S option, may be relieved of the obligation to fully complete the work and, thereupon, the CONTRACTOR shall receive payment of the balance due him under the contract subject only to the conditions stated under "Final Payment".

5.05 ... USE OF COMPLETED PORTIONS. The OWNER shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding the time for completing the entire work or such portions may not have expired but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the work, the CONTRACTOR shall be entitled to such extra compensation, or extension of time, or both, as the ENGINEER may determine.

The CONTRACTOR shall notify the ENGINEER when, in the CONTRACTOR'S opinion, the contract is "substantially completed" and when so notifying the ENGINEER, the CONTRACTOR shall furnish to the ENGINEER in writing a detailed list of unfinished work. The ENGINEER will review the CONTRACTOR'S list of unfinished work and will add thereto such items as the CONTRACTOR has failed to include. The "substantial completion" of the structure or facility shall not excuse the CONTRACTOR from performing all of the work undertaken, whether of a minor or major nature, and thereby completing the structure or facility in accordance with the Contract Documents.

5.06 ... FINAL COMPLETION AND ACCEPTANCE. Within ten (10) days after the CONTRACTOR has given the ENGINEER written notice that the work has been completed, or substantially completed, the ENGINEER and the OWNER shall inspect the work and within said time, if the work be found to be completed or substantially completed in accordance with the Contract Documents, the ENGINEER shall issue to the OWNER and the CONTRACTOR his Certificate of Completion, and thereupon it shall be the duty of the OWNER within ten (10) days to issue a Certificate of Acceptance of the work to the CONTRACTOR or to advise the CONTRACTOR in writing of the reason for non-acceptance.

5.07 ... FINAL PAYMENT. Upon the issuance of the Certificate of Completion, the ENGINEER shall proceed to make final measurements and prepare final statement of the value of all work performed and materials furnished under the terms of the Agreement and shall certify same to the OWNER, who shall pay to the CONTRACTOR on or after the 30th day, and before the 35th day, after the date of the Certificate of Completion, the balance due the CONTRACTOR under the terms of this Agreement, provided he has fully performed his contractual obligations under the terms of this contract; and said payment shall become due in any event upon said performance by the CONTRACTOR. Neither the Certificate of Acceptance nor the final payment, nor any provision in the Contract Documents, shall relieve the CONTRACTOR of the obligation for fulfillment of any warranty which may be required.

5.08 ... PAYMENTS WITHHELD. The OWNER may, on account of subsequently discovered evidence, withhold or nullify the whole or part of any certificate to such extent as may be necessary to protect himself from loss on account of:

-(a)Defective work not remedied
-(b)Claims filed or reasonable evidence indicating probable filing of claims.
-(c)Failure of the CONTRACTOR to make payments properly to subcontractors or for material or labor.
-(d)Damage to another contractor.
-(e)Reasonable doubt that the work can be completed for the unpaid balance of the contract amount.
-(f)Reasonable indication that the work will not be completed within the contract time.

When the above grounds are removed or the CONTRACTOR provides a Surety Bond satisfactory to the OWNER, which will protect the OWNER in the amount withheld, payment shall be made for amounts withheld because of them.

5.09 ... DELAYED PAYMENTS. Should the OWNER fail to make payment to the CONTRACTOR of the sum named in any partial or final statement, when payment is due, then the OWNER shall pay to the CONTRACTOR, in addition to the sum shown as due by such statement, interest thereon at the rate of six (6) percent per annum, unless otherwise specified, from date due as provided under "Partial Payments" and "Final Payments", until fully paid, which shall fully liquidate any injury to the CONTRACTOR growing out of such delay in payment, but the right is expressly reversed to the CONTRACTOR in the event payments be not promptly made, as provided under "Partial Payments", to at any time thereafter treat the contract as abandoned by the OWNER and recover compensation, as provided under "Abandonment of Contract", unless such payments are withheld in accordance with the provisions of "Payments Withheld".

6. EXTRA WORK AND CLAIMS

6.01 ... CHANGE ORDERS. Without invalidating this Agreement, the OWNER may, at any time or from time to time, order additions, deletions or revisions to the work; such changes will be authorized by Change Order to be prepared by the ENGINEER for execution by the OWNER and the CONTRACTOR. The Change Order shall set forth the basis for any change in contract price, as hereinafter set forth for Extra Work, and any change in contract time which may result from the change.

In the event the CONTRACTOR shall refuse to execute a Change Order which has been prepared by the ENGINEER and executed by the OWNER, the ENGINEER may in writing instruct the CONTRACTOR to proceed with the work as set forth in the Change Order and the CONTRACTOR may make claim against the OWNER for Extra Work involved therein, as hereinafter provided.

6.02 ... MINOR CHANGES. The ENGINEER may authorize minor changes in the work not inconsistent with the overall intent of the Contract Documents and not involving an increase in Contract Price. If the CONTRACTOR believes that any minor change or alteration authorized by the ENGINEER involves Extra Work and entitles him to an increase in the Contract Price, the CONTRACTOR shall make written request to the ENGINEER for a written Field Order.

In such case, the CONTRACTOR by copy of his communication to the ENGINEER or otherwise in writing shall advise the OWNER of his request to the ENGINEER for a written Field Order and that the work involved may result in an increase in the Contract Price.

Any request by the CONTRACTOR for a change in Contract Price shall be made prior to beginning the work covered by the proposed change.

6.03 ... EXTRA WORK. It is agreed that the basis of compensation to the CONTRACTOR for work either added or deleted by a Change Order for which a claim for Extra Work is made shall be determined by one or more of the following methods:

-Method (A) - ... By agreed unit prices; or
-Method (B) - ... By agreed lump sum; or

.....Method (C) - ...If neither Method (A) nor Method (B) be agreed upon before the Extra work is commenced, then the CONTRACTOR shall be paid the “actual field cost” of the work, plus fifteen (15) percent.

In the event said Extra Work be performed and paid for under Method (C), then the provisions of this paragraph shall apply, and the “actual field cost” is hereby defined to include the cost to the CONTRACTOR of all workmen, such as foreman, timekeepers, mechanics and laborers, and materials, supplies, teams, trucks, rentals on machinery and equipment, for the time actually employed or used on such Extra Work, plus actual transportation charges necessarily incurred, together with all power, fuel, lubricants, water and similar operating expenses, also all necessary incidental expenses incurred directly on account of such Extra Work, including Social Security, Old Age Benefits and other payroll taxes, and a rateable proportion of premiums on Performance and Payment Bonds and Maintenance Bonds, Public Liability and Property Damage and Workmen’s Compensation and all other insurance as may be required by any law or ordinance or directed by the OWNER or by them agreed to. The ENGINEER may direct the form in which accounts of the “actual field cost” shall be kept and the records of these accounts shall be made available to the ENGINEER. The ENGINEER or OWNER may also specify in writing, before the work commences, the method of doing the work and the type and kind of machinery and equipment to be used; otherwise these matters shall be determined by the CONTRACTOR. Unless otherwise agreed upon, the prices for the use of machinery and equipment shall be determined by using 100 percent, unless otherwise specified, of the latest schedule of Equipment Ownership Expense adopted by the Associated General Contractors of America. Where practicable the terms and prices for the use of machinery and equipment shall be incorporated in the Written Extra Work Order. The fifteen (15%) percent of the “actual field cost” to be paid the CONTRACTOR shall cover and compensate him for his profit, overhead, general superintendence and field office expense, and all other elements of cost and expense not embraced within the “actual field cost” as herein defined, save that where the CONTRACTOR’S Camp or Field Office must be maintained primarily on account of such Extra Work; then the cost to maintain and operate the same shall be included in the “actual field cost”.

No claim for Extra Work of any kind will be allowed unless ordered in writing by the ENGINEER. In case any orders or instructions, either oral or written, appear to the CONTRACTOR to involve Extra Work for which he should receive compensation or an adjustment in the construction time, he shall make written request to the ENGINEER for written order authorizing such Extra Work. Should a difference of opinion arise as to what does or does not constitute Extra Work, or as to the payment therefor, and the ENGINEER insists upon its performance, the CONTRACTOR shall proceed with the work after making written request for written order and shall keep an accurate account of the “actual field cost” thereof, as provided under Method (C). The CONTRACTOR will thereby preserve the right to submit the matter of payment to arbitration, as herein below provided.

6.04 ... TIME OF FILING CLAIMS. It is further agreed by both parties hereto that all questions of dispute or adjustment presented by the CONTRACTOR shall be in writing and filed with the ENGINEER within thirty (30) days after the ENGINEER has given any directions, order or instruction to which the CONTRACTOR desires to take exception. The ENGINEER shall reply within thirty (30) days to such written exceptions by the CONTRACTOR and render his final decision in writing. In case the CONTRACTOR should appeal from the ENGINEER’S decision, any demand for arbitration shall be filed with the ENGINEER and the OWNER in writing within ten (10) days after the date of delivery to CONTRACTOR of the ENGINEER’S

final decision. It is further agreed that final acceptance of the work by the OWNER and the acceptance by the CONTRACTOR of the final payment shall be a bar to any claims by either party, except where noted otherwise in the Contract Documents.

6.05 ... ARBITRATION. All questions of dispute under this Agreement shall be submitted to arbitration at the request of either party to the dispute. The parties may agree upon one arbiter, otherwise, there shall be three, one named in writing by each party, and the third chosen by the two arbiters so selected; or if the arbiters fail to select a third within ten (10) days, he shall be chosen by a District Judge serving the County in which the major portion of the project is located, unless otherwise specified. Should the party demanding arbitration fail to name an arbiter within ten (10) days of the demand, his right to arbitrate shall lapse, and the decision of the ENGINEER shall be final and binding on him. Should the other party fail to choose an arbiter within ten (10) days, the ENGINEER shall appoint such arbiter. Should either party refuse or neglect to supply the arbiters with any papers or information demanded in writing, the arbiters are empowered by both parties to take ex parte proceedings.

The arbiters shall act with promptness. The decision of any two shall be binding on both parties to the contract. The decision of the arbiters upon any question submitted to arbitration under this contract shall be a condition precedent to any right of legal action. The decision of the arbiter or arbiters may be filed in court to carry it into effect.

The arbiters, if they deem the case demands it, are authorized to award the party whose contention is sustained, such sums as they deem proper for the time, expense and trouble incident to the appeal, and if the appeal was taken without reasonable cause, they may award damages for any delay occasioned thereby. The arbiters shall fix their own compensation, unless otherwise provided by agreement, and shall assess the cost and charges of the arbitration upon either or both parties. The award of the arbiters must be made in writing.

7. ABANDONMENT OF CONTRACT

7.01 ... ABANDONMENT BY CONTRACTOR. In case the CONTRACTOR should abandon and fail or refuse to resume work within ten (10) days after written notification from the OWNER, or the ENGINEER, or if the CONTRACTOR fails to comply with the orders of the ENGINEER, when such orders are consistent with the Contract Documents, then, and in that case, where performance and payment bonds exist, the Sureties on these bonds shall be notified in writing and directed to complete the work, and a copy of said notice shall be notified in writing and directed to complete the work, and a copy of said notice shall be delivered to the CONTRACTOR.

After receiving said notice of abandonment, the CONTRACTOR shall not remove from the work any machinery, equipment, tools, materials or supplies then on the job; but the same, together with any materials and equipment under contract for the work, may be held for use on the work by the OWNER or Surety on the performance bond, or another contractor in completion of the work; and the CONTRACTOR shall not receive any rental or credit therefor (except when used in Work and Claims), it being understood that the use of such equipment and materials will ultimately reduce the cost to complete the work and be reflected in the final settlement.

Where there is no performance bond provided or in case the Surety should fail to commence compliance with the notice for completion herein before provided for, within ten (10) days after service of such notice, then the OWNER may provide for completion of the work in either of the following elective manners:

7.01.1 The OWNER may thereupon employ such force of men and use such machinery, equipment, tools, materials and supplies as said OWNER may deem necessary to complete the work and charge the expense of such labor, machinery, equipment, tools, materials and supplies to said CONTRACTOR, and expense so charged shall be deducted and paid by the OWNER out of such moneys as may be due, or that may thereafter at any time become due to the CONTRACTOR under and by virtue of this Agreement. In case such expense is less than the sum which would have been payable under this contract, if the same had been completed by the CONTRACTOR, then said CONTRACTOR shall receive the difference. In case such expense is greater than the sum which would have been payable under this contract, if the same had been completed by said CONTRACTOR, then the CONTRACTOR and/or his Surety shall pay the amount of such excess to the OWNER; or

7.01.2 The OWNER under sealed bids, after five (5) days' notice published one or more times in a newspaper having general circulation in the county of the location of the work, may let the contract for the completion of the work under substantially the same terms and conditions which are provided in this contract. In case any increase in cost to the OWNER under the new contract as compared to what would have been the cost under this contract, such increase shall be charged to the CONTRACTOR and Surety shall be and remain bound therefor. However, should the cost to complete any such contract prove to be less than what would have been the cost to complete under this contract, the CONTRACTOR and/or his Surety shall be credited therewith.

When the work shall have been substantially completed the CONTRACTOR and his Surety shall be so notified and Certificates of Completion and Acceptance, as provided in Paragraph 5.06 hereinabove, shall be issued. A complete itemized statement of the contract accounts, certified to by the ENGINEER as being correct, shall then be prepared and delivered to the CONTRACTOR and his Surety, whereupon the CONTRACTOR and/or his Surety, or the OWNER as the case may be, shall pay the balance due as reflected by said statement, within fifteen (15) days after the date of such completion.

In the event the statement of accounts shows that the cost to complete the work is less than that which would have been the cost to the OWNER had the work been completed by the CONTRACTOR under the terms of this contract; or when the CONTRACTOR and/or his Surety shall pay the balance shown to be due by them to the OWNER, then all machinery, equipment, tools, materials or supplies left on the site of the work shall be turned over to the CONTRACTOR and/or his Surety. Should the cost to complete the work exceed the contract price, and the CONTRACTOR and/or his Surety fail to pay the amount due the OWNER within the time designated hereinabove, and there remains any machinery, equipment, tools materials or supplies on the site of the work, notice thereof, together with an itemized list of such equipment and materials shall be mailed to the CONTRACTOR and his Surety at the respective addresses designated in this contract, provided, however, that actual written notice given in any manner will satisfy this condition. After mailing, or other giving of such notice, such property shall be held at the risk of the CONTRACTOR and his Surety subject only to the duty of the OWNER to

exercise ordinary care to protect such property. After fifteen (15) days from the date of said notice, the OWNER may sell such machinery, equipment, tools, materials or supplies and apply the net sum derived from such sale to the credit of the CONTRACTOR and his Surety. Such sale may be made at either public or private sale, with or without notice, as the OWNER may elect. The OWNER shall release any machinery, equipment, tools, materials, or supplies, which remain on the work, and belong to persons other than the CONTRACTOR or his Surety, to their proper owners. The books on all operations provided herein shall be open to the CONTRACTOR and his Surety.

7.02 ... ABANDONMENT BY OWNER. In case the OWNER shall fail to comply with the terms of this contract, and should fail or refuse to comply with said terms within ten (10) days after written notification by the CONTRACTOR, then the CONTRACTOR may suspend or wholly abandon the work, and may remove therefrom all machinery, tools and equipment, and all materials on the site of work that have not been included in payments to the CONTRACTOR and have not been wrought into the work. And thereupon the ENGINEER shall make an estimate of the total amount earned by the CONTRACTOR, which estimate shall include the value of all work actually completed by said CONTRACTOR (at the prices stated in the attached proposal where unit prices are used), the value of all partially completed work at a fair and equitable price, and the amount of all Extra Work performed at the prices agreed upon, or provided for by the terms of this contract, and a reasonable sum to cover the cost of any provisions made by the CONTRACTOR to carry the whole work to completion and which cannot be utilized. The ENGINEER shall then make a final statement of the balance due the CONTRACTOR by deducting from the above estimate all previous payments by the OWNER and all other sums that may be retained by the OWNER under the terms of this Agreement and shall certify same to the OWNER who shall pay to the CONTRACTOR on or before thirty (30) days after the date of the notification by the CONTRACTOR the balance shown by said final statement as due the CONTRACTOR, under the terms of this Agreement.

SPECIAL CONDITIONS

VILLAGE OF SALADO, TEXAS

SOUTH RIDGE SAWTOOTH CURB REPAIR

SPECIAL CONDITIONS

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VILLAGE OF SALADO, TEXAS

SOUTH RIDGE SAWTOOTH CURB REPAIR

SPECIAL CONDITIONS

SC.01 GENERAL

The provisions of this section of the specifications shall govern in the event of any conflict between them and the "General Conditions of Agreement."

SC.02 DEFINITIONS

Agreement. "Agreement" shall mean the contract document as herein set forth.

Calendar Day. "Calendar Day" shall mean any day of the week or month, no days being excepted.

Extra Work. "Extra Work" shall mean and include all work that may be required by the Owner to be done by the Contractor to accomplish any change, alteration, or addition to the work shown on the plans or reasonably implied by the specifications, and not covered by the Contractor's proposal.

Parties. The parties to this agreement are the Owner and the Contractor.

Project. "Project" shall mean the work embraced by this agreement, including the Plans and Specifications, General and Special Conditions, Performance and Payment Bonds attached hereto; generally described as follows:

South Ridge Sawtooth Curb Repair

Subcontractor. "Subcontractor" shall mean only those having a direct contract with the Contractor for performance of work on the project contemplated by these contract documents.

Substantially Completed. "Substantially Completed" shall mean that the project contemplated by the contract documents has been made suitable for use or occupancy, or the facility is in a condition to serve its intended purpose; but still may require minor miscellaneous work and adjustment, provided, however, that final payment of the contract price including retainage, shall not be made until completion of all punch list items and upon acceptance by the Owner. Acceptance by the Owner shall not impair any warranty obligation of the Contractor.

Work. "Work" or "Scope or Work" shall mean South Ridge Sawtooth Curb Repair as more fully described in the Scope of Work contained in SC.06.

SC.03 ENGINEER

The word "Engineer" in these specifications shall be understood as referring to Kasberg, Patrick & Associates, LP, Consulting Engineers; 19 North Main; Temple, Texas 76501, Engineer of the Owner, or such other representatives as may be authorized by said Owner to act in any particular position.

SC.04 LOCATION OF PROJECT

This project is located in Salado, Texas on the low water bridge across Salado Creek at South Ridge Road. See the location map on Sheet 1 of the plans.

SC.05 EXAMINATION OF SITE OF PROJECT

Prospective bidders shall make a careful and thorough examination of the site of the project, including all soil and water conditions to be encountered, improvements to be protected, disposal sites for surplus materials, arrangements necessary for providing ingress and egress to private properties and methods of handling traffic during prosecution of all the work involved.

SC.06 SCOPE OF WORK

The work to be performed under this contract consists of furnishing all materials, labor, supervision, tools, equipment and incidentals required, and performing all work necessary for the construction of:

South Ridge Sawtooth Curb Repair:

Removal and disposal of existing broken curb on northeast (downstream) side of bridge and construction of approximately 45 "teeth" of saw tooth curb.

SC.07 FORMS, PLANS AND SPECIFICATIONS

Forms of Proposal, Contract and Bonds, and Plans and Specifications may be obtained from the Salado Municipal Building.

SC.08 COPIES OF PLANS AND SPECIFICATIONS FURNISHED

One (1) set of plans and specifications shall be furnished to the successful Contractor, at no charge, for construction purposes. Additional copies may be obtained at the cost of reproduction upon request.

SC.09 PRE-BID CONFERENCE

There will be no pre-bid conference for this project.

SC.10 ADDENDA

Bidders desiring further information, or interpretation of the plans and specifications must make request for such information to the Engineer as outlined in this Section and in the Instructions to Bidders for Construction. Answers to all such requests will be given in writing to all Plan Holders (persons who have made deposit for received plans and specifications) 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.

Any addenda issued prior to seventy-two (72) hours before the opening of bids will be mailed to each Plan Holder. Any addenda issued after that time will be mailed and / or emailed / faxed. The proposals as submitted by the Contractor will be so constructed as to include any addenda if such are issued by the Engineer prior to twenty-four (24) hours before the opening of bids.

SC.11 PREPARATION OF PROPOSAL

The Bidder shall submit his proposal on the forms furnished. All blank spaces in the form shall be correctly filled in and the bidder shall state the price, both in words and numerals, for which he proposes to do the work contemplated or furnish the materials required. Such prices shall be written in ink, distinctly and legibly, or typewritten. In cases of discrepancy between the price written in words and the price written in figures, the price written in words shall govern. If the proposal is submitted by an individual, his name must be signed by him or his duly authorized agent. If a proposal is submitted by a firm, association, or partnership, the name and address of each member must be given and the proposal signed by a member of the firm, association or partnership, or person duly authorized. If the proposal is submitted by a company or corporation, the company or corporate name and business address must be given, and the proposal signed by an official or duly authorized agent. Powers of attorney authorizing agents or others to sign proposal must be properly certified and must be in writing and submitted with the proposal. The proposal shall be executed in ink.

Each proposal shall be enclosed in a sealed envelope, addressed as specified in the Notice to Contractors, and endorsed on the outside of the envelope in the following manner:

- a. Bidder's name.
- b. Proposal for "South Ridge Sawtooth Curb Repair."

Bid proposal may be withdrawn and resubmitted at any time prior to the time set for opening of the bids, but no proposal may be withdrawn or altered after the opening of the bids.

SC.12 ALTERNATE BIDS

There are no alternate bids for this project.

SC.13 QUALIFICATION OF LOW BIDDER

Prior to award of contract, the bidder shall submit such evidence as the Owner may require establishing the bidder's qualifications to satisfactorily perform the work included in this project. Information that may be required shall include (1) the bidder's current financial statement including amount of funds readily available to commence and carry out the work, (2) a list of equipment available for this project, (3) a list of projects that of the same general type as included in this contract, together with the names, addresses and phone numbers of persons familiar with this work, and (4) other information that may be pertinent to the bidder's qualifications.

Should the bidder fail to promptly produce evidence satisfactory to the Owner on any of the foregoing points, he may be disqualified and the work awarded to the next bidder so qualifying.

SC.14 AWARD OF CONTRACT

It is the intention of the Owner to award a contract on the basis of the lowest acceptable bid submitted by a qualified bidder as determined by the Owner. The right is reserved, as the interest of the Owner may require, to reject any and all bids and to waive any informality in bids received.

The Village of Salado will notify the successful bidder, in writing, within sixty (60) days of the date of receiving bids, of its acceptance of his proposal. The Contractor shall complete the execution of the required Bond and Contract within ten (10) days of such notice.

SC.15 SEQUENCE OF CONSTRUCTION

The time allotted for completion of this project is described under Section SC.16 of these Special Conditions.

Prior to beginning construction on this project, the Contractor shall prepare a written construction sequence and schedule for review by the Engineer and approval by the Owner. This construction sequence and schedule shall be followed by the Contractor unless changes are approved by the Owner.

No partial payment estimates will be issued until the Sequence and Schedule of Construction has been approved.

SC.16 TIME ALLOTTED FOR COMPLETION AND NOTICE TO PROCEED

The construction of the South Ridge Road Curb Replacement shall be completed within **30 Calendar Days** of the issuance of the Notice to Proceed. The Notice to Proceed shall consist of a written request by the Engineer for the Contractor to proceed with the construction of the project.

SC.17 PRECONSTRUCTION CONFERENCE

There will be no preconstruction conference unless otherwise directed by representatives of the Village of Salado.

SC.18 CONSTRUCTION IN PUBLIC ROADS AND PRIVATE DRIVES

No public or private road shall be entirely closed overnight. It shall be the responsibility of the Contractor to build and maintain all weather bypasses and detours, if necessary, and to properly light, barricade, and mark all bypasses and detours that might be required on and across the roads involved in the work included in this contract.

The Contractor shall be responsible for repair and maintenance of all roadways damaged as a result of the construction of this project for a period of one year after completion or acceptance of the work. Within this period of one year time, if it becomes necessary for the Owner to make such repairs, the Contractor shall reimburse the Owner for the cost of such repairs.

SC.19 REFERENCE SPECIFICATIONS

Where reference is made in these specifications to specifications compiled by others, 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.

SC.20 EXTENSION OF TIME

Contractor agrees he has submitted his proposal in full recognition of the time required for the completion of this project, taking into consideration the average climatic range and material manufacturing conditions prevailing in this locality, and has considered the liquidated damage provision herein, and that he shall not be entitled to, nor will he request, an extension of time on this contract, except when his work has been delayed by an act or neglect of the Owner, employees or

representatives of the Owner, or other contractors employed by the Owner, or by changes ordered in the work, or reductions thereto in writing. The Contractor may apply in writing for an extension of time, submitting therewith all written justification as may be required by the Engineer for such and extension as requested by Contractor. The Engineer, within ten (10) days after receipt of a written request for an extension of time by the Contractor, which is supported by all requested documentation, shall decide if an extension of time shall be allowed.

SC.21 LIQUIDATED DAMAGES FOR DELAY BY CONTRACTOR

The Contractor agrees that time is of the essence on this contract and that the Owner will be damaged as a result of any delay beyond the date agreed upon in the completion of all items of work herein specified and contracted for. The parties understand and agree that the actual damages will be sustained by the Owner because of such delay will be uncertain and difficult of ascertainment and it is further agreed that a reasonable estimate of the actual amount of such damages in light of the facts known to the parties at the time of execution of this contract will be two-hundred-fifty dollars (\$ 250.00) per day. It is therefore agreed that the

Owner may withhold permanently from the Contractor's total compensation, the total sum of \$ 250.00 per day as liquidated damages for delay for each day of delaying completion beyond the date agreed upon for completion of the items of work herein specified and contracted for (after due allowance for such extension of time as is provided for in the General Conditions of Agreement and in Paragraph SC.20).

SC.22 DAMAGES

Article 3.08 of the General Conditions of Agreement is hereby voided and replaced with the following:

In the event the Contractor is damaged in the course of the completion of the work by the neglect, or default of the Owner, or representative of the Owner, or of any other Contractor employed by the Owner upon the work, thereby causing loss to the Contractor, the Owner agrees that he will reimburse the Contractor for such loss. In the event the Owner is damaged in the course of the work by the act, negligence, omission, mistake or default of the Contractor, or should the Contractor unreasonably delay the progress of the work being done by others on the job so as to cause loss for which the Owner becomes liable, then the Contractor shall reimburse the Owner for such loss.

SC.23 OBJECTIONS AND TIME OF FILING CLAIMS

In Paragraph 6.04 of the General Conditions, add the following after the first sentence:

“Failure to file such an objection during such period shall constitute waiver thereof and consent to the decision rendered by the Engineer.”

Also, delete the third sentence, which deals with arbitration.

Also, in Paragraph 2.05 of the General Conditions, delete the last clause dealing with arbitration and insert:

“Failure to file such an objection during such period shall constitute waiver thereof and consent to the decision rendered by the Engineer.”

SC.24 MEDIATION

Article 6.05 of the General Conditions of Agreement is hereby voided and replaced with the following:

In an effort to resolve any conflicts that arise during the construction of the Project or following the completion of the Project, the Owner and the Contractor agree that all disputes between them arising out of or relating to this Agreement or the Project shall be submitted to nonbinding mediation unless the parties mutually agree otherwise.

The Owner and Contractor further agree to include a similar mediation provision in all agreements with their subcontractors, subconsultants, suppliers and fabricators, thereby providing for mediation as the primary method for dispute resolution between the parties to all those agreements.

SC.25 FEES AND ROYALTIES

All fees or royalties for any patented invention, process, article, or arrangement in any manner connected with the work, or with these specifications, shall be included in the price stated in the proposal.

SC.26 INDEMNITY

Contractor agrees to and shall indemnify and hold harmless Owner, its officers, agents and employees, from and against any and all claims, losses, damages, causes of action, suits, and liability of every kind, including all expenses damages, causes of action, suits, and liability of every kind, including all expenses of litigation, court costs, and attorney’s fees, for injury to or death of any person, or for damage to any property, arising out of or in connection with the work done by Contractor under this contract, regardless of whether such injuries, death or damages are caused in whole or in part by the negligence of the Village of Salado.

Contractor assumes full responsibility for the work to be performed hereunder, and hereby releases, relinquishes and discharges Owner, its officers, agents and employees, from all claims, demands, and causes of action of every kind and character including the cost of defense thereof, for any injury to, including death of, person (whether they be third persons, contractor, or employees of either the parties hereto) and any loss of or damage to property (whether the same be that of either of the parties hereto or of third parties) caused by or alleged to be caused

by, arising out of, or in connection with Contractor's work to be performed hereunder whether or not said claims, demands and causes of action in whole or in part are covered by insurance regardless of whether such loss, damage, or injury was caused by Owner. Owner, by this agreement does not give consent to litigation.

SC.27 LAWS TO BE OBSERVED

The Contractor shall, at his own expense, do those things necessary for the procurement of and shall procure all permits, certificates and licenses required of him by the law or governmental regulation for the performance of his work. He shall comply with all federal, state and local laws, ordinances or rules and regulations relating to the performance of his work. In addition to all other laws, ordinances and rules and regulations, these shall include any such laws, ordinances or rules and regulations relating to noise from the Contractor's operations.

SC.28 STATE AND CITY SALES TAXES

This contract is issued by an organization which qualifies for exemption provisions pursuant to Provisions of the Texas Tax Code. Sections 151.301, 151.307, 151.309 and 151.311. The Contractor must obtain a limited sales excise and use tax permit or exemption certificate which shall enable him to buy the materials to be incorporated into the work without paying the tax at the time of purchase.

SC.29 ANTITRUST

The Contractor hereby assigns to the Owner any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States, 15 U.S.C.A. Section 1, et seq, (1973).

SC.30 GUARANTY AGAINST DEFECTIVE WORK

The Contract shall indemnify the Owner against any repairs which may become necessary to any part of the work performed under each contract, arising from defective workmanship or material used therein, for a period of one (1) year from the date of final acceptance of the work, unless the technical specifications provide for another period.

Neither the Certificate of Acceptance nor any provision in the Contract Documents, nor partial or entire use, or occupancy of the premise by the Owner will constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials.

INSURANCE

Satisfactory certificates of insurance for all coverage listed herein shall be filed with the Owner prior to starting any construction work on this contract. Insurance shall include the Owner, the Engineer and the State of Texas as additional insured parties.

Workmen's Compensation and Employer's Liability

This insurance shall protect Contractor against all claims under applicable state workmen's compensation laws. Contractor shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workmen's compensation law. This policy shall include an "all states" endorsement.

The liability limits shall not be less than:

Workmen's Compensation	Statutory
Employer's Liability	\$100,000 each occurrence

Comprehensive Automobile Liability

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

The liability limits shall not be less than:

Bodily Injury	\$250,000 each person \$500,000 each occurrence \$1,000,000 aggregate
Property Damage	\$100,000 each occurrence \$100,000 aggregate

Comprehensive General Liability

This insurance shall be written in comprehensive form and shall protect Contractor and additional insured parties against all claims arising out of any act or omission of the Contractor or his agents, employees or subcontractors.

The liability limits shall be not less than:

Bodily Injury	\$500,000 each person \$500,000 each occurrence \$500,000 aggregate
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Property Damage \$100,000 each occurrence
 \$100,000 aggregate

Excess Liability Insurance

The Contractor shall obtain, pay for and maintain a policy during the contract term, insuring Contractor for an amount of not less than \$1,000,000 combined single limit bodily injury and property damage liability insurance, including death, in excess of the primary coverage required hereinabove. The Owner, the Engineer and the State of Texas shall be named as additional insureds.

The Contractor shall furnish a Certificate of Insurance for the above coverage with a provision that the Owner will be notified by the insurance company ten (10) days prior to cancellation of the policy during the term of the contract, and if canceled, a new policy must be furnished prior to cancellation.

SC.32

PAYMENTS TO CONTRACTOR

Progress Payments

Article 5.04 of the General Conditions of Agreement, is hereby voided and replaced by the following:

The Contractor shall prepare a requisition for progress payment as of the last day of the month and submit it, with six (6) copies, to the Engineer or other designated representative of the Village of Salado. On or before the 10th day of each month, the Engineer shall prepare a statement showing as completely as practicable the total value of the work done by the Contractor up to and including the last day of the preceding month; said statement shall also include the invoice value of all sound materials delivered, and properly stored and protected, on the site of the work that are to be fabricated into the work.

The Owner shall then pay the Contractor on or before the 25th day of the current month the total amount of the approved statement. The amount of the payment due the Contractor shall be determined by adding to the total value of work completed to date, the value of materials properly stored on the site and deducting (1) five percent (5%) of the total amount, as a retainage and (2) the amount of all previous payments. The total value of work completed to date shall be based on the estimated quantities of work completed and on the unit process contained in the agreement and adjusted by approved change orders. The value of materials properly stored on the site shall be based upon the estimated quantities of such materials and the invoice prices. Copies of all invoices shall be furnished to the Engineer.

The Contractor shall be responsible for the care and protection of all materials and work upon which payments have been made until final acceptance of such work and materials by the Owner. Such payment shall not constitute a waiver of the right of the Owner to require the fulfillment of all terms of the Contract and the delivery of all improvements embraced in this Contract complete and satisfactory to the Owner in all details.

The five percent (5%) retainage of the progress payments otherwise due to the Contractor may not be reduced until the building of the project is substantially complete and a reduction in the retainage has been authorized by the Owner.

Withholding Payments

The Owner may withhold from any payment otherwise due the Contractor so much as may be necessary to protect the Owner and if so elects may also withhold amounts due from the Contractor to any subcontractors or material dealers, for work performed or material furnished by them. The foregoing provisions shall be construed solely for the benefit of the Owner and will not require the Owner to determine or adjust any claims or disputes between the Contractor and his subcontractors or material dealers, or to withhold any moneys for their protection unless the Owner elects to do so. The failure or refusal of the Owner to withhold any moneys from the Contractor shall in no way impair the obligations of any surety or sureties under any bond or bonds furnished under this Contract.

Separate Payment

Except as modified by Change Orders subsequent to execution of the Contract for this proposed work, no separate payment shall be made for work described in these Specifications or shown on the Plans. Total compensation to the Contractor shall be as set forth in the various Bid Items in the Proposal and Bid Schedule.

The Owner, before paying the final estimate, may require the Contractor to furnish releases or receipts from all subcontractors having performed any work and all persons having supplied materials, equipment (installed on the Project) and services to the Contractor, if the Owner deems the same necessary in order to protect the Owner's interests. The Owner, however, may if it deems such action advisable make payment in part or in full to such Contractor without requiring the furnishing of such releases or receipts and any payments so made shall in no way impart the obligations of any surety or sureties furnished under this Contract.

Withholding of any amount due the Owner, under general and/or special conditions regarding "Liquidated Damages," shall be deducted from the final payment due the Contractor.

All sentences of Article 5.07 of the General Conditions shall remain and govern the contract as stipulated.

SC.33 WAGE RATES

All employees of the Contractor on the work to be performed under this contract shall be paid the prevailing wage scale in this locality for work of similar character, and in no event less than the rates shown in the schedule of minimum wage rates furnished in these Special Conditions.

SC.34 EQUAL EMPLOYMENT OPPORTUNITY

During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin. The Contractor shall take affirmative action to insure that applicants are employed, that employees are treated during employment without regard to their race, color, sex, religion, age or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees or applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (b) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants shall receive consideration for employment without regard to race, color, religion, sex, national origin or age.
- (c) The Contractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided, advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (d) The Contractor shall include the provisions of this section in all subcontracts pertaining to the work.

SC.35 SUPERINTENDENCE BY CONTRACTOR

The Contractor shall have on the project at all times, as his agent, a competent Superintendent capable of reading and of thoroughly understanding the plans and specifications and thoroughly experienced in the type of work being performed. The Superintendent shall have full authority to execute orders or directions and to promptly supply such materials, equipment, tools, labor and incidentals as may be required. Such superintendence shall be furnished regardless of the amount of the work subcontracted.

SC.36

INSPECTION

The word "Inspection" or other forms of the word, as used in the contract documents for this project shall be understood as meaning the representative of the Village of Salado will observe and check the construction in sufficient detail to satisfy himself that the work is proceeding in general accordance with the contract documents, but he will not be a guarantor of the Contractor's performance.

SC.37

SHOP DRAWINGS

Contractor shall submit shop drawings in accordance with the following:

All shop drawings submitted by subcontractors for review by the Owner shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.

The Contractor shall check all subcontractor's shop drawings regarding measurements, size of members, materials, and details to satisfy himself that they conform to the intent of the Drawings and Specifications. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission thereof.

All details on shop drawings submitted for review shall show clearly the relation of the various parts to the main members and lines of the structure, and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted for review.

The review of shop drawings, samples or product data by the Engineer shall not relieve the Contractor from his/her responsibility with regard to the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the Engineer will have no responsibility therefor.

No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the review of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to reviewed shop drawings and data shall be at the Contractor's risk. The Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

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

Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work sections, of the Specifications, so that the

installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

Seven (7) copies of each shop drawing shall be submitted for review. Each shop drawing shall be legible and shall be on sheets no larger than 11" x 17".

SC.38 TRADE NAMES AND MATERIALS

Where materials or equipment are specified by a trade or brand name, it is not the intention of the Owner to discriminate against any equal product of another manufacturer, but rather to set a definite standard of quality or 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. Unless otherwise specified all materials shall be of the best of their respective kinds, shall be in all cases fully equal to approved samples and shall never have been used for any temporary purpose whatsoever. 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 specifically designated shall be used, unless a substitute shall be approved in writing before installation.

SC.39 TESTING OF MATERIALS

Testing and control of construction materials and methods used in the work shall be done by an approved local commercial laboratory employed and paid directly by the Owner, or other approved personnel employed by the Owner. Where a commercial laboratory is used, all representative testing caused by test failure will be accomplished at the Contractor's expense.

SC.40 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 other contractors.

SC.41 EXISTING UTILITIES AND SERVICE LINES

The Contractor shall be responsible for the protection of all existing utilities or service lines crossed or exposed by his construction operations. Where existing utilities or service lines are cut, broken, or damaged, the Contractor shall replace or pay for replacement of the utilities or service lines with the same type of original construction, or better, at his own cost and expense.

SC.42 EXISTING STRUCTURES

The plans show the location 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 locations. 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 require the building of special work, provisions for which are not made in these plans and proposal, in which case the provisions in these specifications for extra work shall apply.

SC.43 CONNECTIONS TO EXISTING FACILITIES

Connections to existing facilities which are in service shall be thoroughly planned in advance, and all required equipment, materials and labor shall be on hand at the time of undertaking the connections. Work shall proceed continuously (around the clock if necessary) to complete connections in the minimum time. Operations of valves or other appurtenances on existing utilities, when required, shall be by or under direct supervision of the Owner.

The Contractor should anticipate that the length of time for various connections, disconnections and modifications will be minimal. Also, the time of day when connections and disconnections may be accomplished will generally be during periods of low flow. The Contractor should plan his construction sequence and schedule accordingly.

SC.44 PROPERTY LINES AND MONUMENTS

The Contractor shall protect all property corner markers, and when any such markers or monuments are in danger of being disturbed they shall be properly referenced and if disturbed shall be reset at the expense of the Contractor.

SC.45 USE OF EXPLOSIVES

Use of explosives will not be allowed.

SC.46 LINES AND GRADES

All work under this Contract shall be constructed with the lines and grades of the existing bridge structure. The full responsibility for holding to alignment and grade shall rest upon the Contractor.

The Contractor shall stockpile excavation and other materials as to cause no inconvenience in the use of the lines and grades given. He shall remove any obstruction created by him contrary to this provision.

SC.47 ACCESS TO PROJECT SITE AND RIGHT-OF-WAY

The Contractor shall provide at its expense all improvements and make suitable provisions for ingress and egress. The Contractor also shall provide at its expense necessary all weather access roads to the project location as required for transporting equipment and materials.

If additional area is needed by the Contractor, it shall be the responsibility of the Contractor to make all necessary arrangements and pay all costs associated with the acquisition and utilization of such area.

Specific right-of-way easement arrangements between the Owner and property owners include restrictions that may affect the Contractor’s construction operations. These restrictions are summarized on a sheet included in the plans.

SC.48 BARRICADES, LIGHTS AND WATCHMEN

The Contractor shall, at his own cost and expense, furnish and erect such barricades, fences, lights and danger signals, shall provide such watchmen, and shall provide such other precautionary measures for the protection of persons or property and of work as are necessary. There shall be no open trenches not properly barricaded at the end of each workday. Barricades shall be painted in a color that will be visible at night. From sunset to sunrise, the Contractor shall furnish and maintain sufficient lights at each barricade and sufficient numbers of barricades shall be erected to keep vehicles from being driven on or into any work under construction. The Contractor shall furnish watchmen in sufficient numbers to protect the work.

The Contractor will be held responsible for all damage due to failure of barricades, signs, lights and watchmen. The Contractor's responsibility for the maintenance of barricades, signs and lights, and for providing watchmen shall not cease until the project has been accepted by the Owner.

SC.49 PROTECTION OF TREES AND LANDSCAPING

No trees or landscaping shall be removed or cut without the Owner’s approval except those that provide direct interference with the installation of the utility line within the permanent and temporary easements. The Contractor shall use proper caution to minimize removal of trees within the temporary easement. Trees adjacent to the permanent and temporary easements, but not interfering with the work, shall be protected from damage by the construction operations.

SC.50 LIGHTS AND POWER

The Contractor shall provide, at his own expense, temporary lighting and power facilities required for the proper prosecution of the work.

SC.51 WATER FOR CONSTRUCTION AND TESTING

The Contractor shall make the necessary arrangements for securing and transporting all water required in the construction.

SC.52 TRENCH SAFETY SYSTEM

Contractor shall provide a trench safety system which conforms to OSHA Standards. The trench safety system shall meet all the requirements of Trench Safety Requirements Section of the Technical Specifications.

SC.53 TOOLS AND ACCESSORIES

The Contractor shall, unless otherwise stated in the specifications, furnish with each type, kind or size of equipment, one (1) complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain, or repair the equipment. Ordinary mechanic's tools are not considered special tools. Such special tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Each piece of equipment shall be provided with a substantial name plate, securely fastened in place and clearly inscribed with the manufacturer's name, year or manufacture, and principal rating data.

SC.54 PROJECT MAINTENANCE

The Contractor shall maintain, and keep in good repair, the improvements covered by these plans and specifications during life of this contract.

SC.55 FENCES, IMPROVEMENTS AND DRAINAGE CHANNELS

Fencing and gates removed to permit construction shall be replaced in the same location and left in a condition as good as, or better, than that in which they were found. Fences to be removed and not replaced are noted on the plans.

Where surface drainage channels, storm sewers, or drainage structures are disturbed or altered during construction, they shall be restored to their original condition as soon as possible.

SC.56 DISPOSAL OF WASTE AND SURPLUS EXCAVATION

All trees, stumps, slashings, brush or other debris removed from the site as a preliminary to the construction shall be chipped or removed from the property. No burning will be allowed. No trash, debris or refuse from construction shall exist on the ground.

All excavated earth in excess of that required for backfilling shall be disposed of in a satisfactory manner in locations approved by the Owner.

SC.57

CLEANUP

The Contractor shall at all times keep the job site as free from all material, debris and rubbish as is practical and shall remove same from any portion of the job site as construction of that portion is completed.

Upon completion of the work, the Contractor shall remove from the site all plant, materials, tools and equipment belonging to him and leave the site with an acceptable appearance. The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver over such materials and equipment in a bright, clean, polished and new-appearing condition.

SC.58

ARCHEOLOGICAL DISCOVERIES

No activity which may affect a State Archeological Landmark is authorized until the Owner has complied with the provisions of the Antiquities Code of Texas. The Owner has previously coordinated with the appropriate agencies and impacts to known cultural or archeological deposits have been avoided or mitigated. However, the Contractor may encounter unanticipated cultural or archeological 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, and the Texas Historical Commission, (512-463-6096). The Contractor shall take reasonable steps to protect and preserve the discoveries until they have been inspected by the Owner. 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.

Compensation to the Contractor, if any, for lost time or changes in construction resulting from the find, shall be determined in accordance with changed or extra work provisions of the Contract Documents.

SC.59

SERVICE OF MANUFACTURER'S REPRESENTATIVE

The contract price for the project shall include the cost of furnishing competent and experienced representatives from the manufacturers involved. Such representatives shall assist the Contractor, when required, to install, adjust, and test the equipment in conformity with the contract documents. After the equipment is placed in permanent operation by the Village of Salado, such representatives shall make all adjustments and tests as specified or required to comply with the contract documents, and shall instruct the Owner in the operation and maintenance of the equipment.

SC.60 FINAL FIELD TESTS

Upon completion of the work and prior to final payment, all items installed under this contract shall be subject to acceptance tests as specified or required to provide compliance with the contract documents.

SC.61 AS-BUILT DIMENSIONS AND DRAWINGS

As-built dimensions and drawings will not be required for this project.

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

SECTION G01 - CONSTRUCTION WITHIN RIGHT-OF-WAY OF HIGHWAYS, COUNTY ROADWAYS, CITY STREETS AND RAILROADS

G01.01 DESCRIPTION OF WORK

This section of the specifications shall govern unless otherwise specified in applicable permits, the installation of pipelines along and across the rights-of-way of highways, roadways, and city streets.

G01.02 CONSTRUCTION IN TEXAS DEPARTMENT OF TRANSPORTATION RIGHTS-
OF-WAY

- A. Pipelines to be placed across rights-of-way of the Texas Department of Transportation (TxDOT) shall be installed as shown on the plans and as specified herein.
- B. Encasement pipe shall be installed under the highway by boring in accordance with details shown on the plans. The pipe shall be installed with even bearing throughout its length, and all voids between the earth and encasement pipe shall be filled with grout. The pipe shall be tightly jointed to prevent leakage.
- C. The Contractor shall notify TxDOT of his construction schedule not less the 5 days prior to commencing work within the right-of-way. The Contractor shall conform to the requirements of TxDOT as to details of construction methods and time of construction. All construction equipment must be kept well off the highway pavement unless otherwise approved by TxDOT.
- D. Where encasement of carrier pipe is required to be installed under highways, streets, or other facilities by jacking of boring methods, construction shall be made in a manner that will not interfere with the operation of the highway, or other facility, and will not weaken or damage any embankment or structure. During construction operations, barricades and lights to safeguard traffic and pedestrians shall be furnished and maintained, as required, until such time as the backfill has been completed and then shall be removed from the site.
- E. The Contractor shall take the proper precautions to avoid excavating earth or rock or shattering rock beyond the limits of excavation needed to install the conduit. All damages by excavating and blasting either of surface or subsurface structures, shall be repaired or replaced by the Contractor at his own cost and expense.
- F. The removal of any obstruction that may be found to conflict with the placing of this pipe will not be measured for payment or paid for as separate contract pay item. The removal of any such obstruction will be included in such contract pay items as are provided in the proposal and contract.

CONSTRUCTION IN RIGHTS-OF-WAY OF COUNTY ROADS AND CITY STREETS

- A. Pipelines may be placed along and across county roads, city streets and private driveways by the open cut method, unless designated otherwise on the plans. However, the Contractor shall at all times, keep a sufficient width of the roadway clear of dirt and other material to allow free flow on one lane of traffic. It shall be the responsibility of the Contractor to build and maintain all weather by-passes and detours, if necessary, and to furnish all flagmen and to properly light, barricade and mark all by-passes and detours that might be required on and across the roadways involved in this project. Barricades, construction signs and warning lights shall conform to TxDOT and Public Transportation Standards of Construction.
- B. The Contractor shall make every effort to complete construction and allow immediate access to adjacent property at all driveway entrances located along the roadways or streets. Owners or tenants of improvements where access and/or entrance drives are located shall be notified at least eight (8) hours prior to the time the construction will be started at their drive-ins or entrances and informed as to the length of time driveways will be closed, which period shall not exceed six (6) hours.
- C. The Contractor shall be responsible for all road and entrance reconstruction, and repairs and maintenance of same, for a period of one year from the date of such reconstruction. In the event the repairs and maintenance are not made immediately, and it becomes necessary for the City to make such repairs, the Contractor shall reimburse the City for the cost of such repairs.
- D. Backfill in trenches within the rights-of-way of county roads and city streets shall be placed in accordance with requirements of the agency having jurisdiction of such roads or streets, and according to the various applicable sections of these specifications which govern the installation of the pipelines. Before completion of the proposed work, all roadway shoulders, slopes, ditches and berms shall be restored to their original condition.

MEASUREMENT AND PAYMENT

No separate payment will be made for items included in this section. All related costs shall be included in the proper item of the Proposal and Bid Schedule.

END OF SECTION

GENERAL REQUIREMENTS

SECTION G02 - SITE CONDITIONS

G02.01 SUBSURFACE INFORMATION

- A. No Subsurface investigations have been made by the Owner. The Contractor shall be responsible for any subsurface explorations and tests he deems necessary.

G02.02 SITE INVESTIGATION AND REPRESENTATION

- A. The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, river/stream stages, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.
- B. The Contractor further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site, as well as from information presented herein as a part of these Contract Documents. Any failure by the Contractor to acquaint himself with all the available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the work. Neither the Owner nor the Engineer assume responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner or the Engineer.
- C. Existing ground profiles shown on the Plans were plotted from field surveys.

G02.03 RESPONSIBILITY FOR UTILITY PROPERTIES AND SERVICE

- A. Known utilities and structures adjacent to or encountered in the work are shown on the Drawings. The locations shown are taken from existing records and the best information available from existing plans; however, it is expected that there may be some discrepancies and omissions in the locations and quantities of utilities and structures shown. Those shown are for the convenience of the Contractor only, and no responsibility is assumed by either the Owner or the Engineer for their accuracy or completeness.

- B. Neither the Owner nor his officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.
- C. The Contractor shall at all times provide unobstructed access to fire hydrants, underground conduit, manholes, and water or gas valve boxes.
- D. Where the Contractor's operations could cause damage which might result in considerable expense, loss, and inconvenience when his operations are adjacent to or near railway, telegraph, telephone, television, power, oil, gas, water, sewer, irrigation, or other systems, no operations shall be commenced until the Contractor has made all arrangements necessary for the protection of these utilities and services.
- E. The Contractor shall notify all utility offices that are affected by the construction operation at least 15 days in advance of commencing construction operations. The Contractor shall not expose any utility without first obtaining permission from the affected agency. Once permission has been granted, locate and, if necessary, expose and provide temporary support for all existing underground utilities in advance of operations.
- F. The Contractor shall be solely and directly responsible to the Owners and operators of such utility properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage that may result from the construction operations under this Contract.
- G. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, the Contractor shall promptly notify the proper authority and cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no event shall interruption of any water or utility service be allowed unless prior approval is granted by the owner of the utility.
- H. The Contractor shall replace, at his own expense, any and all other existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract Documents.
- I. Where existing utility lines or structures are so located as to physically conflict with permanent structures to be constructed under this Contract, the conflicting utility line or structure shall be permanently relocated. Such relocations shall be considered as required by this Contract.
- J. The Contractor shall give immediate notice to the Engineer, the Owner and the owner of the utility (where applicable) when a physical conflict is determined to exist. The actual relocation of a public utility will be accomplished by the owner of the utility at his expense unless otherwise

specified in these Contract Documents. Any delays resulting from the required relocations of the utilities are the responsibility of the Contractor.

- K. Where existing utility lines or structures are so located as to interfere with the Contractor's prosecution of the work, but do not physically conflict with completed manholes or other permanent structures to be constructed under this Contract, any modification, alteration, or relocation of interfering utility, either permanent or temporary, shall be accomplished at the expense of the Contractor.
- L. The Contractor shall give immediate notice to the Engineer and the Owner of the utility when an interference is determined to exist and shall obtain approval to relocate such utility or to discontinue service therein from the Engineer and the owner of the utility. The owner of the utility shall have the right to do all work required to discontinue, relocate, and replace interfering utilities and charge the Contractor for all costs thereof. When approved by the Engineer and the owner of the utility, all work required to discontinue, relocate, and replace interfering utilities may be done by, or arranged for, by the Contractor. All such discontinuance, relocation, and replacement shall be accomplished in accordance with all requirements of the owner of the utility.
- M. When notified by the Contractor that an interference or conflict has been determined to exist, the Owner and the Engineer will determine whether such interference shall be considered as required by construction or as incidental to construction.

G02.04

INTERFERING STRUCTURES

- A. Take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground. An attempt has been made to show major structures on the Plans. While the information has been compiled from the best available sources, it's completeness and accuracy cannot be guaranteed, and it is presented as a guide to avoid known possible difficulties.
- B. Protect existing structures from damage, whether or not they lie within the right-of-way or the limits of the easements obtained by the Owner. Where existing structures must be removed to properly carry out the work, or are damaged during the work, they shall be restored at the Contractor's own expense to at least their original condition and to the satisfaction of the Engineer.
- C. The Contractor may, with the approval of the Engineer and without additional compensation, remove and replace in a condition as good as or better than original, any small interfering structures such as fences and signposts that interfere with the Contractor's operations.

G02.05 FIELD RELOCATION

- A. During the progress of the work, minor relocations of the work may be necessary. Such relocations shall be made only by direction of the Engineer and the Owner. If existing structures are encountered that will prevent construction as shown, notify the Engineer before continuing with the work in order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor shall fail to notify the Engineer when an existing structure is encountered and proceeds with the work despite this interference, he shall be responsible for any damage that may occur.

G02.06 LAND MONUMENTS

- A. The Contractor shall preserve or replace any existing Federal, State, County, City, and private land monuments encountered. All monument replacement by the Contractor shall be performed by a land surveyor licensed in the State of Texas.

G02.07 PAYMENT

- A. The work specified in this Section shall be considered incidental and payment will be included as part of the appropriate lump sum or unit prices specified in the Proposal and Bid Schedule.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION C1 – CONCRETE STRUCTURES

C1.01 SCOPE OF WORK

- A. This specification covers the requirements for the construction of all types of structures involving the use of structural concrete, except where the requirements are waived or revised by other governing specifications.
- B. All concrete structures shall be constructed in accordance with the design requirements and details shown on the Plans; in conformity with the pertinent provisions of the items contracted for; the incidental items referred to; and in conformity with the requirements herein.

C1.02 SUBMITTALS

- A. Within 30 days after the Notice to Proceed, the Contractor shall submit to the Engineer or the City for approval, technical product literature including the type of concrete, concrete mix design, concrete type and Manufacturer of precast structures, a description of curing methods used, and all other pertinent data to illustrate conformance to the specification found within.

C1.03 MATERIALS

A. Concrete

- 1. All concrete shall conform to the provisions of Section C2, CONCRETE FOR STRUCTURES. The class of concrete for each type of structure or unit shall be as specified on the Plans, or by pertinent governing specifications.

B. Expansion Joint Material

- 1. Preformed Fiber Material - Preformed fiber expansion joint material shall be one-half (½) inch or as shown on the Plans. At the Contractor's option, the material shall be one of the following types, unless otherwise noted on the Plans:
 - a. "Preformed Bituminous Fiber Material" shall meet the requirements of the Standard Specifications for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction, ASTM Designation: D1751.
 - b. "Preformed Non-Bituminous Fiber Material": shall meet the requirements of the Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction ASTM Designation: D1751, except that the requirements pertaining to bitumen content, density and water absorption shall be voided.
- 2. Joint Sealing Material - Unless otherwise noted on the Plans, the sealer shall be synthetic polymer Sikaflex – ICSL or equivalent.
- 3. Asphalt Board - Asphalt Board shall consist of two liners of 0.016 inches asphalt impregnated paper, filler with a mastic mixture of asphalt and vegetable fiber and/or mineral filler. Boards shall be smooth, flat and sufficiently rigid to permit installation. When tested in accordance with Test Method Tex-524-C, the asphalt board shall not deflect from the horizontal more than one (1) inch in three and one half (3 ½) inches.
- 4. Rebonded Neoprene Filler - Rebonded neoprene filler shall consist of ground closed-cell neoprene particles, rebonded and molded into sheets of uniform thickness of the dimensions shown on Plans.

Filler material shall meet the requirements of ASTM Designations: D1752 Type 1 where applicable.

- C. Expansion Joints - Joints and devices to provide for expansion and contraction shall be constructed as indicated herein or on the Plans.
- D. Placing Reinforcements - Reinforcement in concrete structures shall be placed carefully and accurately and rigidly supported as provided in the Section C7 – REINFORCING STEEL.
- E. Placing Concrete-General - The minimum temperature of all concrete at the time of placement shall not be less than 50°F.
- F. The consistency of the concrete as placed should allow the completion of all finishing operations without the addition of water to the surface. When conditions are such that additional moisture is needed for finishing, the required water shall be applied to the surface by Fog Spray Only, and shall be held to a minimum amount. Fog spray for this purpose may be applied with hand operated fogging equipment.
- G. The maximum time interval between the addition of cement to the batch, and the placing of concrete in the forms shall not exceed the following:

Air or Concrete Temperature	Maximum Time (Without Retarding Agent)	Maximum Time (With Retarding Agent)
Non-Agitated Concrete		
Up to 80° F	30 Minutes	45 Minutes
Over 80° F	15 Minutes	30 Minutes
Agitated Concrete		
90° F or above	45 Minutes	75 Minutes
Above 75° F to 89° F	60 Minutes	90 Minutes
75° F and below	90 Minutes	120 Minutes

- H. Upon completion of the final finish, interim curing will be required for slab concrete in bridge decks and top slabs of direct traffic culverts as follows:
 - 1. Unless otherwise shown on the Plans, Type 1 membrane curing compound (Resin Base Only) shall be applied to the slab surface.
- I. Required water curing shall begin as soon as it can be done without damaging the concrete finish.
- J. The Contractor shall notify the City two (2) days in advance before placing concrete in any unit of the structure to permit the inspection of forms, reinforcing steel placement, and other preparations. Concrete shall not be placed in any unit prior to the completion of form work and placement of reinforcement therein.
- K. Concrete mixing, placing and finishing shall be done in daylight, hours, unless adequate provisions are made to light the entire site of all operations.
- L. Concrete placement will not be permitted when impending weather conditions will impair the quality of the finished work. If rainfall should occur after placing operations are started, the Contractor shall provide ample coverage to protect the work. In case of drop in temperature, the provisions set forth in Section C1.04- PLACING CONCRETE IN COLD WEATHER shall apply.
- M. The sequence of placing concrete shall be as provided on the Plans or as required herein. The placing shall be regulated so the pressures caused by the plastic concrete shall not exceed the loads used in the form design. Form design shall be the sole responsibility of the Contractor.

- N. The method of handling, placing, and consolidation of concrete shall minimize segregation and displacement of the reinforcement, and produce a uniformly dense and compact mass. Concrete shall not have a free fall of more than 5 feet, except in the case of thin walls such as in culverts. Any hardened concrete splatter ahead of the plastic concrete shall be removed.
- O. The method and equipment used to transport concrete to the forms shall be capable of maintaining the rate of placement approved by the City. Concrete may be transported by bucket, chutes, buggies, belt conveyors, pumps or other acceptable methods.
- P. Each part of the forms shall be filled by depositing concrete as near its final position as possible. The coarse aggregate shall be worked back from the face and the concrete forced under and around the reinforcement bars without displacing them. Depositing large quantities at one point and running or working it along the forms will not be allowed.
- Q. Concrete shall be deposited in the forms in layers of suitable depth but not more than 36-inches in thickness, unless otherwise directed by the City.
- R. The sequence of successive layers or adjacent portions of concrete shall be such that they can be vibrated into a homogeneous mass with the previously placed concrete without a cold joint. Not more than one hour shall elapse between adjacent or successive placements of concrete. Unauthorized construction joints shall be avoided by placing all concrete between the authorized joints in one continuous operation.
- S. An approved retarding agent shall be used to control stress cracks, and/or unauthorized cold joints in mass placements where differential settlement and/or setting time may induce stress cracking, such as on false work, in deep girder stems, etc.
- T. Openings in forms shall be provided, if needed, for the removal of laitance or foreign matter of any kind.
- U. All forms shall be wetted thoroughly before the concrete is placed therein.
- V. All concrete shall be well consolidated and the mortar flushed to the form surfaces by continuous working with immersion type vibrators. Vibrators which operate by attachment to forms or reinforcement will not be permitted, except on steel forms.
- W. The concrete shall be vibrated immediately after deposit. Prior to the beginning of work, a systematic spacing of the points of vibrations shall be established to insure complete consolidation and thorough working of the concrete around the reinforcement, embedded fixtures, and into the corners and angles of the forms. Immersion type vibrators shall be inserted vertically, at points 18 to 30-inches apart, and slowly withdrawn. The vibrator may be inserted in a sloping or horizontal position in shallow slabs. The entire depth of each lift shall be vibrated, allowing the vibrator to penetrate several inches into the preceding lift. Concrete along construction joints shall be thoroughly consolidated by operating the vibrator along and close to but not against the joint surface. The vibration shall continue until thorough consolidation, and complete embedment of reinforcement and fixtures is produced, but not long enough to cause segregation. Vibration may be supplemented by hand spading or rodding, if necessary, to insure the flushing of mortar to the surface of all forms.

C1.04

PLACING CONCRETE IN COLD WEATHER

- A. Cast-in-Place Concrete - Concrete may be placed when the atmospheric temperature is not less than 35° F. Concrete shall not be placed in contact with any material coated with frost or having a temperature less than 32° F.
- B. Aggregates shall be free from ice, frost and frozen lumps. When required, in order to produce the minimum specified concrete temperature, the aggregate and/or the water shall be heated uniformly, in accordance with the following:

The water temperature shall not exceed 180° F nor shall the aggregate temperature exceed 150° F. The heating apparatus shall heat the mass of aggregate uniformly. The temperature of the mixture of aggregates and water shall be between 50° F and 85° F before introduction of the cement.

C. All concrete shall be effectively protected as follows:

1. The temperature of slab concrete of all unformed surfaces shall be maintained at 50° F or above for a period of 72 hours from time of placement and above 40° F for an additional 72 hours.
2. The temperature at the surface of all concrete in bents, piers, culvert walls, retaining walls, parapets, wingwalls, bottom of slabs, and other similar formed concrete shall be maintained at 40° F or above for a period of 72 hours from time of placement.
3. The temperature of all concrete, including the bottom slabs of culverts placed on or in the ground, shall be maintained above 32° F for a period of 72 hours from time of placement.

D. Protection shall consist of providing additional covering, insulated forms or other means, and if necessary, supplementing such covering with artificial heating. Curing as specified under Section C1.10- CURING CONCRETE, shall be provided during this period until all requirements for curing have been satisfied.

E. When impending weather conditions indicate the possibility of the need for such temperature protection, all necessary heating and covering material shall be on hand ready for use before permission is granted to begin placement.

C1.05 PLACING CONCRETE IN HOT WEATHER

A. When the temperature of the air is above 85° F, an approved retarding agent will be required in all concrete used in superstructures, top slabs of direct traffic culverts, and will be required in all cased drilled shafts regardless of temperature. No concrete will be placed any time the temperature of the concrete at placement, exceeds 90° F. Ice will be used to decrease the temperature of concrete. The general formula will be, five (5) pounds of ice per yard of concrete per degree of temperature drop.

C1.06 PLACING CONCRETE IN WATER

A. Concrete shall be deposited in water only when specified on the Plans or with written permission of the City. The forms, cofferdams or caissons shall be sufficiently tight to prevent any water current passing through the space in which the concrete is being deposited. Pumping will not be permitted during concrete placing, nor until it has set for at least 36 hours.

B. The concrete shall be placed with a tremie, closed bottom-dump bucket, or other approved method, and shall not be permitted to fall freely through the water nor shall it be disturbed after it has been placed. Its surface shall be kept approximately level during placement

C. The tremie shall consist of a water-tight tube 14-inches or less in diameter. It shall be constructed so that the bottom can be sealed and opened after it is in place and fully charged with concrete. It shall be supported so that it can be easily moved horizontally to cover all the work area and vertically to control the concrete flow.

D. The placing operations shall be continuous until the work is complete.

C1.07 PLACING CONCRETE IN BOX CULVERTS

A. In general, construction joints will be permitted only where shown on the Plans.

B. Where the top slab and walls are placed monolithically in culverts more than four (4) feet in clear height, an interval of not less than one (1) nor more than two (2) hours shall elapse before placing the top slab to allow for shrinkage in the wall concrete.

- C. The base slab shall be finished accurately at the proper time to provide a smooth uniform surface. Top slabs which carry direct traffic shall be finished as specified under Item 360 "Concrete Pavement" of the Standard Specifications for the Construction of Highways Streets and Bridges of Texas Department of Transportation, latest addition. Top slab of fill type culverts shall be given a reasonable smooth float finish.

C1.08 PLACING CONCRETE IN FOUNDATIONS AND SUBSTRUCTURE

- A. Concrete shall not be placed in footings until the depth and character of the foundation has been inspected by the City and permission has been given to proceed.
- B. Placing of concrete footings upon seal courses will be permitted after the caissons of cofferdams are free from water and the seal course cleaned. Any necessary pumping or bailing during the concrete operation shall be done from a suitable pump located outside the forms.
- C. All temporary walls or braces inside cofferdams or caissons shall be constructed or adjusted as the work proceeds to prevent unauthorized construction joints in footings or shafts.
- D. When footings can be placed in a dry excavation without the use of cofferdams or caissons, forms may be omitted, if desired by the Contractor and approved by the City, and the entire excavation filled with concrete to the elevation of the top of footing.

C1.09 TREATMENT AND FINISHING OF HORIZONTAL SURFACES

- A. All unformed upper surfaces shall be struck off to grade and finished. The use of mortar topping for surfaces under this classification will not be permitted.

C1.10 CURING CONCRETE

- A. The Contractor shall inform the City fully of the methods and procedures proposed for curing; shall provide the proper equipment and material in adequate amounts, and shall have the proposed method, equipment and material approved prior to placing concrete.
- B. Inadequate curing and/or facilities therefore shall be cause for the City to stop all construction on the job until remedial action is taken.
- C. All concrete shall be cured for a period of four (4) curing days except as noted herein.

C1.11 EXCEPTIONS TO 4-DAY CURING

- A. When the air temperature is expected to drop below 35° F, the water curing mats shall be covered with polyethylene sheeting, burlap-polyethylene blankets or other material to provide the protection required by Section C1.04- PLACING CONCRETE IN COLD WEATHER.
- B. A curing day is defined as a calendar day when the temperature, taken in the shade away from artificial heat, is above 50° F for at least 19 hours, (or colder days are satisfactory if provisions are made to maintain the temperature at all surfaces of the concrete above 40° F for the entire 24 hours). The required curing period shall begin when all concrete therein has attained its initial set.
- C. The following methods are permitted for curing concrete subject to the restrictions and the following requirements for each method of curing.
 - 1. Form Curing - When forms are left in contact with the concrete, other curing methods will not be required except for cold weather protection.
 - a. Wet Mat - Cotton mats shall be used for this curing method. They shall be placed as soon as possible after the surface has sufficiently hardened to prevent damage to the concrete. Damp burlap blankets made from nine (9) ounce stock may be placed on

the damp concrete surface for temporary protection prior to the application of the cotton mats which may be placed dry and wetted down after placement.

The mats shall be weighted down adequately to provide continuous contact with all concrete surfaces where possible. The surfaces of the concrete shall be kept wet for the required curing time. Surfaces which cannot be cured by contact shall be enclosed with mats, anchored positively to the forms, or to the ground, so that outside air cannot enter the enclosure. Sufficient moisture shall be provided inside the enclosure to keep all surfaces of the concrete wet.

- b. Water Spray - This method shall consist of overlapping sprays or sprinklers that keep all unformed surfaces continuously wet.
 - c. Ponding - This method required the covering of the surfaces with a minimum of two (2) inches of clean granular material, kept wet at all times, or a minimum of one (1) inch depth of water. Satisfactory provisions shall be made to provide a dam to retain the water or saturated sand.
2. Membrane Curing - Unless otherwise provided herein or shown on the Plans, either Type 1 or Type 2 membrane curing compound may be used where permitted.
- a. For substructure concrete, only one (1) type of curing compound will be permitted on any one (1) structure. (Material requirements and construction methods shall be as required by Section C6 – MEMBRANE CURING except as changed herein.) Membrane shall be applied in a single, uniform coating at the rate of coverage recommended by the Manufacturer and as approved by the City, but not less than one (1) gallon per 180 square feet of area. Tests for acceptance shall be at this specified rate.
 - b. Membrane curing shall not be applied to dry surfaces, but shall be applied just after free moisture has disappeared. Formed surfaces and surfaces which have been given a first rub shall be dampened and shall be moist at the time of applications of the membrane.
 - c. When membrane is used for complete curing, the film shall remain unbroken for the minimum curing period specified. Membrane which is damaged shall be corrected immediately by reapplication of membrane. Unless otherwise noted herein or on the Plans, the choice of membrane type shall be at the option of the Contractor, except that the City may require the same curing method for like portions of a single structure.

C1.12 REMOVAL OF FORMS AND FALSEWORK

- A. Except as herein provided, forms for vertical surfaces may be removed when the concrete has aged not less than one (1) day when Type I or Type II cement is used, and not less than one-half ($1/2$) day when Type III cement is used, provided it can be done without damage to the concrete.

C1.13 DEFECTIVE WORK

- A. Any defective work discovered after the forms have been removed shall be repaired as soon as possible in accordance with Section C1.14- FINISHING EXPOSED SURFACES.
- B. If the surface of the concrete is bulged, uneven or shows excess honeycombing or form marks, which in the opinion of the City, cannot be repaired satisfactorily, the entire section shall be removed and replaced at the expense of the Contractor.

C1.14 FINISHING EXPOSED SURFACES

- A. Ordinary Surface Finish - An Ordinary Surface Finish shall be applied to all concrete surfaces either as a final finish or preparatory to a higher grade or class of finish. Higher grades and classes of finish

shall be in accordance with the Plans, Standards or Special Conditions. Where neither a grade nor class of finish is specified, and Ordinary Surface Finish, only, will be required.

B. Ordinary Surface Finish shall be provided as follows:

1. After form removal, all porous or honeycombed areas and spalled areas shall be corrected by chipping away all loose or broken material to sound concrete.
2. Featheredges shall be eliminated by cutting a face perpendicular to the surface. Shallow cavities shall be repaired using adhesive grout or epoxy grout. If judged repairable by the Engineer or the City, large defective areas shall be corrected using concrete or other material approved by the City.
3. Holes and spalls caused by removal of metal ties, etc., shall be cleaned and filled with adhesive grout or epoxy grout. Exposed parts of metal chairs on surfaces to be finished by rubbing, shall be chipped out to a depth of one-half ($1/2$) inch and the surface repaired.
4. All fins, runs, dips or mortar shall be removed from surfaces which remain exposed. Form marks and chamfer edges shall be smoothed by grinding and/or dry rubbing.

C1.15

PAYMENT

- A. No separate payment shall be made for work performed in accordance with this section of the specifications, and the cost thereof shall be included in the proper items of the Bid Schedule.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION C2 – CONCRETE FOR STRUCTURES

C2.01 SCOPE OF WORK

- A. This specification covers the requirements for concrete related materials used for the storing and handling of concrete related materials; and for the proportioning and mixing of concrete for bridges, culverts, pre-stressed concrete, and incidental concrete construction.

C2.02 SUBMITTALS

- A. Within 30 days after the Notice to Proceed, the Contractor shall submit to the Engineer or the City for approval, technical product literature including the type of concrete, concrete mix design, concrete type and Manufacturer of precast structures, a description of curing methods used, and all other pertinent data to illustrate conformance to the specification found within.

C2.03 GENERAL

- A. The concrete shall be composed of Portland cement, aggregates (fine and coarse), admixtures if desired or required, and water, proportioned and mixed as hereinafter provided.
1. Cement - The cement shall be either Type, I, II, or III Portland Cement conforming to ASTM Designation : C150
 2. Mortar (Grout) - Mortar for repair of concrete, shall consist of 1 part cement, two (2) parts finely graded sand, and enough water to make the mixture plastic. When required to prevent color difference, white cement shall be added to produce the color required. When required by the City, latex adhesive shall be added to the mortar.
 3. Admixtures - Calcium Chloride will not be permitted. Unless otherwise noted, Air-entraining, retarding and water reducing admixtures may be used in all concrete and shall conform to the requirements of the Standard Specification for Construction of Highways, Streets, and Bridges of the Texas Department of Transportation, latest edition.

C2.04 CLASSIFICATION AND MIX DESIGN

- A. It shall be the responsibility of the Contractor to furnish the mix design, using a Coarse Aggregate Factor acceptable to the City, for the class(es) of concrete specified. The mix shall be designed by a qualified concrete technician to conform with the requirements contained herein and in accordance with current Texas Department of Transportation standards. The Contractor shall perform, at his own expense, the work required to substantiate the design. Complete concrete design data shall be submitted to the City for approval.
- B. It shall also be the responsibility of the Contractor to determine and measure the batch quantity of each ingredient, including all water, so that the mix conforms to these specifications and any other requirements shown on the Plans.
- C. In lieu of the above mix design responsibility, the Contractor may accept a design furnished by the City, however, this will not relieve him of providing concrete meeting the requirements of these specifications.

C2.05 QUALITY OF CONCRETE, GENERAL

- A. The concrete shall be uniform and workable. The cement content, maximum allowable water cement ratio, the desired and maximum slump and the strength requirements of the various classes of concrete shall conform to the requirements of Tables 1 - 4 and as required herein.

Table 1

Concrete Designation	Desired Slump	Max. Slump
Structural Concrete		
(1) All Drill Shaft	6	7
(2) Uncased Drilled Shafts, Thin-Walled Sections (9" or less), and Prestressed Concrete Members	4	5
(3) Slabs, Caps, Columns, Piers, Wall Sections Over 9", etc.	3	4
Underwater or Seal Concrete	6	7
Riprap, Curb, Gutter and Other Miscellaneous Concrete	As specified by City	

NOTE: NO CONCRETE WILL BE PERMITTED WITH SLUMP IN EXCESS OF THE MAXIMUMS SHOWN.

B. Coarse Aggregate

Coarse aggregate shall be washed and shall consist of durable particles of gravel, crushed blast furnace slag, crushed stone, or combinations thereof and shall be free from frozen material or injurious amounts of salt, alkali, vegetable matter, or other objectionable material either free or as an adherent coating. When white portland cement is specified, the coarse aggregates used in the concrete shall be light colored. Quality shall be reasonably uniform throughout. Coarse aggregate shall not contain more than 0.25 percent by weight of clay lumps, nor more than one (1) percent by weight of shale, nor more than five (5) percent by weight of laminated and/or friable particles when tested in accordance with Test Method Tex-413-A. Coarse aggregate from each source shall have a wear of not more than 40 percent when tested in accordance with Test Method Tex-410-A.

Unless otherwise shown on the Plans, coarse aggregate from each source will be subjected to five (5) cycles of both the sodium sulfate and the magnesium sulfate soundness test in accordance with Test Method

Tex-411-A. When the loss is greater than 12-percent with sodium sulfate and/or 18 percent with magnesium sulfate, further testing will be required prior to acceptance or rejection of the material. A satisfactory record under similar conditions of service and exposure will be considered in the evaluation of material failing to meet these requirements.

When tested in accordance with Test Method Tex-401-A, the coarse aggregate, including combinations of aggregates when used, shall conform to the gradation requirements shown in Table 2.

Table 2
COARSE AGGREGATE GRADATION CHART

Percent Retained on Each Sieve										
Aggregate Grade No.	Nominal Size in.	2- ¹ / ₂ in.	2 in.	1- ¹ / ₂ in.	1 in.	³ / ₄ in.	¹ / ₂ in.	³ / ₈ in.	No. 4	No. 8
1	2	0	0-20	15-50		60-80			95-100	
2 (467)*	1- ¹ / ₂		0	0-5		30-65		70-90	95-100	
3	1- ¹ / ₂		0	0-5		10-40	40-75		95-100	
4 (57)*	1			0	0-5		40-75		90-100	95-100
5 (67)*	¹ / ₄				0	0-10		45-80	90-100	95-100
6 (7)*	¹ / ₂					0	0-10	30-60	85-100	95-100
7	³ / ₈						0	5-30	75-100	
8	³ / ₈						0	0-5	35-80	90-100

* Numbers in parenthesis indicate that these gradations conform to corresponding ASTM gradation in ASTM C33.

C. Fine Aggregate

Fine Aggregate shall be washed and consist of clean, hard, durable and uncoated particles of natural or Manufactured sand or a combination thereof, with or without a mineral filler. When white Portland cement is specified the fine aggregate used in the concrete shall be light colored. It shall be free from frozen material or injurious amounts of salt, alkali, vegetable matter or other objectionable material and it shall not contain more than 0.5-percent by weight of clay lumps. When the aggregate is subjected to the color test for organic impurities in accordance with Test Method Tex-408-A, the test result shall not show a color darker than standard.

Unless otherwise shown on the Plans, the acid insoluble residue of fine aggregate used in concrete subject to direct traffic shall be not less than 60 percent by weight when tested in accordance with Test Method Tex-612-J.

When tested in accordance with Test Method Tex-401-A, the fine aggregate or combinations of aggregates, including mineral filler shall conform to the gradation requirements shown in Table 3.

Table 3
FINE AGGREGATE GRADATION CHART

Percent Retained on Each Sieve								
Aggregate Grade No.	³ / ₈ in.	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
1	0	0-5	0-20	15-50	35-75	65-90	90-100	97-100

1. Where manufactured sand is used in lieu of natural sand, the percent retained on the No. 200 sieve shall be 94 to 100.
2. Where the sand equivalent value is greater than 85, the retainage on the No. 50 sieve may be 65 to 94 percent.
3. Fine aggregate will be subjected to the Sand Equivalent Test (Test Method Tex-203-F). The sand equivalent shall not be less than 80 unless otherwise shown on the Plans.
4. For all classes of concrete, except class K, the fineness modulus shall be between 2.30 and 3.10 as determined by Test Method Tex-402-A. The fineness modulus for class K shall be 2.6 to 2.8 unless otherwise shown on the Plans.

Table 4
SLUMP REQUIREMENTS

Class of Conc.	Sacks of Cement per C. Y.	Min. Comp Strength 28 (f'c) 28 Day psi	Min Beam Strength 7 Day	Max. Water Cement Ratio gal/sack	Coarse Aggr. No.
A	5.0	3000	425 390 (3)	6.5	1-2-3-4-8 (1) (4)
B	4.5	2500	300	8.0	2-3-4-5-6-7
C	6.0	3600	510	6.0	1-2-3-4-5-
D	3.0	1500	215	11.0	2-3-4-5-6-7
E	6.0	3000	425	6.0	2-3-4-5
S	6.5	4000	570 525 (3)	5.0	2-3-4-5
P	5.0	NA	555 (2)	6.25	2-3
DC	8.75	5500	720	3.6	6
CO	7.0	4600	640	4.5	6
SS	7.0	3600	510	5.5	3-4-5

1. Grade 8 aggregate for use in extended course, unless a larger size is approved by the Engineer or City.
2. Minimum running average of concrete pavement.
3. When Type II or Type I / II is cement is used.
4. Unless otherwise permitted by the Engineer, Grade I coarse aggregate may only be used in massive foundations with four (4) inch minimum clear spacing between reinforcing steel bars. Grade I aggregate may not be used in Drill Shafts.

CLASS OF CONCRETE	TYPICAL USAGE
A	Drill Shafts, Culverts, (except top of slab of Direct Traffic Culverts), Inlets, Manholes, Headwalls, Approach Slabs, Curb, Gutter, Curb and Gutter, Concrete Retards, Sidewalks, Driveways, Concrete Pavement, Back-up Walls and Anchors.
B	Rip Rap, Small Roadside Signs, and Anchors
C	Drilled Shafts, Bridge Substructures, Bridge Railing, Culverts (except top of slab of Direct Traffic Culverts), Wing Walls, Approach Slabs, Concrete Traffic Barriers
D	Rip Rap
E	Seal Concrete
S	Bridge Slab, Top Slab of Direct Traffic Culvert, Bridge Sub-structure
P	Concrete Pavement
DC	Dense Concrete Overlay
CO	Concrete Overlay
SS	Slurry Displacement Shafts, Underwater Drill Shafts

C2.06 MIXING CONDITIONS

- A. The concrete shall be mixed in quantities required for immediate use. Retempering of concrete will not be permitted.
- B. In threatening weather, which may result in conditions that will adversely affect quality of the concrete to be placed, the City may order postponement of the work. Where work has been started and changes in weather conditions require protective measures, the Contractor shall furnish adequate shelter to protect the concrete against damage from rainfall, or freezing temperatures. If necessary to continue operations during rainfall, the Contractor shall also provide protective coverings for the material stock piles. Aggregate stock piles need to be covered only to the extent necessary to control the moisture conditions in the aggregates to adequately control the consistency of the concrete.

C2.07 PLACING, CURING AND FINISHING

- A. The placing of concrete, including construction of forms and falsework, curing and finishing, shall be in accordance with Section C1- CONCRETE STRUCTURES, and Section C1.14- FINISHING EXPOSED SURFACES.

C2.08 PAYMENT

- A. No separate payment shall be made for work performed in accordance with this section of the specifications, and the cost thereof shall be included in the proper items of the Proposal and Bid Schedule.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION C3 - REINFORCING STEEL

C3.01 SCOPE OF WORK

- A. This specification covers the requirements for the furnishing and placing of reinforcing steel, deformed and smooth, of the size and quantity designated on the Plans and in accordance with these specifications.

C3.02 SUBMITTALS

- A. Within 30 days after the Notice to Proceed, the Contractor shall submit to the Engineer or the City for approval, technical product literature including the type of steel, mill test results, cut list as required by Contract, Plans or Details, type and Manufacturer of spacers and/or chairs, and all other pertinent data to illustrate conformance to the specification found within.

C3.03 MATERIALS

- A. Unless otherwise designated on the Plans, all bar reinforcement shall be deformed, and shall conform to one of the following:

1. ASTM A 615, Grades 40 or 60 open hearth, basic oxygen, or electric furnace new billet steel.
2. ASTM A617, Grades 40 or 60, axle steel.
3. ASTM A616, Grade 60, rail steel will be permitted in concrete pavement only. ASTM A616 bars shall be furnished as straight bars only and bending is prohibited. Bend tests will not be required.
4. ASTM A706, Grade 60, weldable reinforcing steel.
5. Smooth Bars for concrete pavement shall have a minimum yield strength of 60 ksi.

All other smooth bars, larger than No. 4, may be steel conforming to the above or may be furnished in any steel that meets the physical requirements of ASTM A36.

6. Spiral reinforcement shall be in accordance with TxDOT Item 440 of the Standards Specifications for Construction of Highways, Streets and Bridges and be either smooth or deformed bars, or wire, of the minimum size or gage shown on the plans, or as specified herein.

Bars for spiral reinforcement shall comply with ASTM A675, Grade 80 (reference to ASTM A29 is voided) A615 or A617, Grade 40, unless otherwise shown on the plans. Smooth wire shall comply with ASTM A82 and deformed wire shall comply with ASTM A496.

7. Wire for fabric reinforcement shall be in accordance with TxDOT Item 440 of the Standard Specifications for Construction of Highways, Streets and Bridges and conform to ASTM A82 or A496. Wire fabric shall conform to ASTM A185 or A497.
8. Epoxy coating material and the material used for the repair of the coating shall be in accordance with TxDOT Item 440 of the Standard Specifications for Construction of Highways, Streets and Bridges.

C3.04

BENDING

- A. The reinforcement shall be bent cold, true to the shapes shown on the plans. Fabrication shall preferably be done in the shop. Field fabrication, if permitted, shall be done with equipment approved by the Engineer. Misfabricated, damaged or broken bars shall be rejected and replaced at the Contractor's expense. Damaged or broken bars imbedded in a previous concrete placement may be repaired with the approval of the Engineer. The inside diameter, unless otherwise shown on the plans, shall be in accordance with TxDOT Item 440 of the Standard Specifications for Construction of Highways, Streets and Bridges.

C3.05

TOLERANCES

- A. Fabricating tolerances for bars, from plan dimensions, shall not be greater than shown in Figure 1 of TxDOT Item 440 of the Standard Specifications for Construction of Highways, Streets and Bridges.

C3.06

STORING

- A. Steel reinforcement shall be stored above the surface of the ground upon platforms, skids, or other supports and shall be protected as far as practical from mechanical injury and surface deterioration caused by exposure to conditions producing rust. When placed in the work, reinforcement shall be free from dirt, paint, grease, oil, or other foreign materials. Reinforcement shall be free from injurious defects such as cracks and laminations. Rust, surface seams, surface irregularities or mill scale will not be cause for rejection, provided the minimum dimensions, cross-sectional area and tensile properties of a hand wire brushed specimen meets the physical requirements for the size and grade of steel specified.

C3.07

SPLICES

- A. The splicing of bars, except when provided on the Plans, or specified herein, will not be permitted without written approval of the City.
- B. Splices not provided for on the plans will be permitted in slabs 15 inches or less in thickness, columns, walls and parapets, but will not be included for measurement, and subject to the following:
- C. Unless otherwise approved by the City, splices will not be permitted in bars 30 feet or less in plan length. For bars exceeding 30 feet in plans length, the distance center to center of splices shall not be less than 30 feet minus one splice length, with no more than one individual bar length less than 10 feet. Lap splices no shown on the plans, but permitted herein, shall be made in accordance with TABLE C3-1. The specified concrete cover and proper spacing shall be maintained at such splices and the lap spliced bars placed in contact and securely tied together.

TABLE C3-1 – Minimum Lap Requirements for Bar Sizes Through No. 11

SIZE	LAP LENGTH	
	UNCOATED	COATED
No. 3	1'-0"	1'-6"
No. 4	1'-6"	2'-3"
No. 5	1'-10"	2'-9"
No. 6	2'-3"	3'-4"
No. 7	3'-0"	4'-6"
No. 8	3'-9"	5'-7"
No. 9	4'-8"	7'-0"
No. 10	5'-7"	8'-4"
No. 11	6'-7"	9'-10"

Spiral steel shall be lapped a minimum of one turn. Bar sizes No. 14 and No. 18 may not be lapped.

- D. Welded splices shall conform to the requirements of the plans and TxDOT Item 448, "Structural Field Welding", of the Standard Specifications for Construction of Highways, Streets and Bridges. End preparation for butt welding reinforcing bars shall be done in the field. Delivered bars shall be of sufficient length to permit weld preparation.
- E. Welded wire fabric shall be spliced using a lap length that will include the overlap of a minimum of two (2) cross wires plus two (2) inches on each sheet or roll. Splices using bars which develop equivalent strength and lapped in accordance with TABLE 7-1 will be permitted.
- F. For box culvert extensions with less than one (1) foot of fill, the existing longitudinal bars shall have a lap with the new bars as shown in Table 1. For extensions with more than one (1) foot of fill, a minimum of six (6) inch lap will be required.

C3.08

MECHANICAL COUPLERS

- A. When shown on the plans, or approved by the City, mechanical splices may be made in the reinforcing steel bars in accordance with TxDOT Item 440 of the Standard Specifications for Construction of Highways, Streets and Bridges.

C3.09

PLACING

- A. Reinforcement shall be placed as near as possible in the position shown on the Plans. Unless otherwise shown on the Plans, dimensions shown for reinforcement are to the centers of the bars. In the plane of the steel parallel to the nearest surface of concrete, bars shall not vary from plan placement by more than one-twelfth ($1/12$) of the spacing between bars. In the plane of the steel perpendicular to the nearest surface of concrete, bars shall not vary from plan placement by more than one-quarter inch. Cover of concrete to the nearest surface of steel shall meet the above requirements but shall never be less than one and a half ($1\frac{1}{2}$) inches.
- B. Vertical stirrups shall always pass around the main tension members and be attached securely thereto. The reinforcing steel shall be spaced its required distance from the form surface by means of approved galvanized metal spacers, metal spacers with plastic coated tips, stainless steel spacers, plastic spacers, or approved pre-cast mortar or concrete blocks. For approval of plastic spacers on a project, representative samples of the plastic shall show no visible indications of deterioration after immersion in a five (5) percent solution of sodium hydroxide for 120 hours.
- C. All reinforcing steel shall be tied at all intersections, except that where spacing is less than one (1) foot in each direction in which case reinforcing site shall be tied at alternate intersections. For reinforcing steel cages for other structural members, the steel shall be tied at a sufficient number of intersections to provide a rigid cage of steel.
- D. Before any concrete is placed, all mortar, mud, dirt, etc. shall be cleaned from the reinforcement. Precast mortar or concrete blocks to be used for holding steel in position adjacent to formed surfaces shall be cast in molds meeting the approval of the City and shall be cured by covering with wet burlap or cotton mats for a period of 72 hours. Mortar for blocks shall contain approximately one (1) part portland cement to three (3) parts sand. Concrete for blocks shall contain nine (9) sacks of portland cement per cubic yard of concrete.
- E. The blocks shall be cast in the form of a frustum of a cone or pyramid with the smaller face placed against the forms.
- F. A suitable tie wire shall be provided in each block, to be used for anchoring to the steel. Except in unusual cases, and when specifically otherwise authorized by the City, the size of the surface to be placed adjacent to the forms shall not exceed two and one-half ($2\frac{1}{2}$) inches square or the equivalent thereof in cases where circular or rectangular areas are provided. Blocks shall be cast accurately to the thickness required, and the surface to be placed adjacent to the forms shall be a true plane free of surface imperfections.

- G. Reinforcement shall be supported and tied in such manner that a sufficiently rigid cage of steel is provided. If the cage is not adequately supported to resist settlement or floating upward of the steel, overturning of truss bars, or movement in any direction during concrete placement, permission to continue concrete placement will be withheld until corrective measures are taken. Sufficient measurements shall be made during concrete placement to insure compliance with the first paragraph of the Article.
- H. Mats of wire fabric shall overlap each other sufficiently to maintain a uniform strength and shall be fastened securely at the ends and edges.
- I. No concrete shall be deposited until the City has inspected the placement of the reinforcing steel and given permission to proceed. If the reinforcement is not adequately supported or tied to resist settlement, floating upward, overturning of truss bars, or movement in any direction during concrete placement, concrete placement will be halted until corrective measures are taken.

C3.10

EPOXY COATING OF REINFORCING STEEL

- A. When shown on the plans, coating with epoxy of reinforcing bars, plain wire, deformed wire or welded wire fabric to be used as reinforcement of concrete shall conform to the requirements of TxDOT Item 440 of the Standard Specifications for Construction of Highways, Streets and Bridges.

C3.11

PAYMENT

- A. No separate payment shall be made for work performed in accordance with this section of the specifications, and the cost thereof shall be included in the proper items of the Proposal and Bid Schedule.

END OF SECTION

TECHNICAL SPECIFICATIONS

SECTION C4 – CONCRETE CURB AND GUTTER

C4.01 SCOPE OF WORK

- A. This specification covers the requirements for constructing concrete curb and gutter as shown on the Plans and specified herein.

C4.02 SUBMITTALS

- A. Within 30 days after the Notice to Proceed, the Contractor shall submit to the Engineer or the City for approval, technical product literature including concrete mix design, expansion joint material, curing method, and all other pertinent data to illustrate conformance to the specification found within.

C4.03 GENERAL

- A. “Concrete Curb and Gutter” shall consist of Portland cement combined concrete curb and gutter or separate concrete approved subgrade or foundation material in accordance with these specifications, in conformity with the lines and grades and details shown on the Plans.

C4.04 MATERIALS

- A. Unless otherwise specified on the Plans, materials and proportions for concrete used in construction under this item shall conform to the requirements as specified for Class “A” concrete under Section C2- CONCRETE FOR STRUCTURES. Reinforcing steel shall conform to the requirements as specified in Section C7- REINFORCING STEEL. Expansion joint filler shall be pre-molded material meeting the requirements specified in Section C1- CONCRETE STRUCTURES.

C4.05 EQUIPMENT

- A. If either, required by the Plans or Details, requested by the City or chosen by the Contractor, the curb and gutter shall be machine laid by an extrusion machine approved by the City. When machine laid curb and gutter is used for a project, the line for the top of curb shall be maintained from a guideline set by the Contractor from survey points as established by the Plans, details or contract. The forming tube of the extrusion machine shall be readily adjustable vertically during the forward motion of the machine, to provide the required variable height of the curb and gutter necessary to conform to the established gradeline. In order to provide a continual monitor to the proposed grade of the curb and gutter, a pointer or gauge shall be attached to the machine in such a manner that a comparison can be made between the curb and the guideline. Other methods may be used if prior approval is granted by the City.

C4.06 CONSTRUCTION METHODS

- A. The subgrade or foundation shall be excavated and shaped to line, grade and cross section, and, if considered necessary in the opinion of the City, hand tamped and sprinkled. If dry, the subgrade or foundation material shall be sprinkled lightly immediately before concrete is deposited thereon.
- B. Outside forms shall be of wood or metal, of a section satisfactory to the City, straight, free of warp and of a depth equal to the depth of the curb and gutter. They shall be securely staked to line and grade, and maintained in a true position during the depositing of concrete. Inside forms for the curb shall be of approved material, shall be of such design as to provide the curb required and shall be rigidly attached to the outside forms. Where specifically permitted by the City in writing, the Contractor may place concrete curb and gutter with an extrusion machine.
- C. The reinforcing steel shall be placed in position as shown on the typical sections. Care shall be exercised to keep all steel in its proper locations.

- D. Concrete for curb and gutter shall be mixed in a manner satisfactory to the City. The curb and gutter shall be poured in sections of the length indicated on the Plans, and each section shall be separated by a pre-molded or board joint of cross section specified of the curb and gutter and of the thickness indicated on the Plans. In the event the curb and gutter is placed by an extrusion machine the approved mix shall be fed into the machine in such a manner and consistency that the finished curb and gutter will present a well compacted mass with a surface free from voids and honeycombs. It shall be true to the established shape, line and grade. Any additional surface finishing specified and/or required shall be performed immediately after extrusion.
- E. After the concrete has been struck off and after it has become sufficiently set, the exposed surfaces shall be thoroughly worked with a wooden float. The exposed edges shall be rounded by the use of an edging tool to the radius indicated on Plans. Unless specified otherwise on the Plans, when the concrete in the curb and gutter has become sufficiently set, the inside form shall be carefully removed and the surface shall be plastered with a mortar consisting of one part of Portland cement and two (2) parts fine aggregate. The mortar shall be applied with a template or "mule" made to conform to curb and gutter dimensions as shown on the Plans. All exposed surfaces of curb and gutter, or gutter, shall be brushed to a smooth and uniform surface.
- F. The completed curb and gutter shall be cured in accordance with the requirements of Section C6- MEMBRANE CURING, Type 2, white pigmented, unless shown otherwise on the Plans. Other methods of curing as outlined in Section C1- CONCRETE STRUCTURES will be acceptable with a required curing period of 72 hours.
- G. The curb and gutter shall be backfilled, to the full height of the concrete, tamped and sloped as directed. The curb shall not be backfilled until proper curing time has elapsed to prevent structural damage to the curb.
- H. Any damage to the curb or gutter shall be replaced or repaired at the option of the Engineer or the City at the sole expense of the Contractor.

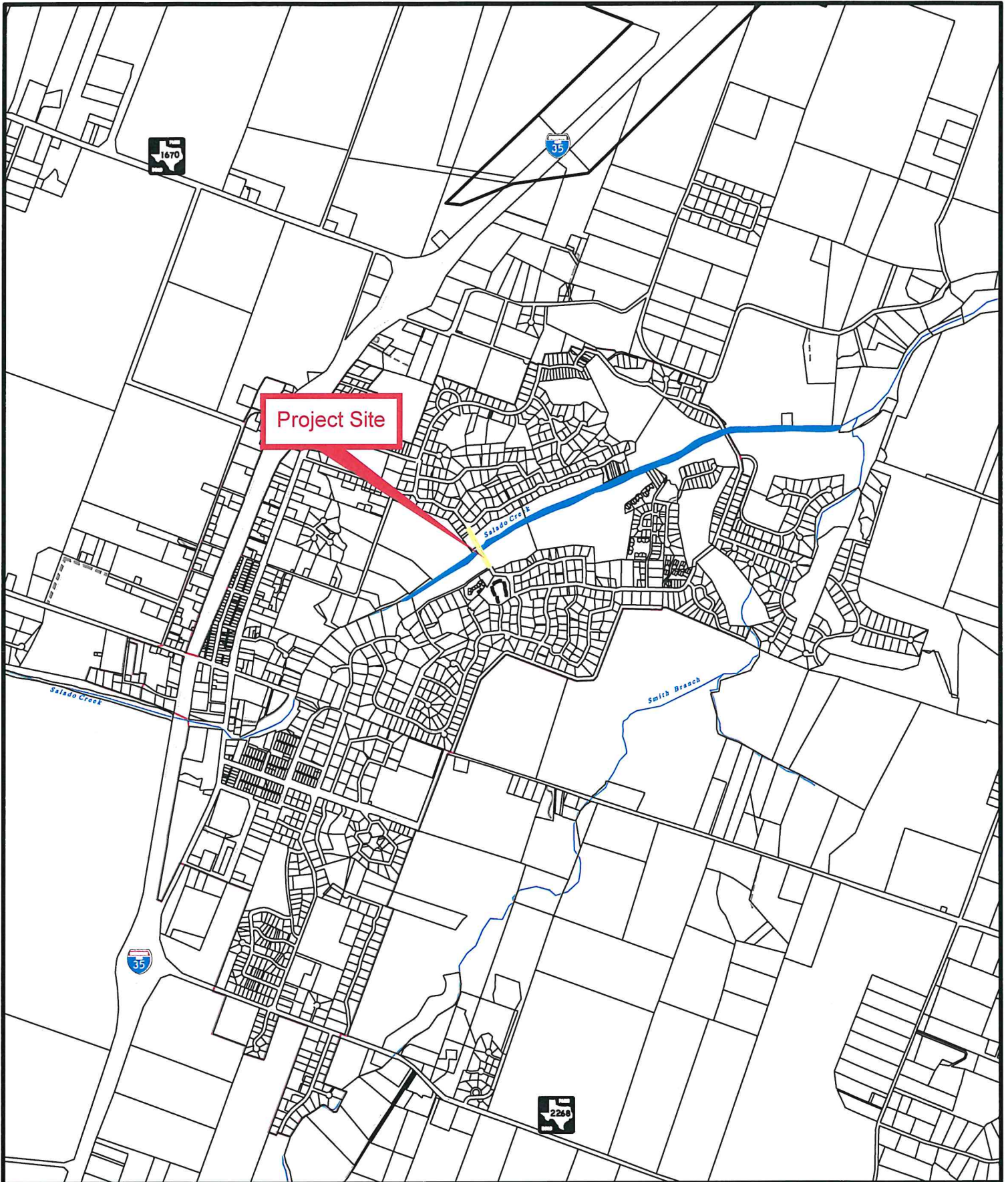
C4.07

PAYMENT

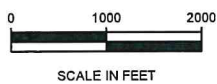
- A. Payment for furnished and installed concrete curb and gutter shall be paid according to the unit price per linear foot in the proper item of the Proposal and Bid Schedule. All work and materials to complete the concrete curb and gutter shall be subsidiary to this bid item.

END OF SECTION

APPENDIX A



South Ridge Sawtooth Curb Repair
Location Map

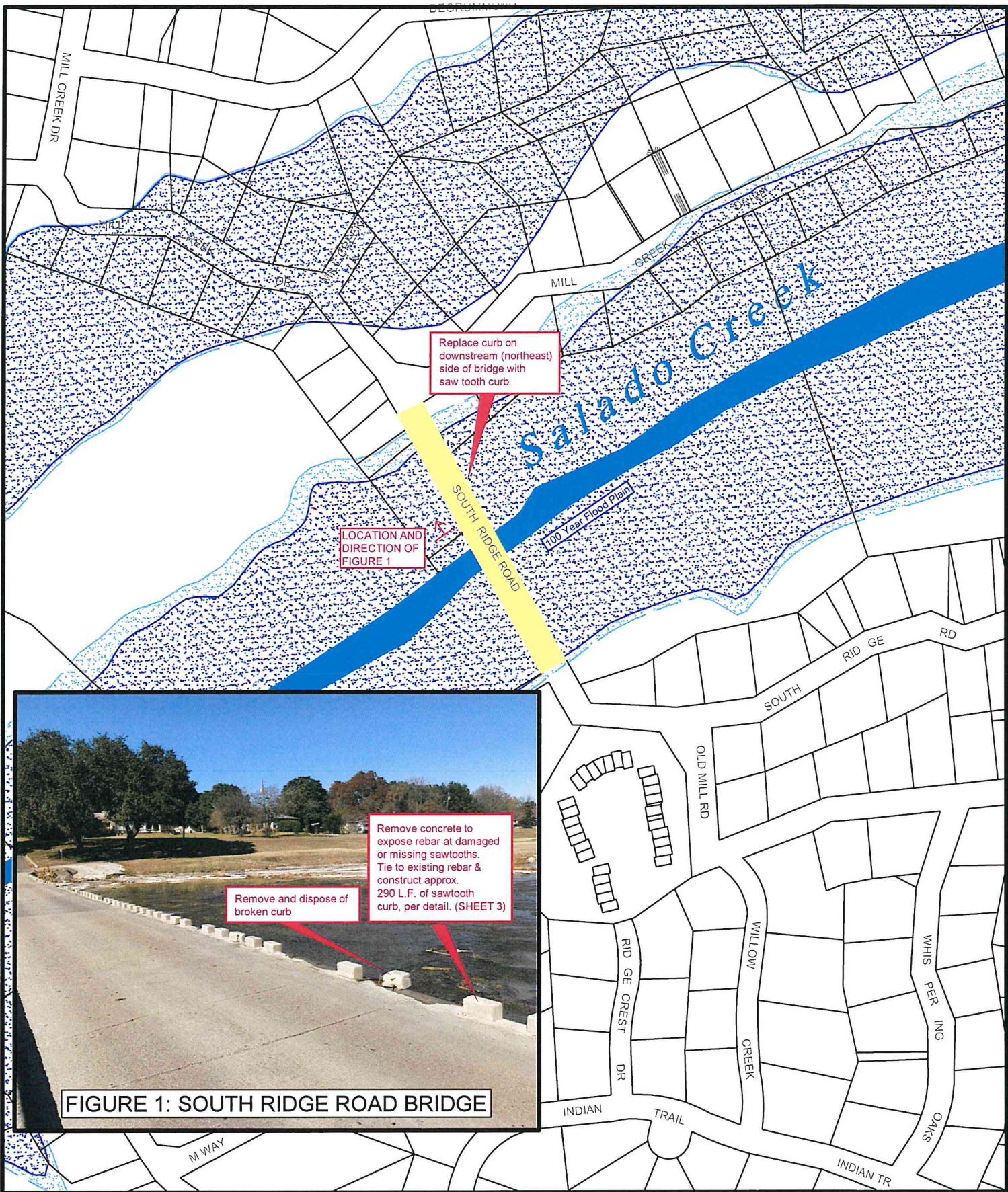


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CONSULTING ENGINEERS
TEMPLE, TEXAS 76501
Firm Registration No. F-510

SHEET 1



Village
of
Salado



Replace curb on downstream (northeast) side of bridge with saw tooth curb.

LOCATION AND DIRECTION OF FIGURE 1

Remove concrete to expose rebar at damaged or missing sawtooths. Tie to existing rebar & construct approx. 290 L.F. of sawtooth curb, per detail. (SHEET 3)

Remove and dispose of broken curb

FIGURE 1: SOUTH RIDGE ROAD BRIDGE

South Ridge Sawtooth Curb Repair
Location Map/Photo



SCALE IN FEET



SHEET 2

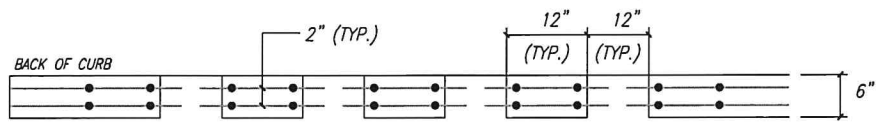


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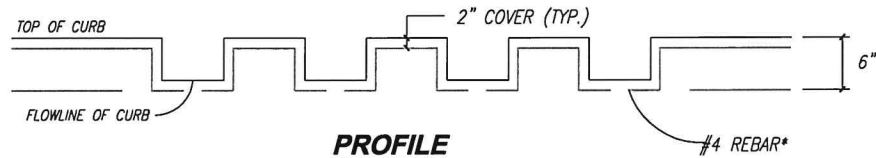
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Village
of Salado



PLAN



PROFILE

#4 REBAR*

* Tie to existing rebar in road

SAW TOOTH CURB & GUTTER DETAIL

NOT TO SCALE

GENERAL NOTES:

1. TRAFFIC CONTROL SHALL BE FURNISHED AND MAINTAINED BY THE VILLAGE OF SALADO.
2. ALL EXISTING BROKEN CURB WITHIN PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR.
3. CONCRETE SHALL BE CLASS 'A' WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 psi (28-DAY).
4. ALL OTHER SURFACES THAT ARE CHIPPED OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR. CONTRACTOR IS ENCOURAGED TO VIDEOTAPE PROJECT SITE PRIOR TO BEGINNING CONSTRUCTION.
5. EXPANSION JOINTS SHALL BE INSTALLED A MAXIMUM OF EVERY 40- FEET. CONSTRUCTION JOINTS SHALL BE SPACED A MAXIMUM OF EVERY 10- FEET.
6. ALL CONSTRUCTION FOR THIS PROJECT SHALL GENERALLY CONFORM TO THE REQUIREMENTS OF THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES (2004 EDITION) UNLESS EXCEPTED OR NOTED ON THESE PLANS.
7. CONTRACTOR SHALL MAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THESE CONSTRUCTION OPERATIONS ARE TO BE REPAIRED IMMEDIATELY BY THE CONTRACTOR TO AT LEAST THE PREEXISTING CONDITION AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF HIS MATERIALS AND EQUIPMENT FROM THEFT, VANDALISM, ANIMALS, FIRE, ETC., WHILE SAID MATERIALS AND EQUIPMENT ARE ON THE PROJECT WHETHER STORED OR INSTALLED IN PLACE, UNTIL THE PROJECT HAS BEEN ACCEPTED BY THE VILLAGE OF SALADO.
9. UPON COMPLETION OF THE PROJECT, THE SITE(S) AS DEFINED HEREIN, SHALL BE CLEANED OF ALL DEBRIS AND LEFT IN A NEAT AND PRESENTABLE CONDITION.
10. TYPE 2 MEMBRANE CURING COMPOUND (WHITE PIGMENTED) SHALL BE USED FOR THIS PROJECT.
11. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH THE REQUIREMENTS OF TxDOT ITEM 526 "MEMBRANE CURING".
12. ALL REINFORCING STEEL FOR CONCRETE SHALL MEET ASTM A 615, GRADE 60.
13. ALL CONSTRUCTION OPERATIONS FOR THIS PROJECT SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA). COPIES OF THE OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE OBTAINED FROM OSHA: 903 SAN JACINTO; AUSTIN, TEXAS.
14. THESE PLANS, PREPARED BY KASBERG, PATRICK & ASSOCIATES, LP, DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR HIS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF KASBERG, PATRICK & ASSOCIATES, LP, REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THE WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE AND LIABLE FOR ALL JOB SITE SAFETY, FOR MANAGEMENT OF JOB SITE PERSONNEL, FOR SUPERVISION OF THE USE OF JOB SITE EQUIPMENT AND FOR DIRECTION OF ALL CONSTRUCTION PROCEDURES, METHODS AND ELEMENTS REQUIRED TO COMPLETE THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
16. IN ADDITION TO OTHER SAFETY REQUIREMENTS, ALL TRUCKS USED FOR HAULING MATERIAL AND/OR EQUIPMENT TO AND/OR FROM THIS PROJECT SHALL BE EQUIPPED WITH AN AUDIBLE BACKUP WARNING DEVICE THAT IS IN GOOD OPERATING CONDITION.
17. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING SANITARY FACILITIES ON THIS PROJECT FOR EMPLOYEES.
18. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS REGARDING EXCESS AND WASTE MATERIAL, INCLUDING METHODS OF HANDLING AND DISPOSAL.
19. CONTRACTOR SHALL LOCATE MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR TO PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS AND OTHER POTENTIALLY TOXIC MATERIALS.
20. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT CONSTRUCTION AREA AND THE ACTIONS TO BE TAKEN TO REMEDY THE PROBLEM.
21. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.
22. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.

South Ridge Sawtooth Curb Repair
Details



KASBERG, PATRICK & ASSOCIATES, LP
CONSULTING ENGINEERS
TEMPLE, TEXAS 76501
Firm Registration No. F-510





Figure 1 – View from Southeast End of Crossing



Figure 2 – Missing "Teeth" of Sawtooth Curb



Figure 3 – Missing “Teeth” of Sawtooth Curb



Figure 4 – Missing “Teeth” of Sawtooth Curb Near Northwest End of Crossing



Figure 5 – Missing “Teeth” of Sawtooth Curb Looking Back to the East



Figure 6 – View from East Side of Crossing Looking West