



JEFFERSON COUNTY PURCHASING DEPARTMENT
Deborah L. Clark, Purchasing Agent

1149 Pearl Street, Beaumont, TX 77701 409-835-8593 Fax 409-835-8456

October 29, 2012
Legal Notice

Dear Bidders:

You are invited to submit bids in accordance with specifications packet, Invitation for Bid (IFB 12-034/KJS), Sabine Pass Port Authority – Paving and Drainage Improvements (funded by Round 1 TDRA Grant Administered by The General Land Office of the State of Texas). All bids must be submitted with an original and three (3) copies to the Jefferson County Purchasing Agent, 1149 Pearl Street, 1st Floor, Beaumont, Texas 77701, no later than 11:00 AM, Tuesday, November 20, 2012. Bids will be publicly opened and read at that time.

Specifications and plans are available for no charge at the Jefferson County Purchasing web site: <http://www.co.jefferson.tx.us/Purchasing/main.htm>. A hard copy is available for a deposit of \$75.00 at LJA Engineering, Inc., 905 Orleans, Beaumont, TX 77701. Contact Suzanne Pate at 409-813-1862.

A Pre-Bid Conference will be held on November 13, 2012 at 1:00 PM CST. The conference will be held at the Jefferson County Courthouse, 1149 Pearl Street, Beaumont, TX 77701, in the Commissioners' Courtroom on the fourth floor.

The County shall require the bidder to furnish a bid security in the amount of five percent (5%) of the total contract cost. The bid bond must be executed with a surety company authorized to do business in the State of Texas. Within ten (10) days after the date of the signing of a contract, the bidder shall furnish a performance bond to the County for the full amount of the contract, if the contract exceeds one hundred thousand dollars (\$100,000). If the contract is for one hundred thousand dollars (\$100,000) or less, the County may provide that no money be paid to the contractor until completion and acceptance of the work or the fulfillment of the purchase obligation to the County.

All Bids shall be submitted to the Jefferson County Purchasing Agent in a sealed envelope marked:

BID NAME:	Sabine Pass Port Authority – Paving and Drainage Improvements
BID NO:	IFB 12-034/KJS
DUE DATE/TIME:	11:00 AM, November 20, 2012
MAIL OR DELIVER TO:	Jefferson County Purchasing Department 1149 Pearl Street, 1st Floor Beaumont, TX 77701

Sincerely,

A handwritten signature in black ink that reads "Deborah Clark".

Deborah L. Clark
Purchasing Agent

Publish: The Beaumont Enterprise and The Port Arthur News on October 31 and November 7, 2012

JEFFERSON COUNTY

TEXAS GENERAL LAND OFFICE ROUND 1 POST-IKE RECOVERY PROJECT

JEFFERSON COUNTY CONTRACT NO. DRS010219 SPPA PAVING AND DRAINAGE IMPROVEMENTS

**CONTRACT DOCUMENTS
OCTOBER 17, 2012
REVISION 2**



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Construction

Advertisement and Invitation for Bids

Jefferson County (Owner) will receive bids for Specially Authorized Public Facility Improvements-14, for Sabine Pass Port Authority until **11:00 am** on **Tuesday, November 20, 2012** at Commissioner's Court of Jefferson County, Texas, Purchasing Agents Office, 1st Floor, 11149 Pearl Street, Beaumont, Texas, 77701. The bids will be publicly opened and read aloud at that time. All bids must be submitted with an original and three (3) copies.

Bids are invited for several items and quantities of work as follows: **Paving and Drainage Improvements at Sabine Pass Port Authority.**

Bid/Contract Documents, including Drawings and Technical Specifications are available for no charge at the Jefferson County Purchasing website: <http://www.co.jefferson.tx.us/Purchasing/main.htm>.

Copies of the Bid/Contract Documents (11"x17" Project Drawings and Technical Specifications) may be obtained by depositing \$75 (seventy-five dollars) with, Jefferson County or LJA Engineering, Inc. for each set of documents obtained. Make checks payable to Jefferson County. The deposit will be refunded if the documents and drawings are returned in good condition within 10 calendar days following the bid opening, otherwise, the deposit will be forfeited to Jefferson County. If applicable, postage or delivery charges are to be paid by Bidder. To facilitate return of deposits, the documents must be returned to the location from which they were purchased, either to the Jefferson County Engineering office or to the LJA Engineering office.

A Pre-Bid Conference will be held on Tuesday, November 13, 2012 at 1:00PM CST. The conference will be held at the Jefferson County Courthouse, 1149 Pearl Street, Beaumont, TX 77701 in the Commissioners' Courtroom on the fourth floor.

The County shall require the bidder to furnish a bid security in the amount of five percent (5%) of the total contract cost. The bid bond must be executed with a surety company authorized to do business in the State of Texas. Within ten (10) days after the date of the signing of a contract, the bidder shall furnish a performance bond to the County for the full amount of the contract, if the contract exceeds one hundred thousand dollars (\$100,000). If the contract is for one hundred thousand dollars (\$100,000) or less, the County may provide that no money be paid to the contractor until completion and acceptance of the work or the fulfillment of the purchase obligation to the County.

Attention is called to the fact that not less than, the federally determined prevailing (Davis-Bacon and Related Acts) wage rate, and included by reference in these contract documents, must be paid on this project. In addition, the successful bidder must ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex age or national origin. Jefferson County reserves the right to reject any or all bids or to waive any informalities in the bidding.

Bids may be held by Jefferson County for a period not to exceed 90 calendar days from the date of the bid opening for the purpose of reviewing the bids and investigating the bidders qualifications prior to the contract award.

All contractors/subcontractors that are debarred, suspended or otherwise excluded from or ineligible for participation on federal assistance programs may not undertake any activity in part or in full under this project.

All Bids shall be submitted to the Jefferson County Purchasing Agent in a sealed envelope marked:

BID NAME:	Sabine Pass Port Authority – Paving and Drainage Improvements
BID NO:	IFB 12-034/KJS
DUE DATE/TIME:	11:00 AM, November 20, 2012
MAIL OR DELIVER TO:	Jefferson County Purchasing Department 1149 Pearl Street, 1st Floor Beaumont, TX 77701

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

No oral interpretations will be made to any bidder. Each request for an interpretation shall be made in writing to the Grant Recipient or engineer no less than seven (7) calendar days prior to the bid opening. 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 five (5) calendar days 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 bidders.

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 city/county will be justified in rejecting any claim based on lack of inspection of the site prior to the bid.

4. Alternate bid items

No alternate bids or bid items will be considered unless they are specifically requested by the technical specifications.

5. 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. Bid documents, including the bid, the bid bond, and the statement of bidders' qualifications shall be sealed in an envelope and clearly labeled with the words "Bid Documents", the project number, name of bidder and the date and time of bid opening.
- d. The Grant Recipient 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.

- e. If a contract is awarded, it will be awarded to a responsible bidder on the basis of the lowest/best bid and the selected alternate bid items, if any. The contract will require the completion of the work in accordance with the contract documents.

6. Bid Modifications Prior to Bid Opening

- a. Any bidder may modify his bid by telegraphic communication at any time prior to the scheduled closing time for receipt of bids, provided such telegraphic communication is received by the Grant Recipient prior to the closing time, and provided further, the Grant Recipient is satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the addition, subtractions or other modifications so that the final prices or terms will not be known by the Grant Recipient until the sealed bid is open. If written confirmation is not received within two (2) calendar days from the closing time, no consideration will be given to the telegraphic modification.
- b. Likewise, any bidder may modify a bid by submitting a supplemental bid in person prior to the scheduled closing time for receipt of bids. Such supplemental bid should mention only additions or subtractions to the original bid so as to not reveal the final prices or terms to the Grant Recipient until the sealed bid is open.

7. Bid Bond

- a. A bid bond in the amount of 5% of the bid issued by an acceptable surety shall be submitted with each bid. A certified check or bank draft payable to the Grant Recipient or negotiable U.S. Government Bonds (as par value) 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.

8. Statement of Bidders Qualifications

Each bidder shall submit on the form furnished for that purpose a statement of the bidder's qualifications. The Grant Recipient shall have the right to take such steps as it deems necessary to determine the ability of the bidder to perform his obligations under the contract, and the bidder shall furnish the Grant Recipient all such information and data for this purpose as it may request. The right is reserved to reject any bid where an investigation of the available data does not satisfy the Grant Recipient that the bidder is qualified to carry out properly the terms of the contract.

9. 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.

10. Corrections:

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

11. Time for Receiving Bids

Bids received prior to the advertised hour of opening shall be kept securely sealed. The officer appointed to open the bids shall decide when the 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 the satisfaction of the Grant Recipient 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.

12. Opening of Bids

The Grant Recipient 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.

13. 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 locality. 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.

14. Award of Contract/Rejection of Bids

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 Grant Recipient 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.

The Grant Recipient reserves the right to consider as unqualified to do the work any bidder who does not habitually perform with his own forces the major portions of the work involved in construction of the improvements embraced in this contract.

15. Execution of Agreement/Performance and Payment Bonds

Performance and Payment Bonds, Requires all prime contractors which enter into a formal contract in excess of \$25,000 with the State, any department, board, agency, municipality, county, school district or any division or subdivision thereof, to obtain a Payment Bond in the amount of the contract before commencing with work and a performance bond for public works contracts in excess of \$100,000.

The failure of the successful bidder to execute the agreement and supply the required bonds **within ten (10) calendar days** after the prescribed forms are presented for signature, or within such extended period as the Grant Recipient may grant, shall constitute a default and the Grant Recipient may, at its option either award the contract to the next lowest responsible bidder, or re-advertise for bids. In either case, the Grant Recipient 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 Grant Recipient for a refund.

16. Wages and Salaries

Attention is particularly called to the requirement of paying not less than the prevailing Davis Bacon Related Acts (DBRA) wage rates specified in the Contract Documents. These rates are minimums to be paid during the life of the contract. It is therefore the responsibility of the Bidder to inform themselves as to local labor conditions.

17. Equal Employment Opportunity

Attention is called to the requirements for ensuring that employees and applicants for employment are not discriminated against because of their race, color, creed, sex, gender, or national origin.

CITY /COUNTY OF _____

**STANDARD FORM OF AGREEMENT
FOR OWNER-CONTRACTOR PROJECTS**

STATE of TEXAS }

TRAVIS COUNTY }

THIS AGREEMENT, made and entered into this ____ day of _____, A.D. 20____, by and between the COUNTY of _____ Jefferson _____ in the STATE OF TEXAS, thereunto duly authorized so to do, Party of the First Part, hereinafter termed OWNER, and _____ of the City of _____ County of _____ in the State of Texas, Party of the Second Part, hereinafter termed CONTRACTOR.

WITNESSETH: That for and inconsideration 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 follow:

Paving And Drainage Improvements at Sabine Pass Port Authority.

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 materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said construction, in accordance with the Notice to Contractors, General and Special Conditions of Agreement, Plans and other drawings and printed or written explanatory matter thereof, and the Specifications and addenda therefore, as prepared by LJA Engineering, Inc, 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, the Performance and Payment Bonds hereto attached; all of which are made a part hereof and collectively evidence and constitute the entire contract.

The CONTRACTOR hereby agrees to commence work within ten (10) calendar days after the date written notice to do so shall have been given to him, and to **substantially complete within 60** consecutive calendar days after issuance of the "Notice to Proceed" and to be at **Final Completion within 75** consecutive calendar days after the issuance of the "Notice to Proceed", 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.

Party of the First Part (OWNER)

Party of the Second Part (CONTRACTOR)

By: _____

By: _____

ATTEST: _____

ATTEST: _____

GENERAL CONTRACT CONDITIONS FOR CONSTRUCTION

1. Contract and Contract Documents

- (a) The project to be constructed pursuant to this contract will be financed with assistance from the CDBG and is subject to all applicable Federal and State laws and regulations.
- (b) The Plans, Specifications and Addenda, hereinafter enumerated in Paragraph 1 of the Supplemental General Conditions shall form part of this contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth.

2. Definitions

Whenever used in any of the contract Documents, the following meanings shall be given to the terms here in defined:

- (a) The term "Contract" means the Contract executed between the Jefferson County, hereinafter called the Owner and _____, hereinafter called Contractor, of which these GENERAL CONDITIONS, form a part.
- (b) The term "Project Area" means the area within which are the specified Contract limits of the Improvements contemplated to be constructed in whole or in part under this contract.
- (c) The term "Engineer" means LJA Engineering, Inc., Engineer in charge, serving the Owner with engineering services, his successor, or any other person or persons, employed by the Owner for the purpose of directing or having in charge the work embraced in this Contract.
- (d) The term "Contract Documents" means and shall include the following: Executed Contract, Addenda (if any), Invitation for Bids, Instructions to Bidders, Signed Copy of Bid, General Conditions, Special Conditions, Technical Specifications, and Drawings (as listed in the Schedule of Drawings).

3. Supervision By Contractor

- (a) Except where the Contractor is an individual and gives his personal supervision to the work, the Contractor shall provide a competent superintendent, satisfactory to the Local Public Agency and the Engineer, on the work at all times during working hours with full authority to act for him. The Contractor shall also provide an adequate staff for the proper coordination and expediting of his work.
- (b) The Contractor shall lay out his own work and he shall be responsible for all work executed by him under the Contract. He shall verify all figures and elevations before proceeding with the work and will be held responsible for any error resulting from his failure to do so.

4. Subcontracts

- (a) The Contractor shall not execute an agreement with any subcontractor or permit any subcontractor to perform any work included in this contract until he has verified the subcontractor as eligible to participate in federally funded contracts.
- (b) No proposed subcontractor shall be disapproved by the city/county except for cause.
- (c) The Contractor shall be as fully responsible to the city/county for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them.
- (d) The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work and required compliance by each subcontractor with the applicable provisions of the Contract.
- (e) Nothing contained in the Contract shall create any contractual relation between any subcontractor and the Owner.

5. Fitting and Coordination of Work

The Contractor shall be responsible for the proper fitting of all work and for the coordination of the operations of all trades, subcontractors, or material suppliers engaged upon this Contract.

6. Payments to Contractor

(a) Partial Payments

- 1) The Contractor shall prepare his requisition for partial payment as of the last day of the month and submit it, with the required number of copies, to the Engineer for his approval. 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) ten percent (10%) of the total amount, to be retained until final payment 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 prices contained in the agreement. 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 available for inspection of the Engineer.
- 2) Monthly or partial payments made by the Owner to the Contractor are moneys advanced for the purpose of assisting the contractor to expedite the work of construction. 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 payments 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.

(b) Final Payment

- 1) After final inspection and acceptance by the Owner of all work under the Contract, the Contractor shall prepare his requisition for final payment which shall be based upon the careful inspection of each item of work at the applicable unit prices stipulated in the Agreement. The total amount of the final payment due the Contractor under this contract shall be the amount computed as described above less all previous payments.

- 2) The Owner before paying the final estimate, shall 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 it necessary in order to protect its interest. The Owner may, if it deems such action advisable, make payment in part or in full to the Contractor without requiring the furnishing of such releases or receipts and any payments made shall in no way impair the obligations of any surety or sureties furnished under this Contract.
- 3) Any amount due the Owner under Liquidated Damages, shall be deducted from the final payment due the contractor.

(c) Payments Subject to Submission of Certificates

Each payment to the Contractor by the Owner shall be made subject to submission by the Contractor of all written certifications required of him and his subcontractors.

(d) Withholding Payments

The Owner may withhold from any payment due the Contractor whatever is deemed necessary to protect the Owner, and if so elects, may also withhold any 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.

7. Changes in the Work

- (a) The Owner may make changes in the scope of work required to be performed by the Contractor under the Contract without relieving or releasing the Contractor from any of his obligations under the Contract or any guarantee given by him pursuant to the Contract provisions, and without affecting the validity of the guaranty bonds, and without relieving or releasing the surety or sureties of said bonds. All such work shall be executed under the terms of the original Contract unless it is expressly provided otherwise. Additionally, all such change orders must be approved by the CDBG staff prior to execution of same.
- (b) Except for the purpose of affording protection against any emergency endangering health, life, limb or property, the Contractor shall make no change in the materials used or in the specified manner of constructing and/or installing the improvements or supply additional labor, services or materials beyond that actually required for the execution of the Contract, unless in pursuance of a written order from the Owner authorizing the Contractor to proceed with the change. No claim for an adjustment of the Contract Price will be valid unless so ordered.
- (c) If applicable unit prices are contained in the Agreement, the Owner may order the Contractor to proceed with desired unit prices specified in the Contract; provided that in case of a unit price contract the net value of all changes does not increase the original total amount of the agreement by more than twenty-five percent (25%) or decrease the original the total amount by twenty-five percent (25%).

(d) Each change order shall include in its final form:

- 1) A detailed description of the change in the work.
- 2) The Contractor's proposal (if any) or a confirmed copy thereof.
- 3) A definite statement as to the resulting change in the contract price and/or time.
- 4) The statement that all work involved in the change shall be performed in accordance with contract requirements except as modified by the change order.
- 5) The procedures as outlined in this Section for a unit price contract also apply in any lump sum contract.

8. Claims for Extra Cost

- (a) If the Contractor claims that any instructions by Drawings or otherwise involve extra cost or extension of time, he shall, **within ten (10) calendar days** after the receipt of such instructions, and in any event before proceeding to execute the work, submit his protest thereto in writing to the Owner, stating clearly and in detail the basis of his objections. No such claim will be considered unless so made.
- (b) Claims for additional compensation for extra work, due to alleged errors in ground elevations, contour lines, or bench marks, will not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material, or performing more work, than would be reasonably estimated from the Drawings and maps issued.
- (c) Any discrepancies which may be discovered between actual conditions and those represented by the Drawings and maps shall be reported at once to the Owner and work shall not proceed except at the Contractor's risk, until written instructions have been received by him from the Owner.
- (d) If, on the basis of the available evidence, the Owner determines that an adjustment of the Contract Price and/or time is justifiable, a change order shall be executed.

9. Termination, Delays, and Liquidated Damages

- (a) Right of the Owner to Terminate Contract.
- (b) In the event that any of the provisions of this contract are violated by the Contractor, or by any of his subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the contract. The notices shall contain the reasons for such intention to terminate the contract, and unless such violation or delay shall cease and satisfactory arrangement of correction be made **within ten (10) calendar days**, the contract shall, upon the expiration of said **ten (10) calendar days**, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the Surety and the Contractor. The Surety shall have the right to take over and perform the contract. Provided, however, that if the Surety does not commence performance thereof **within ten (10) calendar days** from the date of the mailing to such Surety of notice of termination, the Owner may take over the work and complete the project by bid/contract or by force account at the expense of the Contractor and his Surety shall be liable to the Owner for any excess cost incurred. In such event the Owner may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefore.

(c) Liquidated Damages for Delays.

(d) If the work is not completed within the time stipulated in the applicable bid for Lump Sum or Unit Price Contract provided, the Contractor shall pay to the Owner as fixed, agreed, and liquidated damages (it being impossible to determine the actual damages occasioned by the delay) the amount of \$500 for each calendar day of delay, until the work is completed. The Contractor and his sureties shall be liable to the Owner for the amount thereof.

(e) Excusable Delays.

- 1) The right of the Contractor to proceed shall not be terminated nor shall the Contractor be charged with liquidated damages for any delays in the completion of the work due to:
- 2) Any acts of the Government, including controls or restrictions upon or requisitioning of materials, equipment, tools, or labor by reason of war, national defense, or any other national emergency;
- 3) Any acts of the Owner;
- 4) Causes not reasonably foreseeable by the parties to this Contract at the time of the execution of the Contract which are beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God or of the public enemy, acts of another Contractor in the performance of some other contract with the Owner, fires, floods, epidemics, quarantine, restrictions, strikes, freight embargoes, and weather of unusual severity such as hurricanes, tornadoes, cyclones and other extreme weather conditions.
- 5) Provided, however, that the Contractor promptly notifies the Owner **within ten (10) calendar days** in writing of the cause of the delay. Upon receipt of such notification, the Owner shall ascertain the facts and the cause and extent of delay. If, upon the basis of the facts and the terms of this contract, the delay is properly excusable, the Owner shall extend the time for completing the work for a period of time commensurate with the period of excusable delay.

10. Assignment or Novation

The Contractor shall not assign or transfer, whether by an assignment or novation, any of its rights, duties, benefits, obligations, liabilities, or responsibilities under this Contract without the written consent of the Owner; provided, however, that assignments to banks or other financial institutions may be made without the consent of the Owner. No assignment or novation of this Contract shall be valid unless the assignment or novation expressly provides that the assignment of any of the Contractor's rights or benefits under the Contract is subject to a prior lien for labor performed, services rendered, and materials, tools, and equipment supplied for the performance of the work under this Contract in favor of all persons, firms, or corporations rendering such labor or services or supplying such materials, tools, or equipment.

11. Disputes

(a) All disputes arising under this Contract or its interpretation except those disputes covered by FEDERAL LABOR STANDARDS PROVISIONS whether involving law or fact or both, or extra work, and all claims for alleged breach of contract shall, **within ten (10) calendar days** of commencement of the dispute, be presented by the Contractor to the Owner for decision. Any claim not presented within the time limit specified in this paragraph shall be deemed to have been waived, except that if the claim is of a continuing character and notice of the claim is not given

within ten (10) calendar days of its commencement, the claim will be considered only for a period commencing **ten (10) calendar days** prior to the receipt of the Owner.

- (b) The Contractor shall submit in detail his claim and his proof thereof.
- (c) If the Contractor does not agree with any decision of the Owner, he shall in no case allow the dispute to delay the work but shall notify the Owner promptly that he is proceeding with the work under protest.

12. Technical Specifications and Drawings

Anything mentioned in the Technical Specifications and not shown on the Drawings or vice versa, shall be of like effect as if shown on or mentioned in both. In case of difference between Drawings and Technical Specifications, the Technical Specifications shall govern. In case of any discrepancy in Drawings, or Technical Specifications, the matter shall be immediately submitted to the Owner, without whose decision, said discrepancy shall not be adjusted by the Contractor, save only at his own risk and expense.

13. Shop Drawings

- (a) All required shop drawings, machinery details, layout drawings, etc. shall be submitted to the Engineer in **two (2) copies** for approval sufficiently in advance of requirements to afford ample time for checking, including time for correcting, resubmitting and rechecking if necessary. The Contractor may proceed, only at his own risk, with manufacture or installation of any equipment or work covered by said shop drawings, etc. until they are approved and no claim, by the Contractor, for extension of the contract time shall be granted by reason of his failure in this respect.
- (b) Any drawings submitted without the Contractor's stamp of approval will not be considered and will be returned to him for proper resubmission. If any drawings show variations from the requirements of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment of contract price and/or time, otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though the drawings have been approved.
- (c) If a shop drawing is in accordance with the contract or involves only a minor adjustment in the interest of the Owner not involving a change in contract price or time; the engineer may approve the drawing. The approval shall not relieve the Contractor from his responsibility for adherence to the contract or for any error in the drawing.

14. Requests for Supplementary Information

It shall be the responsibility of the Contractor to make timely requests of the Owner for any additional information not already in his possession which should be furnished by the Owner under the terms of this Contract, and which he will require in the planning and execution of the work. Such requests may be submitted from time to time as the need approaches, but each shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay. Each request shall be in writing, and list the various items and the latest date by which each will be required by the Contractor. The **first list shall be submitted within two weeks** after Contract award and shall be as complete as possible at that time. The Contractor shall, if requested, furnish promptly any assistance and information the Engineer may require in responding to these requests of the Contractor. The Contractor shall be fully responsible for any delay in his work or to others arising from his failure to comply fully with the provision of this section.

15. Materials and Workmanship

- (a) Unless otherwise specifically provided for in the technical specifications, all workmanship, equipment, materials and articles incorporated in the work shall be new and the best grade of the respective kinds for the purpose. Where equipment, materials, articles or workmanship are referred to in the technical specifications as "equal to" any particular standard, the Engineer shall decide the question of equality.
- (b) The Contractor shall furnish to the Owner for approval the manufacturer's detailed specifications for all machinery, mechanical and other special equipment, which he contemplates installing together with full information as to type, performance characteristics, and all other pertinent information as required, and shall likewise submit for approval full information concerning all other materials or articles which he proposes to incorporate.
- (c) Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.
- (d) Materials specified by reference to the number or symbol of a specific standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in the technical specifications shall have full force and effect as though printed therein.
- (e) The Owner may require the Contractor to dismiss from the work such employee or employees as the Owner or the Engineer may deem incompetent, or careless, or insubordinate.

16. Samples, Certificates and Tests

- (a) The Contractor shall submit all material or equipment samples, certificates, affidavits, etc., as called for in the contract documents or required by the Engineer, promptly after award of the contract and acceptance of the Contractor's bond. No such material or equipment shall be manufactured or delivered to the site, except at the Contractor's own risk, until the required samples or certificates have been approved in writing by the Engineer. Any delay in the work caused by late or improper submission of samples or certificates for approval shall not be considered just cause for an extension of the contract time.
- (b) Each sample submitted by the Contractor shall carry a label giving the name of the Contractor, the project for which it is intended, and the name of the producer. The accompanying certificate or letter from the Contractor shall state that the sample complies with contract requirements, shall give the name and brand of the product, its place of origin, the name and address of the producer and all specifications or other detailed information which will assist the Engineer in making a prompt decision regarding the acceptability of the sample. It shall also include the statement that all materials or equipment furnished for use in the project will comply with the samples and/or certified statements.
- (c) Approval of any materials shall be general only and shall not constitute a waiver of the Owner's right to demand full compliance with Contract requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been given general approval. If materials, equipment or accessories which fail to meet check tests have been incorporated in the work, the Engineer will have the right to cause their removal and replacement by proper materials or to demand and secure such reparation by the Contractor as is equitable.

- (d) Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:
- 1) The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, except those samples taken on the project by the Engineer;
 - 2) The Contractor shall assume all costs of re-testing materials which fail to meet contract requirements;
 - 3) The Contractor shall assume all costs of testing materials offered in substitution for those found deficient;
 - 4) The Owner will pay all other expenses.

17. Permits and Codes

- (a) The Contractor shall give all notices required by and comply with all applicable laws, ordinances, and codes of the Local Government. All construction work and/or utility installations shall comply with all applicable ordinances, and codes including all written waivers. Before installing any work, the Contractor shall examine the drawings and technical specifications for compliance with applicable ordinances and codes and shall immediately report any discrepancy to the Owner. Where the requirements of the drawings and technical specifications fail to comply with such applicable ordinances or codes, the Owner will adjust the Contract by Change Order to conform to such ordinances or codes (unless waivers in writing covering the difference have been granted by the governing body or department) and make appropriate adjustment in the Contract Price or stipulated unit prices.
- (b) Should the Contractor fail to observe the foregoing provisions and proceed with the construction and/or install any utility at variance with any applicable ordinance or code, including any written waivers (notwithstanding the fact that such installation is in compliance with the drawings and technical specifications), the Contractor shall remove such work without cost to the Owner.
- (c) The Contractor shall at his own expense, secure and pay for all permits for street pavement, sidewalks, shed, removal of abandoned water taps, sealing of house connection drains, pavement cuts, buildings, electrical, plumbing, water, gas and sewer permits required by the local regulatory body or any of its agencies.
- (d) The Contractor shall comply with applicable local laws and ordinances governing the disposal of surplus excavation, materials, debris and rubbish on or off the Project Area and commit no trespass on any public or private property in any operation due to or connected with the Improvements contained in this Contract.
- (e) The Contractor will be required to make arrangements for and pay the water, electrical power, or any other utilities required during construction.
- (f) During construction of this project, the Contractor shall use every means possible to control the amount of dust created by construction. Prior to the close of a day's work, the Contractor, if directed by the Owner, shall moisten the bank and surrounding area to prevent a dusty condition.

18. Care of Work

- (a) The Contractor shall be responsible for all damages to person or property that occur as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance.
- (b) The Contractor shall provide sufficient competent watchmen, both day and night, including Saturdays, Sundays, and holidays, from the time the work is commenced until final completion and acceptance.
- (c) In an emergency affecting the safety of life, limb or property, including adjoining property, the Contractor, without special instructions or authorization from the Owner is authorized to act at his discretion to prevent such threatened loss or injury, and he shall so act. He shall likewise act if instructed to do so by the Owner.
- (d) The Contractor shall avoid damage as a result of his operations to existing sidewalks, streets, curbs, pavements, utilities (except those which are to be replaced or removed), adjoining property, etc., and he shall at his own expense completely repair any damage thereto caused by his operations.
- (e) The Contractor shall shore up, brace, underpin, secure, and protect as maybe necessary, all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be in any way affected by the excavations or other operations connected with the construction of the improvements included in this Contract. The Contractor shall be responsible for the giving of any and all required notices to any adjoining or adjacent property owner or other party before the commencement of any work. The Contractor shall indemnify and save harmless the Owner from any damages on account of settlements or the loss of lateral support of adjoining property and from all loss or expense and all damages for which the Owner may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.

19. Accident Prevention

- (a) No laborer or mechanic employed in the performance of this Contract shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety as determined under construction safety and health standards promulgated by the Secretary of Labor.
- (b) The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work.
- (c) The Contractor shall maintain an accurate record of all cases of death, occupational disease, or injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the Contract. The Contractor shall promptly furnish the Owner with reports concerning these matters.
- (d) The Contractor shall indemnify and save harmless the Owner from any claims for damages resulting from property damage, personal injury and/or death suffered or alleged to have been suffered by any person as a result of any work conducted under this contract.
- (e) The Contractor shall provide trench safety for all excavations more than five feet deep prior to excavation. All OSHA Standards for trench safety must be adhered to by the Contractor.

- (f) The contractor shall at all times conduct his work in such a manner as to insure the least possible inconvenience to vehicular and pedestrian traffic. At the close of the work each day, all streets where possible in the opinion of the Owner, shall be opened to the public in order that persons living in the area may have access to their homes or businesses by the use of the streets. Barricades, warning signs, and necessary lighting shall be provided to the satisfaction of the Owner at the expense of the Contractor.

20. Sanitary Facilities

The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, a sufficient number of enclosed temporary toilets shall be conveniently placed as required. Drinking water shall be provided from an approved source, so piped or transported as to keep it safe and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with existing and governing health regulations.

21. Use of Premises

- (a) The Contractor shall confine his equipment, storage of materials, and construction operations to the contract limits as shown on the drawings and as prescribed by ordinances or permits, or as may be desired by the Owner, and shall not unreasonably encumber the site or public rights of way with his materials and construction equipment.
- (b) The Contractor shall comply with all reasonable instructions of the Owner and all existing state and local regulations regarding signs, advertising, traffic, fires, explosives, danger signals, and barricades.

22. Removal of Debris, Cleaning, Etc.

The Contractor shall, periodically or as directed during the progress of the work, remove and legally dispose of all surplus excavated material and debris, and keep the Project Area and public rights of way reasonably clear. Upon completion of the work, he shall remove all temporary construction facilities, debris and unused materials provided for work, and put the whole site of the work and public rights of way in a neat and clean condition.

23. Inspection

- (a) All materials and workmanship shall be subject to inspection, examination, or test by the Owner and Engineer at any and all times during manufacture or construction and at any and all places where such manufacture or construction occurs. The Owner shall have the right to reject defective material and workmanship or require its correction. Unacceptable workmanship shall be satisfactorily corrected. Rejected material shall be promptly segregated and removed from the Project Area and replaced with material of specified quality without charge. If the Contractor fails to proceed at once with the correction of rejected workmanship or defective material, the Owner may by contract or otherwise have the defects remedied or rejected materials removed from the Project Area and charge the cost of the same against any Monies which may be due the Contractor, without prejudice to any other rights or remedies of the Owner.
- (b) The Contractor shall furnish promptly all materials reasonably necessary for any tests which may be required. All tests by the Owner will be performed in such manner as not to delay the work unnecessarily and will be made in accordance with the provisions of the technical specifications.

- (c) The Contractor shall notify the Owner sufficiently in advance of back filling or concealing any facilities to permit proper inspection. If any facilities are concealed without approval or consent of the Owner, the Contractor shall uncover for inspection and recover such facilities at his own expense, when so requested by the Owner.
- (d) Should it be considered necessary or advisable by the Owner at any time before final acceptance of the entire work to make an examination of work already completed by uncovering the same, the Contractor shall on request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective in any important or essential respect, due to fault of the Contractor or his subcontractors, the Contractor shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the Contract, the actual cost of labor and material necessarily involved in the examination and replacement, shall be allowed the Contractor and he shall, in addition, if completion of the work of the entire Contract has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.
- (e) Inspection of materials and appurtenances to be incorporated in the improvements included in this Contract may be made at the place of production, manufacture or shipment, whenever the quantity justifies it, and such inspection and acceptance, unless otherwise stated in the technical specifications, shall be final, except as regards (1) latent defects, (2) departures from specific requirements of the Contract, (3) damage or loss in transit, or (4) fraud or such gross mistakes as amount to fraud. Subject to the requirements contained in the preceding sentence, the inspection of materials as a whole or in part will be made at the Project Site.
- (f) Neither inspection, testing, approval nor acceptance of the work in whole or in part, by the Owner or its agents shall relieve the Contractor or his sureties of full responsibility for materials furnished or work performed not in strict accordance with the Contract.

24. Review by Owner

The Owner and its authorized representatives and agents shall have access to and be permitted to observe and review all work, materials, equipment, payrolls, personnel records, employment conditions, material invoices, and other relevant data and records pertaining to this Contract, provided, however that all instructions and approval with respect to the work will be given to the Contractor only by the Owner through its authorized representatives or agents.

25. Final Inspection

When the Improvements included in this Contract are substantially completed, the Contractor shall notify the Owner in writing that the work will be ready for final inspection on a definite date which shall be stated in the notice. The Owner will make the arrangements necessary to have final inspection commenced on the date stated in the notice, or as soon thereafter as is practicable.

26. Deduction for Uncorrected Work

If the Owner deems it not expedient to require the Contractor to correct work not done in accordance with the Contract Documents, an equitable deduction from the Contract Price will be made by agreement between the Contractor and the Owner and subject to settlement, in case of dispute, as herein provided.

27. Insurance

The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner.

- (a) Compensation Insurance: The Contractor shall procure and shall maintain during the life of this contract Worker's Compensation Insurance as required by the State of Texas for all of his employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Worker's Compensation Insurance.
- (b) Contractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall procure and shall maintain during the life of this contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability as described in Section 01 00 00 – Special Conditions in the Technical Specifications.
- (c) Proof of Insurance: The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except **after ten (10) calendar days** written notice has been received by the Owner."

28. Warranty of Title

No material, supplies, or equipment to be installed or furnished under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale, lease-purchase or other agreement by which an interest is retained by the seller or supplier. The Contractor shall warrant good title to all materials, supplies, and equipment installed or incorporated in the work and upon completion of all work, shall deliver the same together with all improvements and appurtenances constructed or placed by him to the Owner free from any claims, liens, or charges. Neither the Contractor nor any person, firm, or corporation furnishing any material or labor for any work covered by this Contract shall have any right to a lien upon any improvement or appurtenance. Nothing contained in this paragraph, however, shall defeat or impair the right of persons furnishing materials or labor to recover under any law permitting such persons to look to funds due the Contractor in the hands of the Owner. The provisions of this paragraph shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials for the work when no formal contract is entered into for such materials.

29. Warranty of Workmanship and Materials

Neither the final certificate of payment nor any provision in the Contract nor partial or entire use of the improvements included in this Contract by the Owner or the public shall constitute an acceptance of work not done in accordance with the Contract or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall promptly remedy any defects in the work and pay for any damage to other work resulting therefrom which shall appear within a period of 12 months from the date of final acceptance of the work.

30. Compliance with Air and Water Acts

- (a) In compliance with the Clean Air Act, as amended, 41 U.S.C. Sec. 7401 et. seq., and the regulations of the Environmental Protection Agency with respect thereto, the Contractor agrees that:
 - 1) Any facility to be utilized in the performance of this contract or any subcontract shall not be a facility listed on the EPA List of Violating Facilities pursuant to 40 CFR 15.20.
 - 2) Contractor will comply with all requirements of Section 114 of the Clean Air Act, as amended.
 - 3) Materials utilized in the project shall be free of any hazardous materials, except as may be specifically provided for in the specifications.
- (b) If the Contractor encounters existing material on sites owned or controlled by the Owner or in material sources that are suspected by visual observation or smell to contain hazardous materials, the Contractor shall immediately notify the Engineer and the Owner. The Owner will be responsible for testing for and removal or disposition of hazardous materials on sites owned or controlled by the Owner. The Owner may suspend the work, wholly or in part during the testing, removal or disposition of hazardous materials on sites owned or controlled by the Owner.

31. Equal Employment Opportunity

- (a) The Contractor will not discriminate against any employee or the applicant for employment because of race, color, religion, sex, gender, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, gender, or national origin. Such action shall include, but not be limited to the following: employment, promotion, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the owner.
- (b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (c) The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.
- (d) The Contractor shall take affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions.
- (e) Contractors are encouraged to participate in voluntary associations which assist in fulfilling their affirmative action obligations.
- (f) The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority.
- (g) The Contractor shall not use the affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

- (h) The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts.
- (i) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents.

32. Affirmative Action for Workers with Disabilities

The Contractor will not discriminate against any employee or applicant for employment because of disability in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with disabilities without discrimination based upon their disability in all employment practices such as the following: employment, promotion, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

33. Section 109 of the Housing and Community Development Act of 1974

No person in the United States shall on the ground of race, color, national origin, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

34. The Provision of Local Training, Employment, and Business Opportunities

- (a) To the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project.
- (b) The Contractor will include this clause in every subcontract for work in connection with the project.

35. Non Segregated Facilities

The Contractor certifies that he does not and will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not and will not permit his employees any segregated facilities at any of his establishments, or permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. As used in this paragraph the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise.

36. Job Offices

- (a) The Contractor and his subcontractors may maintain such office and storage facilities on the site as are necessary for the proper conduct of the work. These shall be located so as to cause no interference to any work to be performed on the site. The Owner shall be consulted with regard to locations.

- (b) Upon completion of the improvements, or as directed by the Owner, the Contractors shall remove all such temporary structures and facilities from the site, and leave the site of the work in the condition required by the Contract.

37. Partial Use of Site Improvements

The Owner may give notice to the Contractor and place in use those sections of the improvements which have been completed, inspected and can be accepted as complying with the technical specifications and if in its opinion, each such section is reasonably safe, fit, and convenient for the use and accommodation for which it was intended, provided:

- (a) The use of such sections of the Improvements shall in no way impede the completion of the remainder of the work by the Contractor.
- (b) The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.
- (c) The period of guarantee stipulated in the Section 29 hereof shall not begin to run until the date of the final acceptance of all work which the Contractor is required to construct under this Contract.

38. Contract Documents and Drawings

The Local Public Agency will furnish the Contractor without charge **two (2)** copies of the Contract Documents, including Technical Specifications and Drawings. Additional copies requested by the Contractor will be furnished at cost.

39. Contract Period

The work to be performed under this contract shall commence within the time stipulated by the Owner in the Notice to Proceed, and shall be fully completed **within 75 calendar days** thereafter.

40. Liquidated Damages

Since the actual damages for any delay in completion of the work under this contract are impossible to determine, the Contractor and his Sureties shall be liable for and shall pay to the Owner the sum of **Five Hundred Dollars (\$500)** as fixed, agreed and liquidated damages for each calendar day of delay from the above stipulated time for completion.

Federal Labor Standards Provisions

U.S. Department of Housing
And Urban Development

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage rate and fringe benefits therefore only when the following criteria have been met.

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140).

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140).

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of an laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140).

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract, in the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates or contributions or costs anticipated for bona fide fringe benefits or cash equivalents there of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017).

(ii)(a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-0014-1), U. S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149).

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a)(3)(i) and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph A.3.(ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

(4) Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration. Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. the ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may be appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part "Whoever, for the purpose of ... influencing in any way the action of such Administration... makes, utters or publishes any statement, knowing the same to be false... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat.96).

(3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

CONTRACTOR'S LOCAL OPPORTUNITY PLAN

_____ agrees to implement the following specific affirmative action steps directed at increasing the utilization of lower income residents and businesses within the (City/County) of Jefferson.

- A. To ascertain from the Grant Recipient's CDBG program official the exact boundaries of the project area and where advantageous, seek the assistance of local officials in preparing and implementing the affirmative action plan.
- B. To attempt to recruit from within the city the necessary number of lower income residents through: local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within and servicing the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service.
- C. To maintain a list of all lower income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.
- D. To insert this plan in all bid documents and to require all bidders on subcontracts to submit an affirmative action plan including utilization goals and the specific steps planned to accomplish these goals.
- E. To insure that subcontracts (greater than \$10,000), which are typically let on a negotiated rather than a bid basis in areas other than the covered project area, are also let on a negotiated basis, whenever feasible, in a covered project area.
- F. To formally contact unions, subcontractors, and trade associations to secure their cooperation in this effort.
- G. To insure that all appropriate project area business concerns are notified of pending sub-contractual opportunities.
- H. To maintain records, including copies of correspondence, memoranda, etc., which document that all of the above affirmative action steps have been taken.
- I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of this plan.
- J. To maintain records concerning the amount and number of contracts, subcontracts, and purchases which contribute to objectives.
- K. To maintain records of all projected work force needs for all phases of the project by occupation, trade, skill level, and number of positions and to update these projections based on the extent to which hiring meets these Local Opportunity objectives.

As officers and representatives of _____, we the undersigned have read and fully agree to this Plan, and become a party to the full implementation of the program and its provisions.

Signature

Title

Date

PROPOSED CONTRACTS BREAKDOWN

Type of Contracts	No. of Contracts	Approx. Total Dollar Amount	Estimated No. to local Business	Estimated \$ Amount Local Business

ESTIMATED PROJECT WORKFORCE BREAKDOWN

Work Classifications	Total Estimated Positions	No. of Positions Currently Filled	No. of Positions not Filled	No. of Positions to fill with L/M Residents
Totals				

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

Name of Bidder: _____ Date Organized: _____

Address: _____ Date Incorporated _____

Number of Years in contracting business under present name _____:

CONTRACTS ON HAND:

Contract	Amount \$	Completion Date

Type of work performed by your company: _____

Have you ever failed to complete any work awarded to you? _____

Have you ever defaulted on a contract? _____

List the projects most recently completed by your firm (include project of similar importance):

Project	Amount \$	Mo/Yr Completed

Major equipment available for **this** contract: _____

Attach resume(s) for the principal member(s) of your organization, including the officers as well as the proposed superintendent for the project.

Credit available: \$ _____ Bank reference: _____

The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the _____ in verification of the recitals comprising this Statement of Bidder's Qualifications.

Executed this _____ day of _____, 20__.

By:(signature) _____ Title: _____

(print name) _____

CONTRACTOR CERTIFICATIONS

U.S. Department of Housing and Urban Development

CERTIFICATION OF BIDDER REGARDING CIVIL RIGHTS LAWS AND REGULATIONS

INSTRUCTIONS

CERTIFICATION OF BIDDER REGARDING Executive Order 11246 and Federal Laws Requiring Federal Contractor to adopt and abide by equal employment opportunity and affirmative action in their hiring, firing, and promotion practices. This includes practices related to race, color, gender, religion, national origin, disability, and veterans' rights.

NAME AND ADDRESS OF BIDDER (include ZIP Code)

CERTIFICATION BY BIDDER

Bidder has participated in a previous contract or subcontract subject to Civil Rights Laws and Regulations.

Yes No

The undersigned hereby certifies that:

- The Provision of Local Training, Employment, and Business Opportunities clause (Section 3 provision) is included in the Contract. A written Section 3 plan (Local Opportunity Plan) was prepared and submitted as part of the bid proceedings (if bid equals or exceeds \$100,000).
- The Non Segregated Facilities clause (Section 109 provision) is included in the Contract. No segregated facilities will be maintained as required by Title VI of the Civil Rights Act of 1964.
- The Equal Employment Opportunity clause is included in the Contract (if bid equals or exceeds \$10,000).
- The Affirmative Action for Handicapped Workers clause is included in the contract.

Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?

Yes No

NAME AND TITLE OF SIGNER (Please type)

SIGNATURE

DATE

SECTION 504 CERTIFICATION

**POLICY OF NONDISCRIMINATION ON THE BASIS
OF DISABILITY**

The _____ does not discriminate on the basis of disability in the admission or access to, or treatment or employment in, its federally assisted programs or activities.

(Name) _____

(Address) _____

City State Zip

Telephone Number () _____ - _____ Voice

() _____ - _____ TDD

has been designated to coordinate compliance with the nondiscrimination requirements contained in the Department of Housing and Urban Development's (HUD) regulations implementing Section 504 (24 CFR Part 8. dated June 2, 1988).

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
 COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
 CONTRACTOR'S CERTIFICATION
CONCERNING LABOR STANDARDS AND PREVAILING WAGE REQUIREMENTS

TO (appropriate recipient)	DATE
	PROJECT NUMBER (if any)
C/O	PROJECT NAME

1. The undersigned, having executed a contract with _____
 _____ for the construction of the above-identified project, acknowledges that:

- (a) The Labor Standards provisions are included in the aforesaid contract,
- (b) Correction of any infractions of the aforesaid conditions, including infractions by any of his subcontractors and any lower tier subcontractors, is his responsibility.

2. He certifies that:

- (a) Neither he nor any firm, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended.
- (b) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designated as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. He agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by his subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. He certifies that:

- (a) The legal name and the business address of the undersigned are:

(b) The undersigned is:

(1) A SINGLE PROPRIETORSHIP	(3) A CORPORATION ORGANIZED IN THE STATE OF
(2) A PARTNERSHIP	(4) OTHER ORGANIZATION (Describe)

(c) The name, title and address of the owner, partners or officers of the undersigned are:

NAME	TITLE	ADDRESS

(d) The names and addresses of all other persons having a substantial interest in the undersigned, and the nature of the interest are:

NAME	ADDRESS	NATURE OF INTEREST

(e) The names, addresses and trade classifications of all other building construction contractors in which the undersigned has a substantial interest are:

NAME	ADDRESS	TRADE CLASSIFICATION

_____ (Contractor)

Date _____

By _____

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of Texas

County of Jefferson

_____, being first duly sworn, deposes and says that:

(1) He is _____ of _____, the Bidder that has submitted the attached Bid;

(2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham Bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with another Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix an overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the County of Jefferson or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

Title

Subscribed and sworn to me this _____ day of _____.

By: _____

Notary Public

My commission expires _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, _____ as PRINCIPAL, and _____, as SURETY are held and firmly bound unto _____ hereinafter called the "Owner", in the penal sum of _____ Dollars, (\$_____), lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the Accompanying Bid, dated _____, for _____

NOW, THEREFOR, if the Principal shall not withdraw said Bid within the period specified therein after the opening of the same, or, if no period be specified, within thirty (30) calendar days after the said opening, and shall within the period specified therefor, or if no period be specified, within ten (10) calendar days after the prescribed forms are presented to him for signature, enter into a written contract with the Owner in accordance with the Bid as accepted, and give bond with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract; or in the event of the withdrawal of said Bid within the period specified, or the failure to enter into such Contract and give such bond within the time specified, if the Principal shall pay the Owner the difference between the amount specified in said Bid and the amount for which the local Public Agency may procure the required work or supplies or both, if the latter be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS THEREOF, the above-bounded parties have executed this instrument under their several seals this _____ day of _____, the name and corporate seal of each corporate party being hereto affixed and these present signed by its undersigned representative, pursuant to authority of its governing body.

(SEAL)

Attest:

(SEAL)

By: _____

Affix
Corporate
Seal

Attest:

By: _____

Affix
Corporate
Seal

Attest:

By: _____

Countersigned

By _____

* Attorney-in-Fact, State of _____

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the _____,
Secretary of the Corporation named as Principal in the within bond; that _____, who
signed the said bond on behalf of the Principal was then _____ of said
corporation; that I know his signature, and his signature thereto is genuine; and that said bond was
duly signed, sealed, and attested to, for and in behalf of said corporation by authority of this governing
body.

Corporate
Seal

Title: _____

* Power-of-attorney for person signing for surety company must be attached to bond.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor or Company)

(Address)

a _____, hereinafter called Principal,
(Corporation / Partnership)

and _____
(Name of Surety Company)

(Address)

hereinafter called Surety, are held and firmly bound unto

(Name of Recipient)

(Recipient's Address)

hereinafter called OWNER, in the penal sum of \$ _____

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

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

(Project Name)

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

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its

obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

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

IN WITNESS WHEREOF, this instrument is executed in _____ counter-parts, each on of _____ (Number) which shall be deemed an original, this the _____ day of _____.

ATTEST: _____
(Principal)

_____ By _____ (s)
(Principal Secretary)

(SEAL)

(Witness as to Principal) (Address)

(Address)

ATTEST: _____
(Surety)

_____ By _____
(Witness as to Surety) (Attorney in Fact)

(Address) (Address)

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

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor or Company)

(Address)

a _____ hereinafter called Principal, and

(Name of Surety Company)

(Address)

hereinafter called Surety, are held and firmly bound unto

(Name of Recipient)

(Recipient's Address)

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

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

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

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

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

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

ATTEST: _____
(Principal)
By _____(s)
(Principal Secretary)

(SEAL)

(Witness as to Principal) (Address)

(Address) _____

ATTEST: _____
(Surety)
By _____
(Witness as to Surety) (Attorney in Fact)

(Address) (Address)

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

ATTORNEY'S REVIEW CERTIFICATION

I, the undersigned, _____, the duly authorized and acting legal representative of the _____, do hereby certify as follows:

I have examined the attached contract(s) and surety bonds and am of the opinion that each of the agreements may be duly executed by the proper parties, acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties; and that the agreements shall constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions and provisions thereof.

Attorney's signature: _____ Date: _____

Print Attorney's Name: _____

PROJECT SIGN REQUIREMENTS

Public buildings, facilities, and centers constructed with Texas General Land Office TxCDBG-DRS assistance shall have permanent signage placed in a prominent visible public area with the wording provided below. The formatting of such signage will be at local discretion to best fit the architectural design of the facility constructed but should be legible from at least three (3) feet distance. The Texas General Land Office and United States Department of Housing and Urban Development logos should be included on the sign.

Other construction projects, e.g., water transmission lines, sewer collection lines, drainage, roadways, housing rehabilitation, etc. utilizing Texas General Land Office TxCDBG-DRS funding shall have temporary signage erected in a prominent location at the construction project site or along a major thoroughfare within the locality as directed by the owner.

Project Sign Wording:

“This project is funded by the General Land Office of the State of Texas, to provide for disaster recovery and restoration of infrastructure for communities impacted by the 2008 hurricanes. Funds allocated by the United States Department of Housing and Urban Development through the Community Development Block Grant Program.”



HURRICANE RECOVERY PROJECT

This project is funded by the General Land Office of the State of Texas to provide for disaster recovery and restoration of infrastructure for communities impacted by the 2008 hurricanes.



Funds allocated by the United States Department of Housing and Urban Development through the Community Development Block Grant Program.

WWW.GLO.TEXAS.GOV

JEFFERSON COUNTY

TEXAS GENERAL LAND OFFICE ROUND 1 POST-IKE RECOVERY PROJECT

JEFFERSON COUNTY CONTRACT NO. DRS010219 SPPA PAVING AND DRAINAGE IMPROVEMENTS

TECHNICAL SPECIFICATIONS
OCTOBER 17, 2012
REVISION 2

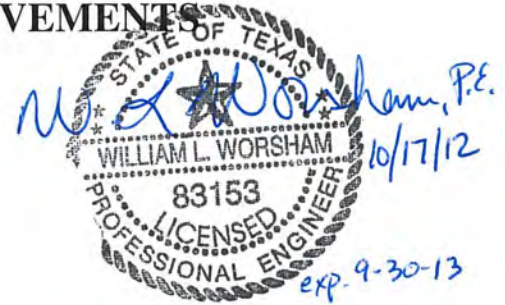


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JEFFERSON COUNTY

**Texas General Land Office
Round 1 Post-Ike Recovery Project**

at

**SABINE PASS PORT AUTHORITY
JEFFERSON COUNTY CONTRACT NO. DRS010210**

BID FORM

PROPOSAL

Proposal of _____, (hereinafter called "Bidder") organized and existing under the State of Texas and doing business as* _____, to the County of Jefferson (hereinafter called "Owner").

In compliance with your Call for Bids dated _____ 20__, Bidder hereby proposes to furnish all materials and equipment and to perform all work for Sabine Pass Port Authority, in strict accordance with the Contract Documents at the prices stated below.

By submission of this Bid, each Bidder certifies, and in case of a joint Bid, each party thereto certifies as to his own organization, that this Bid has been received independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence work under this contract on or before date to be specified in the NOTICE TO PROCEED and to fully complete the project within the time specified below. Bidder further agrees to pay as liquidated damages, the sum of (Five Hundred Dollars, \$500.00), for each consecutive calendar day thereafter, as provided in SECTION 01 00 00 - THE SPECIAL CONDITIONS of the Technical Specifications.

Bidder acknowledges receipt of the following ADDENDA:

* Corporation, PLLC, LLC, etc

Bidder has carefully examined the Instructions to Bidders, General Conditions, Technical Specifications, and Construction Drawings.

Bidder has secured and enclosed the Bid Security as required.

Bidder agrees to perform all work described in the CONTRACT DOCUMENTS for the following Schedule of Quantities and Prices:

*insert "a corporation", "a partnership", or "an individual" as applicable, or leave blank without DBA designation.

Base Bid - Paving and Drainage Improvements

Bid Item	Description	Estimated Qty's	Units	Unit Price	Total
<u>01 73 20 – Selective Demolition</u>					
17320-1	Demo existing culvert structures and associated miscellaneous material and components	1	LS		
17320-2	Demo existing road, road base and associated miscellaneous material and components	7100	SY		
<u>03 30 00 – Cast In Place Concrete</u>					
033000-1	Culvert Headwalls	7	CY		
<u>03 41 00 – Pre-Cast Concrete</u>					
034100-2	Culvert Inlet	2	EA		
<u>05 50 10 – Corrugated Metal Pipe</u>					
055010-1	18" Aluminum Pipe	80	LF		
<u>31 11 00 – Clearing and Grubbing</u>					
311100-1	Clearing and Grubbing upland site elements	5000	SY		
311100-2	Grading	11960	SY		
311100-3	Ditch Clean Out	510	CY		
<u>31 23 00 – Excavation and Fill</u>					
312300-1	Structural Backfill - Culverts	8	CY		
<u>32 12 16 – Asphalt Paving</u>					
321216-1	3" Road Surface	1174	Ton		
<u>32 12 20 – Flex Base</u>					
321220-1	14" Road Base	11100	SY		
321220-2	8" stabilized subgrade	7100	SY		
<u>33 06 41 Pipe and Appurtenaces</u>					
330641-1	6" dia. Water Line	425	LF		
					Base Bid Subtotal: _____

<u>01 71 13 – Mobilization and Demobilization</u>					
017113-1	Mob / Demob	1	LS		
					Base Bid Total: _____

Additive Bid 1 - Buried Electrical Service

Bid Item	Description	Estimated Qty's	Units	Unit Price	Total
<u>26 05 43 - Underground Ducts and Raceways for Electrical Systems</u>					
260543-1A	Install buried 4" dia. Conduit	1090	LF		
<u>01 71 13 – Mobilization and Demobilization</u>					
017113-1A	Mob / Demob	1	LS		
					Additive Bid 1 Total: _____

Additive Bid 2 - Buried Electrical Service

Bid Item	Description	Estimated Qty's	Units	Unit Price	Total
<u>26 05 43 - Underground Ducts and Raceways for Electrical Systems</u>					
260543-1B	Install buried 4" dia. Conduit	200	LF		
<u>01 71 13 – Mobilization and Demobilization</u>					
017113-1B	Mob / Demob	1	LS		
					Additive Bid 2 Total: _____

Notes:

1. Quantities are estimated based on data shown on the Drawings.
2. QUANTITIES SHOWN ARE TO BE USED FOR EVALUATING THIS PROPOSAL ONLY. Payment will be made in accordance with the payment section as described in a particular bid item's specification reference section.
3. The Owner reserves the right to increase or decrease the unit priced quantities by up to 25 percent at the stated unit price.
4. Bidder understands and agrees that all work must be completed WITHIN 75 CALENDAR DAYS from Notice to Proceed. Bidder understands that failure to complete work within that time period will subject him to LIQUIDATED DAMAGES.
5. Bidder shall submit with its bid a list of all subcontractors proposed for the Work.
6. The prices mentioned herein shall be full compensation for furnishing all materials, equipment, labor, and all other expenses necessary to perform work in accordance with these drawings, specifications and contract documents.

SUBMITTED BY:

Company Bidding: _____

Name of Bidder: _____

Address of Bidder: _____

Dated at: _____ this _____ day of _____, 20__.

Signature of Authorized Agent: _____

Title: _____

SECTION 01 00 00

SPECIAL CONDITIONS

1. GENERAL

In general, LJA Engineering, Inc will act as Engineer. Engineer shall consult with and advise Jefferson County (Owner) and act as Owners representative. All of Owner's instructions to the Contractor will be issued through the Engineer. The Engineer may direct the Contractor to maintain gauges, ranges, location marks, and limit marks in proper order and position, but the presence of the Engineer shall not relieve the Contractor of responsibility for the proper execution of the work in accordance with the specifications. The Engineer shall not supervise, direct or have control over Contractor(s) work nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences or procedures of construction selected by Contractor, for safety precautions and programs incident to the work of Contractor or for any failure of Contractor to comply with laws, rules, regulations, ordinances, codes or orders applicable to Contractor furnishing and performing the work.

1.1. RELATED DOCUMENTS

Drawings and general provisions of Contract, including General Conditions, Instructions to Bidders, Appendix K, and Technical Specification sections apply to work of this section.

1.2. DESCRIPTION OF WORK

Refer to SECTION 01 10 00, SUMMARY OF WORK.

1.3. EXAMINATION OF SITE

Bidders should visit the site and be thoroughly familiar with job conditions prior to submitting a bid. Failure to give proper consideration to these conditions when preparing bids will not constitute grounds for additional compensation.

1.4. INTENT OF THE CONTRACT DOCUMENTS

The intent of the Contract Documents is to include all of the work for the contract price and within the contract time. Contract Documents are to be considered as cooperative. All work not specified and/or not shown on the drawings but which is necessary for the completion and/or functioning and operation of the project, shall be understood and implied as part of the contract to be performed by the Contractor for the contract price. Such work shall be executed by the Contractor in the same manner and with the same character of material as other portions of the contract without extra compensation.

It is the intention of the Contract Documents to call for finished work, tested, and ready for operation.

Any apparatus, material or work described in the Contract Documents and any incidental accessories necessary to make the work complete in all respects and ready for operation (even though not particularly specified) shall be furnished, delivered, and installed by the Contractor without additional expense to the Owner.

Minor details not usually shown or specified but necessary for proper installation and operation are included in the work just as if herein specified or shown.

The agreement and each of the Contract Documents are complementary; and they shall be interpreted so that what is called for by one shall be as binding as if called for by all. Should the Contractor observe conflicts in or omission from the Contract Documents, Contractor shall bring them to the Engineer's attention for decision, inclusion, and revision as soon as possible after originally observed. Regardless, such work shall be performed and furnished by the Contractor in accordance with accepted construction industry practices. In the event of duplications or conflicts in

the Contract Documents after the contract has been executed, the greater quality and/or the most expensive method of work, materials, and equipment shall be construed as the requirement, with a credit for all costs saved accruing to the Owner in the event the least expensive method of work is directed. A duplication of work is not intended by the contract documents and any duplications specified shall not become a basis for extra cost to the Owner. Technical specifications shall take precedence over conflicting drawings. Explanatory notes on the drawings shall take precedence over conflicting drawn-out indications. Large-scale details will take precedence over small-scale drawings and figured dimensions to scale measurements. Where figures are lacking, scale measurements may be followed, but in all cases the measurements are to be checked from the work in place. Should variations be found, they must be referred to the Engineer for instructions prior to proceeding with the work. In the event of conflict between the Special Conditions and the General Conditions, the following priority order shall apply in resolving such conflicts: Special Conditions, then Uniform General Conditions.

The drawings consist of all project drawings and any drawings issued by addenda. In all cases, measured dimensions taken at the site shall take precedence over scale dimensions.

1.5. ADDENDA

Any addenda issued in writing by the Owner/Engineer during the period of bidding shall be included in the bid and Bidder's receipt of addenda shall be acknowledged in the Contractor's Bid form. Such addenda shall become a part of the contract and shall modify the Contract Documents accordingly. Oral changes in the work made during the time of bidding will not be binding.

1.6. PROJECT SIGNAGE

To meet signage requirements for projects utilizing CDBG-DRS funding, temporary signage shall be erected in a prominent location at the construction site or along a major thoroughfare within the locality, as directed by owner, per signage requirements indicated in Appendix K.

1.7. PERMITS AND LAWS

The Contractor shall comply with all federal, state, and municipal laws, rules regulations, and ordinances applicable to the work of this contract, and shall obtain and pay for all permits required in connection with the execution of the work. The Owner shall be furnished with certified copies of these permits if the Owner so requests. Refer to SECTION 01 35 43 - Protection of Environment of the Technical Specifications.

If such laws, rules, regulations or ordinances conflict with the Contract Documents, then such laws, rules, regulations, or ordinances shall govern instead of the Contract Documents, except in such cases where the Contract Documents exceed them in quality of materials or labor, then the Contract Documents shall be followed.

1.8. INSURANCE REQUIREMENTS

Insurance requirements are independent of all other obligations of the Contractor pursuant to these Contract Documents and apply whether or not required by any provision of the contract documents. Contractor shall cease work immediately upon the expiration of any insurance coverage required by the Contract Documents. Contractor shall provide the following additional insurance coverage:

U.S. Longshore and Harbor Workers' Insurance – Statutory amount in compliance with the United States Longshore and Harbor Workers' Act if required.

Maritime Employers Liability Insurance – Any employees who may fall under the Death on High Seas Act, Jones Act, or any other federal or state acts relating to maritime employment must be covered by Maritime Employers Liability Insurance of not less than \$500,000.00. Such coverage will include but not be limited to transportation, wages, maintenance and cure, as well as any other liabilities arising under such maritime employment.

All insurance must be written by an insurer licensed to conduct business in the State of Texas, unless otherwise permitted by Owner. The Contractor shall, at his own expense, purchase, maintain

and keep in force insurance that will protect against injury and/or damages which may arise out of or result from operations under this Contract, whether the operations be 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 of the following types and limits (No insurance policy or certificate of insurance required below shall contain any aggregate policy year limit unless a specific dollar amount [or specific formula for determining a specific dollar amount] aggregate policy year limit is expressly provided in the specification below which covers the particular insurance policy or certificate of insurance).

Standard Worker's Compensation Insurance (with waiver of subrogation in favor of Sabine Pass Port Authority, its officers, agents and employees). (City and Contract and all persons providing services shall comply with the workers compensation insurance requirements of Section 406.096 of the Texas Labor Code and 28 TAC Section 110.110, a copy of which is hereby incorporated by reference).

Commercial General Liability occurrence type insurance. No. "XCU" Restriction shall be applicable. Products/completed operations coverage must be included, and Sabine Pass Port Authority, Jefferson County, City of Port Arthur, and LJA Engineering, Inc, its officers, agents, and employees must be named as an additional Insured.

- a) Bodily Injury \$500,000 single limit per occurrence or \$500,000 each person/\$500,000 per occurrence for contracts of \$100,000 or less, or,
- b) Bodily Injury \$1,000,000 single limit per occurrence of \$1,000,000 each person/\$1,000,000 per occurrence for contracts in excess of \$100,000; and,
- c) Property Damage \$100,000 per occurrence regardless of Contract amount; and,
- d) Minimum aggregate policy year limit of \$1,000,000 of contracts of \$100,000 or less; or,
- e) Minimum aggregate policy year limit of \$2,000,000 for contracts in excess of \$100,000.

Comprehensive Automobile Liability (Including owned, non-owned, and hired vehicles coverage).

- a) Minimum combined single limit of \$500,000 per occurrence for bodily injury and property damage.
- b) If individual limits are provided, minimum limits are \$300,000 per person, \$500,000 per occurrence for bodily injury and \$100,000 per occurrence for property damage.

Contractual Liability Insurance covering the indemnity provision of this Contract in the same amount and coverage provided for Commercial General Liability Policy, specifically referring to this Contract by date, job number, and location.

Contractor shall cause Contractor's insurance company or insurance agent to fill in all information required (including names of insurance agency, Contractor and insurance companies, and policy numbers, effective dates and expiration dates) and to date and sign and do all other things necessary to complete and make into a valid certificate of insurance.

The Certificate of Insurance form attached to and made a part of the Information to Bidders, and pertaining to the above Insurance Requirements; and before commencing any of the work and within the time otherwise specified. Contractor shall file said completed Form with the Owner. None of the provisions in said Form shall be altered or modified in any respect except as herein expressly authorized.

Said Certificate of Insurance Form contains a provision that coverage's afforded under the policy will not be altered, modified or cancelled unless AT LEAST TEN (10) DAYS PRIOR written notice has been given to the Owner. Contractor shall also file with the Owner valid Certificate(s) of Insurance on like form from or for all Subcontractors and showing the Subcontractor(s) as the Insured. Said completed Certificate of Insurance Form(s) shall in any event be filed with Owner NOT MORE THAN TEN (10) DAYS after execution of this Contract.

1.9. PERFORMANCE AND PAYMENT BONDS

All performance and payment bonds be executed by sureties which are licensed to do business in the State of Texas and which are included in the list of companies in the current U. S. Department of the Treasury Circular 570, "Companies holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies," Sections 9304 through 9308 of Title 31 of the U. S. Code Annotated.

1.10. QUALITY ASSURANCE

The Owner and Engineer will periodically observe the construction progress, procedures, and materials of the Contractor. The Contractor shall offer full cooperation to facilitate these observation activities, and shall be responsive to questions regarding methods, equipment, materials, and intentions in pursuing the work or any particular thereof. Such observation by the Owner and/or Engineer is for the express purpose of verifying compliance by the Contractor with the Contract Documents and shall not be construed as construction supervision nor indication of approval of the manner or location in which the work is being performed as being a safe practice or place. The safety of the workers on the site is the responsibility of the Contractor. By entering the site, the Contractor and its employees relieve the Owner and Engineer of any responsibility for their safety and accept complete responsibility for any unsafe acts or procedures which may cause them harm.

If the Owner or Engineer rejects work and/or materials incorporated into the work, Contractor shall bear all expenses associated with testing to prove compliance with the Contract Documents, including but not limited to engineering expenses associated with such testing. Any and all such expenses that are paid directly by Owner will be deducted or withheld from subsequent payment(s) to the Contractor.

1.11. PROGRESS PAYMENTS

Refer to APPENDIX K for description of progress payments.

1.12. CONTRACT COMPLETION

Contract Period:

This contract must be completed within the specified number of days commencing on the date cited in the Notice to Proceed letter. The Contractor's Bid form for this project has been written to reflect this completion requirement.

Unless specifically stated as "working day," the term "day" or "calendar day" shall mean every day of the calendar year. Along with the work progress schedule, the Contractor shall submit his schedule for normal working days.

Claims for extension of time shall be made in accordance with the provisions of APPENDIX K.

Liquidated Damages:

The Owner has determined that the completion of the work in this contract is critical to the proper operation of the facility, and the Contractor's failure to complete the work within such time will cause damage to the Owner. Since exact damages are difficult to determine or forecast, the SUM OF \$500 PER CALENDAR DAY is hereby established by the parties as a reasonable estimate of just compensation to the Owner for the failure of the Contractor to complete the work by the time set forth in the contract or authorized extension thereto. Said sum will be deducted from the money due or to become due to the Contractor, not as a penalty but as liquidated damages from added expense, including administrative and inspection costs, for each and every calendar day the work or any portion thereof remains incomplete after the expiration of the time limit set in the contract or authorized extension. Charges for liquidated damages will begin accumulating on the first calendar day following

the final contract completion date and continue until the date of final acceptance as established by the Owner.

Final acceptance will not be issued until all punch list items have been completed.

1.13. **CONTRACT CLOSE-OUT**

Notification:

The Contractor shall provide the Owner and Engineer 10 DAYS WRITTEN NOTICE requesting final inspection.

Final Submittals:

At the time of the Contractor's request for final inspection, Contractor shall provide to Owner the following material which the Contractor shall have accumulated and retained during the course of the project:

- One set of all project submittals and all equipment and material warranties/guarantees as provided by all appropriate suppliers or manufacturers.
- One set of "record drawings" showing all revisions to the original Contract Documents. Drawings shall also show routing of underground outside utilities and conduits with actual dimensions from buildings or other known landmarks.
- Any and all other documents, keys, manuals, etc. required by the SPECIFICATIONS.
- Clean-up: At completion of the job, the Contractor shall remove all waste products, dust, dirt, debris, packaging, trash, fingerprints, grease containers, and other deleterious materials and marks from the site. Refer to individual specification sections for special cleaning required by that section. Contractor is expected to leave the project in spotless, "like new" condition.
- Final Payment: The Contractor's final payment requisition shall include Consent of Surety Company to Final Payment form and Contractor's Final Payment Affidavit.

1.14. **CONTRACTOR'S RESPONSIBILITY DURING THE WARRANTY PERIOD**

Warranties:

The Contractor shall guarantee all work against defects in materials, equipment, or workmanship for a period of one year from the date of final acceptance. The Contractor shall also provide any additional warranties and guarantees of work items and components as hereinafter specified.

Correction of Defects:

The Contractor will receive no additional compensation for work performed during the one year warranty period.

1.15. **STANDBY TIME PROVISIONS**

At any time during the contract performance period, the Owner may terminate the contract for unforeseen causes. However, in lieu of terminating the contract, the Owner may opt to issue a temporary stop work order and activate standby time provisions.

If activated, standby time will be paid to the Contractor based on actual rental rates of equipment and labor rates of personnel on site during that time.

The Owner reserves the right to activate, or not to activate, standby time provisions, as it deems appropriate. Activation must be in the form of a change order to the contract.

1.16. **HOLD HARMLESS AND INDEMNIFICATION**

The Owner and/or Engineer shall not be liable or responsible for and the Contractor shall indemnify and hold harmless the Owner and Engineer from and against any and all claims and damages of every kind, for injury to or death of any person or persons and from damage to or loss of property

arising out of or attributed, directly or indirectly, to the Contractor. This indemnity and hold harmless provision shall not be limited by the specification of insurance coverage required to be maintained by the Contractor. Contractor further agrees to obtain in writing from his contractors, subcontractors, and consultants, the same indemnity and agreement to hold harmless as stated above. Contractor shall procure contractual liability insurance covering contractor's obligations set forth in this paragraph.

1.17. **DISPUTES**

Any dispute concerning a question of fact arising under this contract, not disposed of by agreement, shall be resolved in accordance with the dispute resolution process set forth in Chapter 2260, Government Code, V.T.C.A.

2. PRODUCTS

2.1. **CONSTRUCTION MATERIALS**

Materials:

All materials shall be new and of the quality specified. Materials shall be free from defects. Where manufacturer's names are mentioned in the specifications, it has been done in order to establish a standard of quality and construction, not to preclude the use of equal or superior materials or products of other manufacturers. However, substitutions must have Engineer's prior approval. Unless otherwise indicated in the specifications or drawings, equipment and material shall be installed in accordance with the manufacturer's recommendations and shall include such tests as manufacturer recommends.

Storage and Protection of Materials:

All materials shall be suitably stored to be protected from damage. Watertight storage facilities of suitable size with floors raised above the ground shall be provided for all materials subject to damage from exposure to the weather. Other materials shall be stored on blocks off the ground. Materials shall be stored to permit easy access for inspection and identification. Any material which has deteriorated, become damaged or otherwise unfit for use shall not be used in the work (as judged by Engineer). Upon completion of all work, or when directed, the Contractor shall remove storage facilities from the site.

3. EXECUTION

3.1. **CONSTRUCTION SITE AND JOB CONDITIONS**

Supervision:

The Contractor's Superintendent shall be on site at all times that work is in progress. The Contractor shall not allow any unsafe or unsanitary conditions to develop as a result of Contractor's operations.

Site Maintenance:

The Contractor shall not allow trash or debris to accumulate on the site. At the end of the contract, Contractor shall clean the entire area of any litter resulting from Contractor's operations. The Contractor shall maintain the premises as clean and presentable as good construction practices will allow at all times.

Utilities:

Water and electrical power will not be furnished by the Owner. Any temporary connections or appurtenances shall be provided by the Contractor at no cost to the Owner and removed from the premises at the conclusion of the contract.

Employee Records:

The Contractor and each subcontractor shall keep, or cause to be kept, on the jobsite an accurate record showing names and occupations of all laborers, workmen, and mechanics employed by Contractor in connection with the project and the sum per hour paid in dollars and cents. The Owner shall be allowed to inspect such records pursuant to V.T.C.A., Gov. Code, Section 2258.024.

Temporary Toilets:

The Contractor shall provide and maintain in neat, sanitary condition toilets and other necessary accommodations for employees' use to comply with the regulations of the State Department of Health or other jurisdictions.

Fire Protection:

The Contractor shall take stringent precautions against fire. Open fires are not allowed unless approved in writing by Owner.

3.2. OCCUPATIONAL SAFETY AND HEALTH STANDARDS

The work and the Contractor's operational activities shall comply with the applicable provisions of the U. S. Department of Labor, Occupational Safety and Health Administration's safety and health regulations for construction and with applicable Occupational Safety and Health Standards.

3.3. PROTECTION OF PUBLIC

The Contractor shall be responsible for public safety at the construction site. All temporary fencing, barricades, warning lights, signs, and flagmen shall be provided and maintained by Contractor as needed. The Contractor shall maintain security of the construction site.

3.4. SITE PHYSICAL DATA

Information furnished below is for the Contractor's review. However, it is expressly understood that the Owner and Engineer are not responsible for any interpretation or conclusion drawn there from by the Contractor. The Owner and Engineer also are not responsible for any lack of information herein pertaining to physical conditions at the site. The Contractor shall make every effort possible to familiarize himself with and research the conditions to be expected at the site.

Groundwater:

Subsurface groundwater conditions and elevations may change. Changes in groundwater elevations shall not be just cause for increased compensation.

3.5. PROTECTION OF SITE

The Contractor is notified that construction will occur adjacent to active public recreational facilities, private property, and environmentally sensitive areas. The Contractor is hereby notified that adverse working conditions may exist, and the necessary allowances and precautions shall be made to avoid damaging public and private property and vegetation of adjacent property. Unauthorized damage to any existing roadways, utilities, building facilities, structures, or plant life shall be repaired by the Contractor at no expense to the Owner.

Contractor shall be present during the pre and post video survey of the site, roadway, offloading and transporting areas. Contractor is liable for any damages evident in the post-video survey and shall repair the damaged areas at no expense to the Owner. This includes, but is not limited to, reseeding damaged areas of vegetation, replanting/replacing damaged trees and landscaping, and repairing damaged roadway.

Utility locations have not been field verified. It shall be the Contractor's responsibility to verify the condition of existing utilities and locations thereof prior to bidding.

The Contractor shall protect all vegetation adjacent to the construction site. If Contractor's work will require removal or destruction of vegetation, the Contractor shall obtain approval of Owner

prior to removal. The Contractor shall be held liable for removal of vegetation without Owner's prior approval.

The drawings show the locations of all known surface structures pertinent to the work. The locations of surface and subsurface features shown on the drawings are not exact. In the case of underground or underwater obstructions such as existing water, sewer, storm sewer, gas, electrical lines, piling, debris, or partial structures that are not shown on the drawings, their location is not guaranteed.

The Owner assumes no responsibility for failure to show any or all these structures on the drawings or to show them in their exact location. Failure to show these in the Contract Documents will not be considered sufficient basis for claims for additional compensation for extra work in any manner whatsoever, unless the obstruction encountered is such as to necessitate substantial changes in the lines or grades, or requires the building of special work for which no provision is made.

It is assumed that as elsewhere provided the Contractor has thoroughly inspected the site, is informed as to the correct location of surface structures, has included the cost of such incidental work in the price bid, and has considered and allowed for all foreseeable incidental work due to variable subsurface conditions, whether such conditions and such work are fully and properly described on the drawings or not. Minor changes and variations of the work specified and shown on the drawings shall be expected by the Contractor and allowed for as incidental to the satisfactory completion of a whole and functioning work or improvement.

3.6. MISPLACED MATERIAL

Should the Contractor, during the progress of the construction, lose, dump, throw overboard, sink, or misplace any material, plant, machinery or appliance, which in the opinion of the Engineer may be dangerous to or obstruct navigation, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, until the same are removed.

Should the Contractor refuse, neglect or delay compliance with the above requirements, such obstructions may be removed by the Owner, and the cost of such removal may be deducted from any money due or to become due to the Contractor, or may be recovered under his bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C 410 et seq).

3.7. LAYOUT OF WORK AND SURVEYS

The Contractor, at Contractor's expense and using electronic surveying equipment, shall be responsible for establishing base lines, and bench marks if applicable, and staking structure layout for the limits of the project. The Contractor shall also be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the drawings. It is Contractor's responsibility to maintain and preserve all stakes and other marks if such marks are destroyed by Contractor through Contractor's negligence prior to their authorized removal.

3.8. ARCHEOLOGICAL MONITORING

The Antiquities Code of Texas, established by Article 6145-9 of Vernon's Texas Civil Statutes, applies to this project. Violations of the Code are subject to penalties as provided by the Code. Copies of the Code may be obtained from the Texas Antiquities Committee, P. O. Box 12276, Austin, Texas.

3.9. UNDERGROUND OBSTACLES

Pipelines and/or other existing underground installations and structures in the vicinity of the work may be present. The Contractor shall make every effort to locate all underground obstacles and/or pipelines by prospecting in advance of all trench excavation. Any damage to pipelines, including

any resulting environmental contamination, caused by the construction activities shall be repaired/cleaned-up by the Contractor. Any delay or extra cost to the Contractor shall not constitute a claim for extra work, additional payment, or damages.

3.10. CUTTING AND PATCHING

Where indicated in the Contract Documents, this project requires cutting into existing construction for the performance of the work and requires subsequent fitting and patching to restore the existing work to original condition.

Utilities:

Contractor shall not cut or patch utilities until all necessary approvals and coordination requirements are accomplished.

Before cutting services that are to remain permanently or temporarily in service, Contractor shall provide bypass system as necessary to maintain service.

After bypass and cutting, Contractor shall cap, valve or plug and tightly seal remaining portion of service piping or conduit to prevent entrance of moisture and foreign matter.

Structural Work:

Contractor shall not cut or patch structural work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratio.

Removing and Replacing Pavement:

Unless otherwise directed by the Engineer, the Contractor shall saw cut to remove pavement. The Contractor shall not cut or patch pavement in a manner that would result in a reduction of load-carrying capacity. The Contractor shall replace all pavements, driveways, sidewalks, and curb and gutters with like or better pavement sections.

Inspection:

Before cutting, Contractor shall examine items to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, Contractor shall take corrective action before proceeding with the work.

Contractor shall meet at the work site with all trades involved in cutting and patching. Contractor shall review areas of potential interference and conflict between the various trades and shall coordinate layout of the work and resolve potential conflicts before proceeding with the work.

3.11. RECORD DRAWINGS

The Contractor shall maintain on a separate set of the Contract Documents, a record of all changes made during construction. The Contractor shall be responsible for keeping these records and neatly noting with colored pencil or ink all changes. Progress payments will not be made to the Contractor unless such records are maintained.

Record Drawings shall be turned over to the Owner/Engineer at the completion of the project. Final payment will not be made until "Record Drawings" have been received and accepted by the Owner/Engineer.

4. MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for the Work in this Section; all the costs of such Work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 10 00

SUMMARY OF WORK

1. GENERAL

The Contractor shall provide all plant, labor, equipment, supplies, and materials to perform all operations in connection with excavating, construction, transporting, placing and grading, as indicated on the Drawings and specified herein.

1.1. LOCATION OF WORK

The project site is located at the Sabine Pass Port Authority, Jefferson County, Texas.

1.2. CONSTRUCTION ACCESS

Access to the project Site is via SH 87 through Sabine Pass (northeast on Broadway then southeast on 1st Avenue) to the entrance gate to the Sabine Pass Port Authority property.

The Engineer shall have unlimited access to the project work site including, but not limited to: all equipment, staging areas and work areas until final project closeout. For any equipment not accessible from shore, the Contractor shall be required to furnish, at the request of the Engineer or Owner, suitable transportation from the shore to and from the various pieces of plant, to and from the placement site, as required in the Contract Documents.

The Engineer or his representative is to have free access to the materials and the work at all times for laying out, measuring and inspecting and the Contractor is to afford him all necessary facilities, transportation and assistance for doing so. Should the Contractor refuse, neglect or delay compliance with these requirements, the specific facilities may be furnished and maintained by the Engineer and the cost thereof will be deducted from any amounts due or to become due the Contractor.

1.3. PROJECT SITE CONDITIONS

It is the Contractor's responsibility to familiarize himself with the project site prior to bidding, and to verify to his satisfaction the accuracy of the information provided. The information depicted on the site plans represents the results of surveys made on the dates indicated on the plans and can only be considered as indicating the general conditions existing at that time.

1.4. OWNER OBTAINED PERMITS

US Army Corps of Engineers

1.5. CONTRACTOR OBTAINED PERMITS

Any necessary permits not mentioned above in paragraph 1.4 shall be the responsibility of the Contractor. The Contractor shall make application for and pay for any necessary building/construction permits, material hauling permits, permit fees, temporary or permanent utility interruptions and relocations fees, and any other permits required for project completion.

1.6. CORRESPONDENCE

All correspondence is preferred to be sent via email, otherwise, all mail pertinent to the Work shall be sent by express mail, unless delivery by regular mail can be accomplished WITHIN THREE (3) DAYS or by facsimile transmission followed by regular mail of the original copies. Receipt of such mail will be promptly acknowledged when acknowledgment is requested. Address all correspondence in duplicate to:

Attn: W. L. "Bill" Worsham, PE
LJA Engineering, Inc
5316 Highway 290 West, Suite 150
Austin, TX 78735
Fax (512) 439-4716
bworsham@ljaengineering.com

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 31 00

PROJECT SCHEDULE

1. GENERAL

1.1. DESCRIPTION

Scope:

This section covers the construction project schedule requirements, submittals of project schedule, and required completion date.

1.2. PROJECT SCHEDULE

The Work shall be substantially completed WITHIN 75 DAYS from Notice to Proceed unless otherwise directed by the Engineer.

1.3. CONSTRUCTION SCHEDULE

WITHIN FIVE DAYS after issuance of the Notice to Proceed, the Contractor shall submit, for review by the Engineer, a Construction schedule.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for the Work in this Section; all the costs of such Work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 33 00

SUBMITTALS

1. GENERAL

1.1. SUBMITTAL PROCEDURES

Materials furnished by the Contractor shall not be incorporated into construction before review by Engineer, except as specified herein.

Materials shall be submitted for review in the manner specified herein and under the applicable specific technical provisions. The methods of review may include submission of samples, shop drawings (including stock prints), catalogs (including cuts and descriptive literature), schedules, certificates, or field inspection. All materials for which no specific method of review is specified shall be subject to field inspection and review.

The Contractor shall certify on all submittals that the material being proposed conforms to Contract requirements. The Contractor shall present all materials for each specification section at the same time as one submittal, titled with project title and contract number. Incomplete submittals and submittals with inadequate data will be rejected.

The following detailed instructions include various methods of material review that shall be followed in submitting requests for review. Review will be made by returning one copy appropriately stamped and signed. Items returned stamped "Conforms to Design Concept" or "Conforms to Design Concept With Revisions As Noted" shall be considered as adequate to incorporate into the construction. Should the Contractor desire the return of more than one copy, photocopy reproductions or ammonia prints will be returned in the additional number desired, up to three copies.

Review time: All requests for material review shall be submitted in sufficient time so as not to delay the progress of the work, allowing five days after receipt by the Engineer for review.

Mailing address: Unless specified elsewhere, all requests for materials review shall be forwarded in duplicate to:

Attn: W. L. "Bill" Worsham, PE
LJA Engineering, Inc
5316 Highway 290 West, Suite 150
Austin, TX 78735
Fax (512) 439-4716
bworsham@ljaengineering.com

Requests shall be accompanied by a transmittal letter from the Contractor stating that the items of material submitted are the Contractor's selection for construction under the Contract and requesting review. Additionally, the Contractor shall forward to the Engineer one copy of the transmittal letter and one copy of the submittal data.

1.2. PROPOSED PRODUCTS LIST

In those instances where the specific technical provisions cite a brand name product, submittal of the material for review is not required unless required by the specific technical provisions. However, the Contractor shall advise the Engineer in writing (with a copy to the mailing address shown herein) that the specified brand name product will be used.

Materials which are specified by reference to an industry standard or specification which is also stamped or otherwise shown on the material itself and is readily identified in the field, do not require submittal of the material for review.

1.3. PRODUCT DATA

Brand name(s): Equivalent items are not acceptable unless specifically authorized in the Specifications by use of the term "or equal". Should the Contractor propose an "equal" when "or equal" is specified, the Contractor shall include with the submittal, sufficient technical documentation to readily demonstrate the material proposed is, in fact, equal to the brand name(s) specified. Submittals will be rejected if the Contractor fails to submit such documentation or such documentation fails to demonstrate the equality of the item.

1.4. MANUFACTURER INSTALLATION INSTRUCTIONS

When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to the Engineer in quantities specified for product data.

Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.5. MANUFACTURER CERTIFICATES

Submit four copies of certificates covering conformity to requirements of referenced Specifications or standard test results as follows:

Certificates of conformity to referenced Specifications shall consist of a statement on the manufacturer's letterhead that the materials listed conform to the requirements of the referenced Specifications referred to by number.

Certificates of standard test results shall consist of statements on the test laboratory's letterhead of the tests made and the tests results. The tests shall have been performed within one year of submittal of the reports for approval. Test reports shall be accompanied by certificates from the manufacturer certifying that the material and equipment proposed to be supplied is of the same type, quality, manufacture and make as that tested.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 35 43

PROTECTION OF ENVIRONMENT

1. GENERAL

This section addresses the prevention of pollution and other environmental damage as the result of construction operations under this contract and for those measures set forth in the Contract Documents. For the purpose of this specification, pollution and other environmental damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes. The control of pollution and damage requires consideration of air, water, land and the marine environment and includes management of construction activities, visual aesthetics, noise, solid waste, radiant energy, and radioactive materials, as well as other pollutants. The Contractor shall fulfill these specifications at the Contractor's expense.

1.1. SCOPE

This section covers all work necessary to comply with the requirements of the Owner and Contractor furnished permits and all applicable Federal, State, and local laws governing this Work and for implementing, installing, and maintaining all required Best Management Practices (BMPs).

1.2. DESCRIPTION OF WORK

In order to comply with the requirements of this Section and the Owner and Contractor furnished construction permits, the Contractor shall:

- Develop and submit a Contractors Erosion and Sedimentation Control Plan (CESCP). The CESCP shall, at a minimum include and address the following:
 - Description of BMP's and Drawings
 - Installation, Maintenance, and Inspection Procedures
 - BMP Removal

The Contractor shall develop and submit a copy of the CESCP to the Engineer for review WITHIN 10 DAYS prior to the start of any onsite construction activities. The CESCP shall be submitted in accordance with Section 01 33 00 - SUBMITTALS.

2. PRODUCTS

The Contractor is responsible for the selection and adequacy of all materials and equipment used for compliance with the Owner and Contractor supplied permits.

3. EXECUTION

3.1. GENERAL

All debris or deleterious material resulting from construction shall be removed from the work area and prevented from entering waters of the State.

All work operations shall be conducted in a manner that causes little or no adverse environmental impact to adjacent areas. If at any time, as a result of project activities, water quality problems develop (including equipment leaks or spills), operations shall cease and the Owner shall be contacted immediately.

3.2. PROTECTION OF ENVIRONMENTAL RESOURCES

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine all activities to areas defined by the drawings and specifications. Environmental protection shall be as stated in the following subparagraphs.

3.3. PROTECTION OF LAND RESOURCES

Prior to the beginning of any construction, the Engineer shall identify all land resources to be preserved within the Contractor's work area. The Contractor shall not remove, cut, deface, injure, or destroy land resources including vegetation, trees, shrubs, vines, grasses, top soil, and land forms without direct written permission from Engineer. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is allowed, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following paragraphs.

- Work Area Limits

Isolated areas (if any) within the work area which are to be saved and protected shall also be identified by the Engineer and marked or fenced by the Contractor. All monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the marks shall be visible. The Contractor shall convey to all subcontractors and personnel the purpose of marking and/or protection for all necessary objects.

Trees, shrubs, vines, grasses, land forms, and other landscape features within the work area to be preserved shall be identified by the Engineer, and clearly delineated by the Contractor, by marking, fencing, or wrapping with boards, or any other techniques approved by the Engineer. Unless otherwise approved by the Engineer, no trees, shrubs, vines, grasses or other vegetation will be harmed or destroyed by the Contractor for any purpose.

- Retardation and Control of Runoff

Runoff from the construction site shall be controlled by construction of diversion ditches, benches and berms to retard and divert runoff to protected drainage courses, and any measures required by area wide plans approved under paragraph 208 of the Clean Water Act. Dikes will be constructed using material available in the dredge material placement site, as shown on the Contract Drawings, and maintained in continuous repair.

- Temporary Excavations

Embankments for the work area shall be controlled to protect adjacent areas from despoilment.

- Disposal of Chemical Waste

Chemical waste shall be stored in corrosion resistant containers, removed from the work area and disposed of in accordance with Federal, State, and Local regulations. The Contractor shall perform all maintenance of equipment, including but not limited to refueling, filter changes, and replacement of hydraulic lines in a manner so as not to contaminate soils, ground or surface waters, or any other natural resources.

- Disposal of Discarded Materials

Discarded materials other than those which can be included in the solid waste category will be handled by the Contractor as directed by the Engineer or Port Authority.

3.4. PROTECTION OF WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management and control to avoid pollution of surface and ground waters. Special management techniques as set out below shall be implemented to control water pollution by the listed construction activities, which are included in this contract. As soon as possible the contractor shall clear all waterways of temporary embankments, temporary bridges, matting, falsework, debris, or other obstructions placed during construction operations that are not part of the finished work. The Contractor is responsible for maintaining area drainage during construction. Water shall not be allowed to pond on any roadway surface, and Project Work shall not impede runoff from adjacent properties. Comply with all applicable Federal, State, and local Permits.

3.5. PROTECTION OF FISH AND WILDLIFE RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to and damage of fish and wildlife. Species that require specific attention along with measures for their protection will be listed by the Contractor prior to beginning of construction operations.

3.6. PROTECTION OF AIR RESOURCES.

The Contractor shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with the applicable air pollution standards of the State of Texas and all Federal emission and performance laws and standards.

3.7. PROTECTION OF SOUND INTRUSIONS

The Contractor shall keep construction activities under surveillance, and control to minimize damage to the environment by noise. If booster pumps are used on the project, the Contractor shall provide adequate muffler systems and erect a sound barrier to deflect noise in the waterward direction and away from buildings.

3.8. DISPENSING OF FUEL

Secondary containment, which is capable of holding 110% of the tank contents, must be provided by the Contractor for each fuel storage tank. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bibb. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes disposed of offsite in an approved area. Should any spilling of fuel occur, the Contractor shall immediately contain the spill and contact the appropriate local authorities. The Contractor will be solely responsible for any fines, penalties or other legal activities related to fuel spills.

3.9. TEMPORARY SANITARY FACILITY

The Contractor shall supply and maintain, at minimum, one (1) temporary sanitary facility for the use of land based employees and subcontractors. The facility shall be conveniently located in the vicinity of the beach disposal operation, but away from residential buildings along the coastline. The facility shall be removed at the end of the project.

3.10. STORAGE OF LUBRICANTS

All lubricants and other potential liquid pollutants shall be stored in sealed, non-corrosive containers. Individual containers shall be stored in metal pans with borders banded up and welded at the corners right below the bibb. Pans shall be deep enough to prevent contamination of the ground. Pans shall be kept clean of all spillage or leakage.

3.11. CONSTRUCTION DEBRIS

The Contractor shall collect and properly dispose of all trash and construction debris in accordance with all local and state solid waste management regulations and practices. No construction waste material shall be buried on the Project Site. The Contractor shall store all waste materials in approved metal dumpsters, or other containers approved by the Engineer. Solid wastes (including clearing debris) shall be placed in containers which are emptied on a regular schedule. The Contractor will empty containers when three-quarters full or as required by local and state regulation, and the contents hauled away for proper disposal. No construction waste material shall be buried within the Project limits. All handling and disposal shall be conducted to prevent contamination. No steel, cables, wire, pipe, drums OR ANY OTHER DEBRIS shall be permitted to be disposed overboard into the waters controlled by Owner or the Sabine-Neches Waterway. If such debris is found, the debris shall be removed by the Contractor at his own cost, or the cost of removal deducted from the Contractor's final payment.

3.12. EQUIPMENT MAINTENANCE

The Contractor's equipment used in excavation and filling operations shall be inspected, cleaned, and maintained to prevent loss of petroleum products.

3.13. EROSION AND SEDIMENT CONTROL

Burn-off:

Burn-off of ground cover is not permitted.

Erosion Protection:

Earthwork brought to final grade shall be immediately finished. Protect side and back slopes upon completion of rough grading. Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. All areas disturbed that are to remain dormant for LONGER THAN 21 CALENDAR DAYS shall be temporarily stabilized with fast germinating temporary seed or shall be protected by mulch. Temporary stabilization shall be in place WITHIN 14 DAYS of last disturbance. Adequate seeding and vegetative cover shall be maintained. A ground cover density of 70% or greater must be maintained. The contractor shall re-seed, water, and fertilize as necessary to maintain ground cover. Use the following methods to prevent erosion, control sedimentation, and prevent waterborne soil from entering surface waters and ditches for all areas of excavation, clearing and grubbing, and earth fill.

Mechanical Control:

Divert runoff by constructing ditches or berms, and then filter runoff using filter fabric dams, sandbag berms, or other methods approved by the Engineer.

3.14. SEDIMENT CONTROL

Prior to project initiation, the upland project construction areas must be isolated from water bodies by the use of BMPs to confine sediment. BMPs used for sedimentation control shall include at least one of the following:

- Silt Fencing
- Straw Bale Dikes
- Diversion Dikes

As construction progresses and unexpected seasonal conditions dictate, more sedimentation control facilities may be required to ensure sufficient siltation control is maintained. Therefore, during the course of the project, the Contractor shall review the in-place sedimentation control systems and provide additional facilities and structures as required to protect adjacent wetlands and waters.

3.15. EROSION CONTROL

Disturbed areas must be stabilized to prevent the introduction of sediment to adjacent wetlands or water bodies during wet weather conditions (erosion). At least one of the following BMPs must be maintained and in-place until the excavation, cleared and grubbed, and earthfill areas have been stabilized:

- Mulch
- Temporary Vegetation

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 40 00

QUALITY CONTROL

1. GENERAL

1.1. QUALITY CONTROL

The Contractor will establish and maintain quality control for all work performed and all Products supplied to assure compliance with the Specifications.

The Contractor will maintain written records of his quality control tests, inspections, surveys or other measures. The Contractor will maintain written records of corrective action required and taken to assure these Specifications are followed.

The Contractor shall perform surveys during construction as the work progresses to verify the lines, grades, and thicknesses of the installed materials. The results of the surveys shall be submitted to the Engineer for review.

All work performed shall be in conformity with the lines, grades, slopes, cross sections, and dimensions shown in the Plans. If the Plans, Special Provisions, or these Specifications state specific tolerances, the work shall be performed within those limits. The Contractor shall not deviate from the approved Plans and Working Drawings unless the Engineer approves in writing.

At the Owner's request the Contractor will provide copies of any quality control records requested.

1.2. CONSTRUCTION SURVEYS

Surveys performed during construction shall be done at no additional expense to the Owner.

The Contractor shall perform all construction surveys, using electronic surveying equipment, required to layout and set any construction stakes and marks which are needed to establish the lines, grade, slopes, and cross sections. A baseline offset from the work area shall be established, utilizing benchmarks and monuments provided on the drawings, at a location that shall not be disturbed by construction activities and located close to the work so that it provides alignment and location reference. In addition, the Contractor shall perform surveys during construction to ensure that construction activities are within the tolerance specified. The Engineer shall be allowed to review the surveys prior to the start of materials placement.

The electronic surveying method must be approved, in writing, by the Engineer, prior to beginning placement of Products on the Project.

Surveys will be of sufficient frequency and accuracy during construction so that the Engineer can determine that existing materials are being removed and any new products are being placed within the tolerances of the Specifications.

The results of all construction surveys shall be submitted to the Engineer in a timely manner for review. The data shall be submitted to the Engineer on an electronic media (IBM compatible, ASCII format) in delimited files of easting, northing, and elevation (x,y.z), where elevation is indicated as negative for depths recorded below NAVD88 Datum 0.0 elevation. In addition, the data file shall list the project name, surveyor's name, area surveyed, date of survey, and the vertical (NAVD88) and horizontal (NAD83 Texas State Plane South Central – Feet) datums.

The location of each cross section profile surveyed shall be referenced to the stationing shown on the project site plan. The Contractor shall plot the cross sections and profiles on a scale agreeable to both the Contractor and the Engineer, and submit hard copies to the Engineer for review.

ALL CONSTRUCTION SURVEY DATA SUBMITTED TO THE ENGINEER SHALL BE REFERENCED TO THE NAVD88 VERTICAL DATUM - FEET AND NAD83 TEXAS STATE PLANE SOUTH CENTRAL – FEET HORIZONTAL DATUM.

All bathymetric and topographic construction surveys shall be performed to the nearest 0.10 foot at the survey points and at all lines and breaks. The survey equipment specifications and the surveyor's statement of qualifications shall be submitted to the Engineer for approval.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 42 16

DEFINITIONS AND STANDARDS

1. GENERAL

1.1. SUMMARY

This section specifies requirements for compliance with governing regulations, codes, and standards.

Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes, and standards.

1.2. DEFINITIONS

Definitions contained in this section are not necessarily complete but are general to the extent that they are not defined more explicitly elsewhere in the contract documents.

"Indicated" refers to graphic representations, notes or schedules on the drawings, or other paragraphs or schedules in specifications, and similar requirements in Contract Documents.

Terms such as "shown", "noted", and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Engineer", "requested by the Engineer", and similar phrases. However, no implied meaning shall be interpreted to extend the Engineer's responsibility into the Contractor's area of construction supervision.

The term "approved", where used in conjunction with the Engineer's action on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Engineer stated in the Uniform General Conditions and Special Conditions. Such approval shall not release the Contractor from responsibility to fulfill contract document requirements unless otherwise provided in the contract documents.

"Engineer" refers to LJA Engineering, Inc.

"Owner" refers to Jefferson County

The term "Regulations" includes laws, statutes, ordinances, and lawful orders issued by authorities having jurisdiction, as well as rules.

The term "Conventions" are agreements within the construction industry that control performance of the Work, whether they are lawfully imposed by authorities having jurisdiction or not.

The term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations".

The term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations".

The term "provide" means "to furnish and install, complete and ready for the intended use".

An "installer" is an entity engaged by the Contractor, either as an employee, subcontractor, or sub-subcontractor, for performance of a particular construction activity, including installation,

erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

A "Project site" is the space available to the Contractor for performance of the work, either exclusively or in conjunction with others performing other construction as part of the project. The extent of the project site is shown on the drawings.

A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on and, if required, interpret results of those inspections or tests.

1.3. INDUSTRY STANDARDS

Applicability of Standards:

Except where contract documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into contract documents. Such standards are made a part of the contract documents by reference. Individual sections indicate which codes and standards apply to that section. The Contractor shall purchase and maintain available at the project site one copy of all specified standards, codes, documents or reports that have been referenced in the contract documents.

Referenced standards take precedence over standards that are not referenced but recognized in the construction industry as standard practice.

Publication Dates:

Where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.

Conflicting Requirements:

Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced unless the Contract Documents indicate otherwise. Refer requirements that are different but apparently equal and uncertainties as to which quality level is more stringent to the Engineer for a decision before proceeding.

In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values as noted or appropriate for the context of the requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.

Copies of Standards:

Each entity engaged in construction on the project is required to be familiar with industry standards applicable to that entity's construction activity.

Abbreviations and Names:

Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable to the context of the text provision.

Industry Standards:

In addition to Federal, state and local ordinances, the latest edition of industry standards shall apply as referred to in the drawings and Specifications SECTION 01 42 19.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 42 19

CODES, STANDARDS, AND SPECIFICATIONS

1. GENERAL

The standards under which the work is to be performed or tested are specified throughout the contract documents. Where such standards are specified, it shall be understood that the latest revision or edition at time of award shall apply.

In referring to standards the following abbreviations have been used:

Name	Abbreviation
American Association of State Highway & Transportation Officials 444 North Capitol Washington, DC 20001	AASHTO
American Concrete Institute Box 19150, Redford Station Detroit, MI 48219	ACI
American Institute of Steel Construction 1221 Avenue of the Americas New York, NY 10020	AISC
American Institute of Timber Construction 333 W Hampden Avenue Englewood, CO 80110	AITC
American Iron and Steel Institute 1000 - 16th Street NW Washington, D.C. 20036	AISI
American National Standards Institute 1430 Broadway New York, NY 10018	ANSI
American Petroleum Institute 2100 "L" Street NW Washington, D.C. 20037	API
American Plywood Association P.O. Box 11700 Tacoma, WA 98411	APA
American Public Works Association	APWA

Name	Abbreviation
American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103	ASTM
American Society of Civil Engineers 345 East 47th Street New York, NY 10017	ASCE
American Society of Heating, Refrigerating, and Air Conditioning Engineers	ASHRAE
American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017	ASME
American Water Works Association 6666 West Quincy Avenue Denver, CO 80235	AWWA
Architectural Woodwork Institute	AWI
American Welding Society 2501 NW 7th Street Miami, FL 33125	AWS
American Wood Preservers Association	AWPA
Associated General Contractors of America 1957 East Street NW Washington, D.C. 20006	AGC
Concrete Plant Manufacturers Bureau 900 Spring Street Silver Springs, MD	CPMB
Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60195	CRSI
Federal Specification Board c/o Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402	U.S. Fed. Spec. Mil. Spec.

Name	Abbreviation
Institute of Electrical and Electronics Engineers, Inc. 445 Hoes Lane, P.O. Box 1331 Piscataway, NJ 08855-1331	IEEE
Insulated Power Cable Engineers' Association 192 Washington Street Bellmount, MA 02178	ICEA
International Electro Technical Commission 1, Rue De Varembe Genève, Switzerland	IEC
Joint Industrial Council	JIC
Manufacturer's Standards Society	MSS
National Bureau of Standards c/o Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402	NBS
National Association of Corrosion Engineers P.O. Box 1499 Houston, TX 77001	NACE
National Electrical Manufacturers Association 2101 L Street NW Washington, D.C. 20037	NEMA
National Fire Code	NFC
National Fire Protection Association Batterymarch Park Quincy, MA 02269	NFPA
National Forest Products Association 1619 Massachusetts Avenue NW Washington, D.C. 20036	NFPA
Occupational Safety and Health Administration US Department of Labor Governmental Printing Office	OSHA

Name	Abbreviation
Washington, D.C. 20402	
Society of Automotive Engineers 485 Lexington Avenue New York, NY 10017	SAE
Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15213	SSPC
Texas Department of Transportation 7901 North IH-35 Austin, Texas 78761-5426	TXDOT
Underwriters Laboratories 333 Pfingsten Road Northbrook, IL 60062	UL
Uniform Building Code	UBC
Uniform Mechanical Code	UMC
Uniform Plumbing Code	UPC
Western Wood Products Association 1500 Yeon Bldg. Portland, OR 97204	WWPA

Additional abbreviations will be defined as they appear in the specifications.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. Measurement and Payment

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 50 00

CONSTRUCTION FACILITIES

1. GENERAL

1.1. DESCRIPTION

This section covers the following:

- Construction Facilities
- Construction Aids and Safety Precautions
- Special Controls
- Sanitary Facilities and Domestic Water Supply
- Traffic Control at Project Site
- Telephone Services and Communications Systems
- Navigation
- Signal Lights
- Parking and Office Areas
- Temporary Power
- Temporary Buildings
- Use of Project Site
- Protection of Property

2. PRODUCTS

Not applicable.

3. EXECUTION

3.1. CONSTRUCTION FACILITIES

Temporary Facilities Supplied by Contractor: Contractor shall supply temporary services and facilities required for the execution of the Work, such as electrical power distribution as may be required, compressed air, fuel, temporary lighting, sanitary facilities, field office, and other facilities required.

The Contractor shall coordinate location of office, laydown areas, etc. with Owner and the Engineer.

3.2. CONSTRUCTION AIDS AND SAFETY PRECAUTIONS

The Contractor shall comply with applicable laws, ordinances, rules, regulations, and orders pertaining to personnel, construction machinery and equipment, hoists, cranes, staging, materials handling facilities, tools, appliances, and other construction aids. The Contractor shall provide first aid facilities where required.

The Contractor shall provide barriers and shall post "NO TRESPASSING" and other construction safety signs as necessary to protect the public. Appropriate barriers should be erected around all open excavations.

3.3. SPECIAL CONTROLS

Water Control:

The Contractor shall perform grading and other operations to maintain site drainage. Surface water shall not be allowed to accumulate in excavations. The Contractor shall dispose of surface and subsurface water in accordance with local regulations and SECTION 01 35 43 – PROTECTION OF THE ENVIRONMENT.

Archeological and Historic Preservation Control:

If during the course of construction, the Contractor discovers any archaeological or historic properties, all land-disturbing activities in the vicinity of the properties shall be halted and the Contractor shall notify the Owner immediately. The Owner will consult with the proper authorities and will obtain permission to proceed. The Contractor will be entitled to time extensions equal to the time the Work is suspended, but will not be entitled to additional compensation.

3.4. SANITARY FACILITIES AND DOMESTIC WATER SUPPLY

The Contractor shall provide sanitary and drinking water facilities to accommodate his employees, the Owner and Engineer to comply with the applicable requirements and regulations.

3.5. TRAFFIC CONTROL AT THE SITE

The Contractor shall provide all required and necessary traffic control throughout the work area including all signs, barricades, signals, and flaggers.

3.6. TELEPHONE SERVICES AND COMMUNICATION SYSTEMS

Telephone service is not currently available at the site. The Contractor will be responsible for making own arrangements for telephone service.

3.7. PARKING AND OFFICE AREAS

The Contractor shall confine parking, etc. to areas acceptable to the Owner.

3.8. TEMPORARY POWER

The Contractor will be responsible for providing their own temporary power. Upon completion of the Work, temporary power shall be removed from the site.

3.9. TEMPORARY BUILDINGS

General:

The Contractor may construct or provide necessary temporary buildings or trailers at acceptable locations within the project area.

Camp:

Camp for employees at the project WILL NOT BE ALLOWED except for facilities for night and weekend security personnel. The Contractor and its employees shall make their own arrangements for lodging.

3.10. USE OF PROJECT SITE

Contractor will not have exclusive or unrestricted use of the Project Site for storage and its operations. Contractor shall recognize and take into account their planning and execution of the Work that the Owner or the Engineer may require access to and use of certain areas or spaces during certain periods. The actual location shall be coordinated with and approved by the Owner and the Engineer prior to the start of mobilization and construction activities. The use area shall be restricted to the temporary storage of construction equipment, materials, and trailer/office. Access to the Work from existing roads and navigation channels shall be provided by the Contractor at his own expense.

The Owner assumes no responsibility for the condition or maintenance of any road, structure, or navigation channel thereon that may be used by the Contractor in performing the work under these specifications or in traveling to and from the site of the work. The Contractor is responsible for constructing, maintaining, and removing any additional access that they deem necessary to the site of the work.

The Contractor shall be responsible for restoring the Contractor use areas, access site, project area, roadway, and other impacted areas to their original condition. No payment will be made to the Contractor by the Owner for any work done in improving, repairing, or maintaining any road or structure thereon for use in the performance of the work under these specifications.

Any damage to the existing roadways that are used for access purposes shall be repaired by the Contractor, and the surface shall be restored to its original condition.

The Contractor shall be responsible for restoring the Contractor use areas, access site, Project area, and other impacted areas to their original condition.

3.11. PROTECTION OF PROPERTY

The Contractor shall not enter upon private property for any purpose without first obtaining permission from the Owner or his duly authorized representative.

The Contractor shall be responsible for the preservation of all public and private property along and adjacent to work contemplated under the contract, and shall use every precaution necessary to prevent damage or injury thereto.

The Contractor shall exercise due care in preventing, and shall be responsible for, damages to structures of all kinds, whether owned by the County or privately, and shall protect from disturbance or damage all land monuments until they have been properly referenced by the Owner.

ENGINEERING REVIEW OF WORK MATERIALS:

The Contractor shall provide the Engineer and Owner, or their authorized agent, access to construction schedules, material testing results, traffic control and safety plans, and any applicable permits required during construction. Documents shall be available for review during working normal hours while construction is in progress.

ACCESS TO WORK AREA:

Access to the Project construction work may be available via State Highway 87 (as described in Section 01 10 00) or via boat from the Sabine-Neches Channel. If required, the Contractor is responsible for coordinating and obtaining all necessary lay down areas, vessel moorage, and boat launching facilities at no additional expense to the Owner.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 71 11

GRADES, LINES, AND LEVELS

1. GENERAL

1.1. CONSTRUCTION SURVEY

General:

Survey control points have been established at the site as shown in the Drawings. Any monuments that are disturbed by construction operations shall be reset by the Contractor in accordance with recognized engineering and surveying practices.

Any monuments not referenced by the Drawings that are disturbed by construction operations shall be reset by the Contractor in accordance with recognized engineering and surveying practice. Property corners, fences or any other indications of property lines shall be referenced by the Contractor prior to construction and reset after completion of construction in accordance with recognized engineering and surveying practice.

Checking:

All working control established by the Contractor may be checked by the Engineer or Owner. Prior to establishing the working control, the Contractor shall provide, at the Engineer's request, sufficient copies of an illustration of the working control relative to pertinent construction. When the Contractor has established the working control, the Engineer shall be notified for a SURVEY CHECK 24 HOURS BEFORE any construction Work is started. All checking by the Engineer will be independent. The responsibility for correctness and adequacy of control shall be borne solely by the Contractor. All original field notes, computations and other records taken by the Contractor for the purpose of quantity and conformance survey shall be furnished promptly to the Engineer. Quantity surveys, unless waived in each specific case, shall be made with the Engineer present.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

SECTION 01 71 11 – GRADES, LINES, AND LEVELS

END OF SECTION

SECTION 01 71 13

MOBILIZATION AND DEMOBILIZATION

1. GENERAL

1.1. MOBILIZATION

This section covers the mobilization of personnel, equipment, temporary security fencing, lay down mats, materials and supplies, and their transport to the job site. Also included is setting up the Contractor's complete construction plant, field office, temporary utilities, sanitary facilities, and other construction facilities, as required for the Contractor's operation, all in adequate time for satisfactory performance of all Work under the Contract.

1.2. DEMOBILIZATION

Demobilization shall include the removal of all construction plant, equipment and accessories, materials, supplies, appurtenances, construction debris and the like from the job site upon completion of the Work.

1.3. PERMITS

The Contractor shall obtain, and pay for, all required building and other County construction permits and comply with applicable laws and regulations regarding mobilization, transport of equipment and materials, personnel and supplies, and the construction and maintenance of temporary facilities including but not limited to: structures, storage sites, laydown areas, and construction utilities.

2. PRODUCTS

Not applicable.

3. EXECUTION

Not applicable.

4. MEASUREMENT AND PAYMENT

4.1. MEASUREMENT

No measurement for Work of this Section will be made.

4.2. PAYMENT

Payment for Mobilization and Demobilization Work of this Section will be made at the lump sum (LS) price for Bid Item No. 017013-x, Mobilization and Demobilization, in the Schedule of Quantities and Prices, which SHALL NOT EXCEED 10% of the Bid Subtotal. Payment for mobilization will be made with the first progress payment and will be equal to 90% of the amount bid for Bid Item No. 017013-x.

The remaining 10% will be paid with the final project payment and will be proportional to the amount of the Contractor Use Areas that have been cleaned and restored to their original condition in a total amount of 10% of the amount bid.

END OF SECTION

SECTION 01 73 20

SELECTIVE DEMOLITION

1. GENERAL

1.1 SUMMARY

- A. The work covered by this section consists of removal of all components of the existing culvert structures, concrete, asphalt roadways, utility poles and miscellaneous materials as shown in the Contract Drawings. Specifically, this Section includes the following:
 - 1. Demolition and removal of selected site elements.
 - 2. Salvage of existing items to be reused or recycled.
- B. See Section 01 74 19 - "Construction Waste Management" for disposal of demolished materials.
- C. See Section 31 11 00 - "Clearing and Grubbing" for site clearing and removal of above- and below-grade improvements.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity, interruption of utility services, use of elevator and stairs, and locations of temporary partitions and means of egress.
- B. Predemolition Photographs or Videos: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.
- C. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
 - 1. Comply with submittal requirements in Section 01 74 19 - "Construction Waste Management."

1.4 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.

- E. Predemolition Conference: Conduct conference prior to demolition.

1.5 PROJECT CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work. All hazardous materials shall be disposed of in accordance with local, state, and federal regulations.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
 - 2. Maintain integrity of existing MEP facilities unless otherwise directed by Contract Documents.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

2. PRODUCTS

Not Applicable

3. EXECUTION

3.1. EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2. UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass

area of selective demolition and that maintain continuity of services/systems to other parts of building.

3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3. PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Comply with requirements for access and protection specified in Section 01 50 00 - "Construction Facilities."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4. SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated on Contract Documents. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 5. Dispose of demolished items and materials promptly. Comply with requirements in Section 01 74 19 - "Construction Waste Management."
- B. Reuse of Building Elements: Do not demolish building elements beyond what is indicated on Drawings without Engineer's approval.
- C. Removed and Salvaged Items:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.

3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.
- 3.5. DISPOSAL OF DEMOLISHED MATERIALS
- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill in accordance with all regulatory standards.
 1. Comply with requirements specified in Section 01 74 19 - "Construction Waste Management."
 - B. Burning: Do not burn demolished materials.
 - C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.
- 3.6. CLEANING
- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

4. MEASUREMENT AND PAYMENT

Measurement:

No measurement for Work of this Section will be made.

Payment:

All work required for Payment for Selective Demolition Work of this Section will be made at the lump sum (LS) price for Bid Item No. 017320-x, Selective Demolition, in the Schedule of Quantities and Prices.

Payment for all work required for demolition and removal of all structural components shall be considered subsidiary to work required under this Bid Item.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

1. GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.2 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 CALENDAR DAYS before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the Work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Engineer's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety

2. PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.

- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

3. EXECUTION

3.1. EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2. PREPARATION

- B. Temporary Support: Provide temporary support of Work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3. PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT

1. GENERAL

1.1. DESCRIPTION

This section includes administrative and procedural requirements for the following:

- Salvaging nonhazardous demolition and construction waste.
- Recycling nonhazardous demolition and construction] waste.
- Disposing of nonhazardous demolition and construction waste.

1.2. DEFINITIONS

Construction Waste:

Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

Demolition Waste:

Building and site improvement materials resulting from demolition or selective demolition operations.

Disposal:

Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

1.3. SUBMITTALS

Landfill and Incinerator Disposal Records:

Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.4. WASTE MANAGEMENT PLAN

General:

Develop plan consisting of waste identification and waste reduction work plan. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

Waste Identification:

Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

Waste Reduction Work Plan:

List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

2. PRODUCTS

Not applicable.

3. EXECUTION

3.1. PLAN IMPLEMENTATION

General:

Implement waste management plan as approved by the Engineer and the Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

Waste Management Coordinator:

Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

Training:

Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

Site Access and Temporary Controls:

Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

3.2. DISPOSAL OF WASTE

General:

Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site

Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

Burning:

Do not burn waste materials.

Disposal:

Transport waste materials off Owner's property and legally dispose of them.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

1. GENERAL

1.1. DESCRIPTION

Scope:

This section covers supply, placement, and testing of cast-in-place concrete, including formwork and reinforcement for construction of a concrete sidewalk.

Related Work Specified Elsewhere:

- Excavation and Fill – SECTION 31 23 00
- Metal Fabrications and Miscellaneous Metals – SECTION 05 50 00

1.2. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM):

ASTM A185-07, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete

ASTM A615-08, Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement

ASTM C31-08, Standard Practice for Making and Curing Concrete Test Specimens in the Field

ASTM C33-07, Standard Specification for Concrete Aggregates

ASTM C39-05e1, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

ASTM C94-07, Specification for Ready-Mixed Concrete

ASTM C143-08 , Standard Test Method for Slump of Hydraulic-Cement Concrete

ASTM C260-06 , Standard Specification for Air-Entraining Admixtures for Concrete

ASTM C494-08, Standard Specification for Chemical Admixtures for Concrete

American Concrete Institute

ACI 211, Proportioning Concrete Mixtures

ACI 214, Recommended Practice for Evaluation of Strength Test Results of Concrete

ACI 304-00, Guide for Measuring, Mixing, Transporting, and Placing Concrete

ACI 305, Hot Weather Concreting

ACI 318-05, Building Code Requirements for Structural Concrete and Commentary

ACI 347-04, Guide to Formwork for Concrete

1.3. FIELD TESTING

Concrete:

Contractor shall employ a qualified commercial testing laboratory to perform concrete quality control sampling and testing.

Contractor shall notify the Engineer AT LEAST 24 HOURS before placing concrete.

Contractor shall allow the testing laboratory to take concrete samples and shall protect such samples from its operations.

Concrete test specimens shall be made in accordance with ASTM C31 and be tested in accordance with ASTM C39.

A MINIMUM of three 6-by-12-inch test specimens shall be taken by the testing laboratory for every 50 cubic yards of concrete placed in each placement. At a minimum, 2 separate sets of test samples shall be taken during different placement times for the concrete deadman. One test specimen of each set shall be tested at 7 DAYS, and two test specimens shall be tested at 14 DAYS. The 14-day compressive strength shall be evaluated in accordance with ACI 214.

1.4. SUBMITTALS

Concrete Mixes:

Contractor shall submit concrete mixture proportions and supporting data for review by the Engineer. Concrete mixtures shall be proportioned by the Contractor in accordance with ACI 211.1. Concrete mixtures shall conform to ACI 318, Chapter 4, to meet both strength and durability criteria. The 28-day concrete compressive strength shall be 4,000 psi unless otherwise shown on the Drawings or otherwise approved. The maximum water-cement ratio, by weight, shall not exceed 0.45. The proportions of each ingredient used in all mixes, the compressive strengths at 7 and 28 days, and slump, air content, and other characteristics of all mixes shall be submitted for approval two weeks in advance of the start of any concrete work. This submittal shall be accompanied by the test data showing the properties of each ingredient used in the mixes including cement and aggregates. The materials used in the Work shall be the same as those in the submittal. Approval of any change in mixture proportions will be based on performance during use in the Work.

Reinforcing Steel Shop Drawings:

Contractor shall submit shop drawings for all reinforcing steel in accordance with SECTION 01 33 00 - Submittals. Shop drawings shall conform to ACI and CRSI standards.

Mill Certifications:

Contractor shall submit certified mill test reports for reinforcing steel in accordance with SECTION 01 33 00 - SUBMITTALS.

Curing Compounds:

Contractor shall submit the manufacturer's literature for curing compounds to be used in the Work in accordance with SECTION 01 33 00 - SUBMITTALS.

Batch Tickets:

Contractor shall submit at the time of delivery, one original copy in accordance with ASTM C94, Section 15, except that items 15.1.5, 15.1.10, 15.2, 15.2.2, 15.2.3 and 15.2.7 need not be provided for ready-mixed concrete and items 15.1.1, 15.1.5, 15.1.6, 15.2.2, 15.2.3, 15.2.5 and 15.2.6 need not be provided for job-mixed concrete.

2. PRODUCTS

2.1. MATERIALS

Reinforcing Steel:

Reinforcing steel shall conform to ASTM A615, Grade 60.

Welded Wire Reinforcement (WWR): Welded plain wire reinforcement fabric for concrete shall conform to ASTM A185.

Metal Accessories:

Metal accessories including spacers, chairs, ties and other devices necessary for proper placement, spacing, supporting and fastening reinforcement in place shall conform to the Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice.

Formwork:

Materials for concrete formwork shall be suitable to achieve the finish requirements for formed surfaces specified and meet ACI 347 “Recommended Practice for Concrete Formwork.”

Form Coatings, Sealers and Release Agents: Form coating, sealers and release agents shall not bond with, stain, not adversely affect concrete surfaces, and shall not impair subsequent treatments (painting, etc) of concrete surfaces.

Portland Cement:

Portland cement shall conform to ASTM C150, Type II. Only cement of low alkali (less than 0.60 percent as Na₂O) content shall be used with aggregates identified as potentially reactive. All cement used shall be from the same mill and manufacturer and shall have uniform color and shade.

Aggregates:

Coarse aggregate shall be hard, durable, clean, uncoated particles conforming to ASTM C33, Class Designation 4S. Course aggregate shall consist of size number 67 conforming to the ASTM C33 grading requirements.

Fine aggregate shall be clean, hard, durable, uncoated grains of a natural medium sand, free from silt, loam and clay, conforming to ASTM C33, including grading requirements.

Mixing Water:

Mixing water shall be clean and free from oil, acid and injurious amounts of organic material, alkalies and other salts.

Air-Entraining Admixture:

Air-entraining admixture shall conform to ASTM C260. Air content shall not be less than four percent and shall not exceed six percent.

Set-Retarding Admixture:

Set-retarding admixture shall conform to ASTM C4994, Type A or D. All concrete shall contain Master Builders Pozzolith 100-XR, or equal, set retarding admixture, which shall be used at the rate recommended by the manufacturer if the concrete can not be placed within 1-1/2 hours of batching.

Other Admixtures:

Anti-freeze liquids, salts, calcium chloride, or other similar materials shall not be used in concrete unless specifically authorized in writing by the Engineer prior to construction.

Curing Compounds:

Curing compounds used shall be an approved paraffin based substance and shall not impair subsequent treatments (painting, etc.) of concrete surfaces.

Concrete Slab Coating:

Thompson's Waterseal.

3. EXECUTION

3.1. PREPARATION AND INSTALLATION

Loose rust, mill scale, soil and other materials which adversely affect bond with concrete shall be removed from reinforcement.

Reinforcement shall be placed and splices shall be made as shown on the Drawings or as approved by the Engineer.

Placement of reinforcement and supports shall comply with CRSI's recommended practice for "Placing Reinforcing Bars."

Form coatings, sealers and release agents shall be applied immediately before erecting forms where necessary to achieve the specified curing and finishes. Forms shall be protected from dust and dirt.

All mixing equipment, transporting equipment, and forms to receive concrete shall be clean and free of all foreign matter.

All embedded items shall be securely fastened to prevent displacement due to vibrations.

Construction joints shall be straight, formed, and perpendicular to principal reinforcement when shown on the Drawings. All debris shall be removed from the placement area with compressed air prior to placement of concrete.

Casting Against Existing Concrete:

Existing concrete surfaces shall be clean and free of dust, laitance, grease, and other foreign matter. Surfaces may be wet, but shall be free of standing water. Cleaning surfaces shall be done by wet sandblasting, high pressure water blasting (6,000 psi minimum), or other methods approved by the Engineer.

3.2. INSPECTIONS

The Engineer shall be notified upon completion of installation of concrete reinforcement and formwork. The Engineer will review the work for conformance with the contract documents prior to placement of concrete.

3.3. CONCRETE PLACEMENT

Concrete delivered to the Work shall conform to ASTM D94.

Transporting and placing concrete shall follow standard practices contained in ACI 304.

The slump of concrete, as placed, shall be 4-inches maximum and 1-inch minimum. Slump may be increased when approved chemical admixtures are used, provided that admixture concrete has the same or lower water-cement ratio and does not exhibit segregation potential or excessive bleeding.

The Engineer may sample concrete and perform slump, temperature and air tests in accordance with ASTM C143. Concrete exceeding the maximum slump may be rejected by the Engineer. Concrete rejected for excessive slump shall be immediately removed from the project.

Concrete shall be conveyed from mixer to place of final deposit by methods which will not cause separation or loss of material.

Concrete shall be deposited in or close to its final position; segregation due to rehandling or flowing shall be avoided.

Concrete shall be deposited in layers, NOT TO EXCEED 18 INCHES, in a continuous operation until each section or panel is complete. Each layer shall be thoroughly vibrated before placing the succeeding layer. Top surfaces shall be generally level during placement.

Placing of concrete shall be regulated so that the pressure caused by the wet concrete shall not exceed that used in the design of the forms.

Dropping the concrete a distance of more than 5 feet, depositing a large quantity at any point, or running or working the concrete along the forms is prohibited.

Concrete shall be thoroughly worked around reinforcement and embedded items, and into corners of forms by effective vibration. Vibrators shall penetrate each layer and into the top of the underlying layer.

Concrete shall be consolidated by use of approved immersion-type mechanical vibrators. Concrete shall be vibrated sufficiently to remove entrapped air such that the concrete closes snugly against all surfaces to the maximum practicable density but not so much as to cause the coarse aggregate to settle or excessive accumulation or mortar at the surface. Vibrators shall not be held against embedded materials.

Concrete shall not be placed underwater nor used to displace water.

3.4. CURING AND PROTECTION

Careful attention shall be given to the proper curing and protection of all concrete. The Work shall be protected from the elements, rain, flowing water, and defacement of any nature during construction.

Curing shall start as soon as concrete has hardened sufficiently to prevent surface damage.

All concrete shall be cured for a period of NOT LESS THAN 7 CONSECUTIVE DAYS by an Engineer approved method or combination of methods applicable to local conditions.

Liquid membrane-forming curing compounds shall not be used on surfaces to receive additional concrete or cementitious finishing materials, and shall be used only where approved by the Engineer.

Concrete sealer shall be applied to the interior Sampling Building floors not to receive vinyl flooring.

3.5. REMOVAL OF FORMWORK

Formwork shall not be distributed until the concrete has hardened adequately. All forms shall be loosened and removed as soon as practicable, but in no case shall they be removed BEFORE 24 HOURS after placement unless otherwise approved by the Engineer. Forms shall be removed carefully so as to prevent damage to the concrete. Any repairs needed or finish treatment required on surfaces shall be performed at once and shall be followed immediately by the specified curing.

3.6. CONCRETE REPAIR

After removal of forms, concrete with surface defects and out-of-alignment or level beyond required tolerances, shall be repaired in accordance with ACI 301.

All tie holes shall be patched.

Curing shall be interrupted for the shortest time and in the smallest area practicable to perform repair.

Methods of making repairs shall be approved by the Engineer.

3.7. FORMWORK

Formwork shall be designed and constructed to ensure that the finished concrete will conform accurately to the indicated dimensions, lines, and elevations, and within the tolerances specified. Forms shall be of wood or steel, straight, of sufficient strength to resist springing during depositing and consolidation concrete. Wood forms shall be surfaced plank 2 inches nominal thickness, straight and free from warp, twist, loose knots, splits or other defects. Wood forms shall have a nominal length of 10 feet. Steel forms shall be channel formed section with a flat top surface and with welded braces at each end and not less than two intermediate points. End of steel forms shall be interlocking and self-aligning.

3.8. FINISHES

General:

All finishes shall be in accordance with ACI 301 unless otherwise noted.

Formed Surfaces

Formed surfaces which will be below grade and exposed to earth shall have a rough form finish.

Formed surfaces above grade and permanently exposed to view shall have a smooth form finish unless otherwise noted.

Non-formed surfaces (flatwork):

Exterior walkways, ramps, tops of walls and other walking surfaces shall have a broom finish.

All other surfaces shall have a smooth, float finish unless otherwise indicated on the Drawings.

3.9. ENVIRONMENTAL REQUIREMENTS

Hot Weather:

Unless otherwise approved in writing by the Engineer, the maximum allowable temperature of the concrete as it is placed, shall be 90°F. When the ambient air temperature approaches or exceeds this maximum, special procedures shall be adopted to control the temperature of the materials and to protect the concrete from damage due to hot weather during mixing, placing, and curing. All such special procedures shall be subject to the prior approval of the Engineer. Hot weather concreting procedures which may be utilized are contained in ACI 305, "Hot Weather Concreting."

Concrete shall not be placed during rain, sleet or snow unless Engineer approved protection is provided.

4. MEASUREMENT AND PAYMENT

4.1. CAST-IN-PLACE CONCRETE

Measurement:

No measurement for Work of this Section will be made.

Payment:

All work required for Payment for Cast-in-Place Concrete Work of this Section will be made at the unit price (CY) price for Bid Item No. 033000-x, Cast-in-Place Concrete, in the Schedule of Quantities and Prices.

Payment for all work required for demolition and removal of all structural components shall be considered subsidiary to work required under this Bid Item.

END OF SECTION

SECTION 03 41 00

PRECAST STRUCTURAL CONCRETE

1. GENERAL

1.1 SUMMARY

- A. This section includes precast structural concrete.

1.2 PERFORMANCE REQUIREMENTS

- A. **Delegated Design:** Design precast structural concrete, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. **Structural Performance:** Precast structural concrete units and connections shall withstand design loads indicated within limits and under conditions indicated.

1.3 SUBMITTALS

- A. **Product Data:** For each type of product indicated.
- B. **Design Mixtures:** For each precast concrete mixture.
- C. **Shop Drawings:** Include member locations, plans, elevations, dimensions, shapes and sections, openings, support conditions, and types of reinforcement, including special reinforcement. Detail fabrication and installation of precast structural concrete units.
- D. **Delegated-Design Submittal:** For precast structural concrete indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- E. **Qualification Data:** For Installer, fabricator, testing agenc.,.
- F. **Welding certificates.**
- G. **Material certificates.**
- H. **Material test reports.**
- I. **Source quality-control reports.**
- J. **Field quality-control and special inspection reports.**

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm that assumes responsibility for engineering precast structural concrete units to comply with performance requirements. Responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
 - 1. Participates in PCI's Plant Certification program at time of bidding and is designated a PCI-certified plant as follows:
 - a. Group C, Category C1 - Precast Concrete Products (no prestressed reinforcement), Category C2 - Prestressed Hollowcore and Repetitively Produced Products, Category C3 - Prestressed Straight Strand Structural Members, Category C4 - Prestressed Deflected Strand Structural Members.
- B. Design Standards: Comply with ACI 318 (ACI 318M) and design recommendations in PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of precast structural concrete units indicated.
- C. Quality-Control Standard: For manufacturing procedures and testing requirements, quality-control recommendations, and dimensional tolerances for types of units required, comply with PCI MNL 116, "Manual for Quality Control for Plants and Production of Structural Precast Concrete Products."
- D. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D.1.1M, "Structural Welding Code - Steel."
 - 2. AWS D1.4, "Structural Welding Code - Reinforcing Steel."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Support units during shipment on nonstaining shock-absorbing material in same position as during storage.
- B. Store units with adequate bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.
- C. Lift and support units only at designated points shown on Shop Drawings.

1.6 COORDINATION

- A. Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction before starting that Work. Provide locations, setting diagrams, templates, instructions, and directions, as required, for installation.

2. PRODUCTS

2.1 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60, deformed bars, assembled with clips.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- E. Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 116.

2.2 PRESTRESSING TENDONS

- A. Strand: ASTM A 416/A 416M, Grade 270, uncoated, 7-wire, low-relaxation strand.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or Type III, gray, unless otherwise indicated.
- B. Supplementary Cementitious Materials:
 - 1. Fly Ash: ASTM C 618, Class C or F, with maximum loss on ignition of 3 percent.
 - 2. Metakaolin Admixture: ASTM C 618, Class N.
 - 3. Silica Fume Admixture: ASTM C 1240, with optional chemical and physical requirement.
 - 4. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- C. Normal-Weight Aggregates: Except as modified by PCI MNL 116, ASTM C 33, with coarse aggregates complying with **Class 5S**. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.
- D. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride, or more than 0.15 percent chloride ions or other salts by weight of admixture.

2.4 STEEL CONNECTION MATERIALS

- A. Carbon-Steel Shapes and Plates: ASTM A 36/A 36M.

- B. Carbon-Steel-Headed Studs: ASTM A 108, AISI 1018 through AISI 1020, cold finished, AWS D1.1/D1.1M, Type A or B, with arc shields and with minimum mechanical properties of PCI MNL 116.
- C. Carbon-Steel Plate: ASTM A 283/A 283M.
- D. Malleable-Iron Castings: ASTM A 47/A 47M.
- E. Carbon-Steel Castings: ASTM A 27/A 27M, **Grade 60-30**.
- F. High-Strength, Low-Alloy Structural Steel: ASTM A 572/A 572M.
- G. Carbon-Steel Structural Tubing: ASTM A 500, Grade B.
- H. Wrought Carbon-Steel Bars: ASTM A 675/A 675M, **Grade 65**.
- I. Deformed-Steel Wire or Bar Anchors: ASTM A 496 or ASTM A 706/A 706M.
- J. Carbon-Steel Bolts and Studs: **ASTM A 307, Grade A**; carbon-steel, hex-head bolts and studs; carbon-steel nuts, **ASTM A 563**; and flat, unhardened steel washers, ASTM F 844.
- K. Zinc-Coated Finish: For exterior steel items, **steel in exterior walls**, and items indicated for galvanizing, apply zinc coating by **hot-dip process according to ASTM A 123/A 123M or ASTM A 153/A 153M**.
 - 1. Galvanizing Repair Paint: High-zinc-dust-content paint with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035B or SSPC-Paint 20.

2.5 BEARING PADS

- A. Provide bearing pads for precast structural concrete units as recommended by precast fabricator for application.

2.6 GROUT MATERIALS

- A. Sand-Cement Grout: Portland cement, ASTM C 150, Type I, and clean, natural sand, ASTM C 144 or ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, Grade A for drypack and Grades B and C for flowable grout and of consistency suitable for application within a 30-minute working time.
- C. Epoxy-Resin Grout: Two-component, mineral-filled epoxy resin; ASTM C 881/C 881M, of type, grade, and class to suit requirements.

2.7 CONCRETE MIXTURES

- A. Prepare design mixtures for each type of precast concrete required.
- B. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at precast structural concrete fabricator's option.
- C. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by **ACI 318** or PCI MNL 116 when tested according to ASTM C 1218/C 1218M.
- D. Normal-Weight Concrete Mixtures: Proportion by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28 Days): **4000 psi** minimum.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.45.
- E. Water Absorption: 6 percent by weight or 14 percent by volume, tested according to PCI MNL 116.
- F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 116.
- G. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.
- H. Concrete Mix Adjustments: Concrete mix design adjustments may be proposed if characteristics of materials, Project conditions, weather, test results, or other circumstances warrant.

2.8 FABRICATION

- A. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.
 - 1. Weld-headed studs and deformed bar anchors used for anchorage according to AWS D1.1/D1.1M and AWS C5.4, "Recommended Practices for Stud Welding."
- B. Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing precast structural concrete units to supporting and adjacent construction.
- C. Cast-in reglets, slots, holes, and other accessories in precast structural concrete units as indicated on the Contract Drawings.
- D. Cast-in openings larger than **10 inches (250 mm)** in any dimension. Do not drill or cut openings or prestressing strand without Engineer's approval.

- E. Reinforcement: Comply with recommendations in PCI MNL 116 for fabricating, placing, and supporting reinforcement.
- F. Reinforce precast structural concrete units to resist handling, transportation, and erection stresses.
- G. Prestress tendons for precast structural concrete units by either pretensioning or post-tensioning methods. Comply with PCI MNL 116.
- H. Comply with requirements in PCI MNL 116 and in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.
- I. Place concrete in a continuous operation to prevent seams or planes of weakness from forming in precast concrete units.
- J. Thoroughly consolidate placed concrete by internal and external vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air on surfaces. Use equipment and procedures complying with PCI MNL 116.
- K. Comply with ACI 306.1 procedures for cold-weather concrete placement.
- L. Comply with PCI MNL 116 procedures for hot-weather concrete placement.
- M. Identify pickup points of precast structural concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each precast structural concrete unit on a surface that will not show in finished structure.
- N. Cure concrete, according to requirements in PCI MNL 116, by moisture retention without heat or by accelerated heat curing using low-pressure live steam or radiant heat and moisture. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.
- O. Discard and replace precast structural concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 116 and meet Engineer's approval.

2.9 FABRICATION TOLERANCES

- A. Fabricate precast structural concrete units straight and true to size and shape with exposed edges and corners precise and true so each finished unit complies with PCI MNL 116 product dimension tolerances.

2.10 COMMERCIAL FINISHES

- A. Commercial Grade: Remove fins and large protrusions and fill large holes. Rub or grind ragged edges. Faces must have true, well-defined surfaces. Air holes, water marks, and color variations are permitted. Limit form joint offsets to **3/16 inch (5 mm)**.

- B. Standard Grade: Normal plant-run finish produced in molds that impart a smooth finish to concrete. Surface holes smaller than **1/2 inch (13 mm)** caused by air bubbles, normal color variations, form joint marks, and minor chips and spalls are permitted. Fill air holes greater than **1/4 inch (6 mm)** in width that occur more than once per **2 sq. in (1300 sq. mm)**. Major or unsightly imperfections, honeycombs, or structural defects are not permitted. Limit joint offsets to **1/8 inch (3 mm)**.
- C. Grade B Finish: Fill air pockets and holes larger than **1/4 inch (6 mm)** in diameter with sand-cement paste matching color of adjacent surfaces. Fill air holes greater than **1/8 inch (3 mm)** in width that occur more than once per **2 sq. in. (1300 sq. mm)**. Grind smooth form offsets or fins larger than **1/8 inch (3 mm)**. Repair surface blemishes due to holes or dents in molds. Discoloration at form joints is permitted.
- D. Screed or float finish unformed surfaces. Strike off and consolidate concrete with vibrating screeds to a uniform finish. Hand screed at projections. Normal color variations, minor indentations, minor chips, and spalls are permitted. Major imperfections, honeycombing, or defects are not permitted.
- E. Smooth, steel trowel finish unformed surfaces. Consolidate concrete, bring to proper level with straightedge, float, and trowel to a smooth, uniform finish.

2.11 SOURCE QUALITY CONTROL

- A. Testing: Test and inspect precast structural concrete according to PCI MNL 116 requirements.
- B. Defective Units: Discard and replace precast structural concrete units that do not comply with requirements, including strength, manufacturing tolerances, and color and texture range. Chipped, spalled, or cracked units may be repaired, subject to Engineer's approval. Engineer reserves the right to reject precast units that do not match approved samples, sample panels, and mockups.

3. EXECUTION

3.1 INSTALLATION

- A. Install clips, hangers, bearing pads, and other accessories required for connecting precast structural concrete units to supporting members and backup materials.
- B. Erect precast structural concrete level, plumb, and square within specified allowable tolerances. Provide temporary structural framing, supports, and bracing as required to maintain position, stability, and alignment of units until permanent connection.
 1. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
 2. Remove projecting lifting devices and grout fill voids within recessed lifting devices flush with surface of adjacent precast surfaces when recess is exposed.

- C. Connect precast structural concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.
- D. Field cutting of precast units is not permitted without approval of the Engineer.
- E. Fasteners: Do not use drilled or powder-actuated fasteners for attaching accessory items to precast, prestressed concrete units.
- F. Welding: Comply with applicable AWS D1.1/D1.1M and AWS D1.4 for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
- G. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
- H. Grouting: Grout connections and joints and open spaces at keyways, connections, and joints where required or indicated on Shop Drawings. Retain grout in place until hard enough to support itself. Pack spaces with stiff grout material, tamping until voids are completely filled.

3.2 ERECTION TOLERANCES

- A. Erect precast structural concrete units level, plumb, square, true, and in alignment without exceeding the noncumulative erection tolerances of PCI MNL 135.
- B. Minimize variations between adjacent slab members by jacking, loading, or other method recommended by fabricator and approved by Engineer.

3.3 FIELD QUALITY CONTROL

- A. Special Inspections: **Owner will engage** a qualified special inspector to perform the following special inspections:
 - 1. Erection of precast structural concrete members.
- B. Testing Agency: **Engage** a qualified testing agency to perform tests and inspections.
- C. Field welds will be visually inspected and nondestructive tested according to ASTM E 165 or ASTM E 709. High-strength bolted connections will be subject to inspections.
- D. Testing agency will report test results promptly and in writing to Contractor and Engineer.
- E. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
- F. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- G. Prepare test and inspection reports.

3.4 REPAIRS

- A. Repair precast structural concrete units if permitted by Engineer.
 - 1. Repairs may be permitted if structural adequacy, serviceability, durability, and appearance of units has not been impaired.
- B. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of **20 feet (6 m)**.
- C. Prepare and repair damaged galvanized coatings with galvanizing repair paint according to ASTM A 780.
- D. Remove and replace damaged precast structural concrete units that cannot be repaired or when repairs do not comply with requirements as determined by Engineer.

3.5 CLEANING

- A. Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.
- B. Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.
 - 1. Perform cleaning procedures, if necessary, according to precast concrete fabricator's written recommendations. Clean soiled precast concrete surfaces with detergent and water, using stiff fiber brushes and sponges, and rinse with clean water. Protect other work from staining or damage due to cleaning operations.
 - 2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

4. MEASUREMENT AND PAYMENT

4.1. PRE-CAST CONCRETE

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

All work required for Payment for Pre-Cast Concrete Work of this Section will be made at the unit price (LS) price for Bid Item No. 034100-x, Pre-Cast Concrete, in the Schedule of Quantities and Prices.

Payment for all work required for installation of all structural components shall be considered subsidiary to work required under this Bid Item.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS AND MISC METALS

1. GENERAL

1.1. DESCRIPTION

This section covers detailing, supply, fabrication, and installation of metal fabrications and miscellaneous metals, including:

- Miscellaneous fabricated metal items.

1.2. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

American Society for Testing and Materials (ASTM):

ASTM A36-05, Standard Specification for Carbon Structural Steel

ASTM A108-07, Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished

ASTM A153-05, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A385-05, Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)

ASTM A615-08, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM F436-07a, Standard Specification for Hardened Steel Washers

Military Specifications (MIL):

MIL-P-21035B, Paint, High Zinc Dust Content, Galvanizing Repair

Steel Structures Painting Council (SSPC):

SSPC-SP1, Solvent Cleaning

SSPC-SP3, Power Tool Cleaning

SSPC-SP6, Commercial Blast

AWS D1.1:

2006 Structural Welding Code Steel

1.3. QUALITY ASSURANCE

Field Measurements:

Welding:

Welding shall be done in accordance with AWS D1.1, including procedures for repair of defective welds.

Qualification of Welders and Welding Operators:

Welders and welding operators shall be qualified for shop and field welding in accordance with AWS D1.1, Section 5, Parts C and D.

Submittals

The following items shall be submitted to the Engineer for review per SECTION 01 33 00 - SUBMITTALS:

Shop Drawings, including complete bills of material for tieback systems.

Placing drawings, showing location in the Project of all fabrications, cross referenced to the shop drawings.

Manufacturer's data for products used.

2. PRODUCTS

2.1. MATERIALS

The miscellaneous structural steel materials shall be new, free from defects and imperfections, and shall unless otherwise indicated, conform to the following:

Steel Plates, Bars and Shapes:

ASTM A36.

Bolts, Lag Screws, Lag Bolts, Anchor Bolts and Nuts:

Regular hot-dip galvanized hexagon head type, ASTM A325, as noted on the Drawings. Ogee washers shall be used for each bolt.

Welding materials shall conform to AWS D1.1.

Steel plate, bar and shapes shall be true to line and free from warp or twist. Steel with laminations discovered during welding or at any other time shall be rejected unless approval for repair is obtained from the Engineer.

2.2. FABRICATION

General:

Items shall be shop fabricated to the extent practicable for transportation and handling. Splices shall be designed and detailed by the fabricator and submitted to the Engineer for review.

Parts shall be match-marked to ensure accurate field installation.

Fabrication of structural steel parts shall conform to the applicable provisions of the AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

Tolerances:

Items shall be fabricated to the tolerances indicated herein or on the Drawings, or if not specified, to accepted industry standards.

2.3. SURFACE PREPARATION

General:

After the equipment has been fabricated and inspected, the Contractor shall apply protective coatings to all surfaces unless otherwise noted. Weld spatter, burns, and other objectionable irregularities shall be carefully removed or repaired per SSPC-SP3. All oil, grease and dirt shall be removed from the surfaces by the use of suitable solvents and clean wiping materials, per SSPC-SP1

Grit Blasting:

All surfaces to be coated shall, prior to coating, be grit blasted in accordance with the requirements of SSPC-SP6, "Commercial Blast Cleaning".

2.4. GALVANIZING

General:

All ferrous metal items shall be hot-dip galvanized, unless otherwise indicated to be painted or epoxy coated.

Galvanizing shall be performed in accordance with ASTM A385 and ASTM A153. Coating shall be a minimum of twenty ounces per square foot of surface.

Field welding of galvanized metals shall be avoided, but if necessary shall be repaired using the specified galvanized repair paint. The area to be painted shall be thoroughly cleaned and coated in accordance with the manufacturer's application instructions.

2.5. MARKING

Marking the weight:

Mark the weight on sub-assemblies and individual members weighing over 200 pounds.

Marking piece marks and directional arrows:

Mark piece marks and directional arrows on all members and sub-assemblies to be assembled at the job site. Use the piece marks assigned on the shop detail drawings or erection drawings.

Method of marking:

Make all markings plainly visible with waterproof paint after shop painting.

Marking materials to be galvanized:

Stamp piece marks or match marks in material to be galvanized with metal dies so that the marks are clearly legible after galvanizing.

All fabrications shall be marked to correspond to the fabricators placing drawings.

2.6. MISCELLANEOUS STEEL

Miscellaneous steel shall consist of the following bulkhead components: Tieback concrete abutment attachment systems, and miscellaneous steel for erecting and constructing the timber/vinyl sheet pile bulkhead.

All steel materials required (including nuts, bolts, rod, plate, and channels) for the fabrication and installation of the tieback concrete abutment attachment components shall be in accordance with the requirements for steel products as specified in this Section.

3. EXECUTION

3.1. GENERAL METAL FABRICATIONS INSTALLATION

Metal fabrications shall be placed accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.

Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut, or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

3.2. MISCELLANEOUS STEEL

Installation of miscellaneous steel shall be as shown and specified on the drawings and specified herein.

Notch Timber Face Piles for placement of tieback bearing plate as shown on the Drawings or provide a bent plate that matches the curvature of the pile.

Tieback anchors shall be tightened uniformly along length of the bulkhead.

Tieback anchors shall not be tightened until concrete has cured to a level greater than the design concrete strength, or at least 10 days after the placement of concrete. Whichever time period is longer shall govern.

Tiebacks shall be tightened snug tight.

4. MEASUREMENT AND PAYMENT

4.1. MISCELLANEOUS STEEL

Measurement:

No measurement for miscellaneous metals work of this Section will be made.

Payment:

Payment for any Miscellaneous Metals work of this Section will be made at the direction of the Engineer, through Addenda.

END OF SECTION

SECTION 05 50 10

CORRUGATED METAL PIPE

1. GENERAL

1.1 SUMMARY

- A. The work consists of furnishing and placing circular, arched, or elliptical corrugated metal pipe and the necessary fittings.

2. PRODUCTS

2.1 CORRUGATED PIPE

- A. 18 in. diameter corrugated metal outlet pipes shall be fabricated from 12 gage metal with polymer coating applied to both the interior and exterior surfaces. Coating shall be polymer grade, 10/10 as specified in ASTM A 762.

2.2 COUPLING BANDS AND HARDWARE

- A. Pipe joint coupling bands shall be provided meeting the requirements specified in this specification.
- B. Hardware consisting of coupling bands and band fastening devices, such as connecting bolts, rods, lugs, and angles used in conjunction with zinc-coated iron or steel pipe, shall be galvanized by the hot-dip method. Hardware used in conjunction with aluminum pipe and aluminum or aluminum-zinc alloy-coated iron and steel pipe shall be of the same material as the pipe except that hot-dip galvanized or cadmium-plated fasteners may be used. The surface of all band-fastening devices for pipe specified with bituminous or polymer coating shall be coated with asphalt-mastic material meeting the requirements of ASTM A 849. The coupling band shall be coated similar to that specified for the pipe unless otherwise specified.
- C. Coupling bands shall be installed to provide straight alignment of the connecting pipe ends. Unless otherwise specified in these specifications, the bandwidth shall be as specified in ASTM A 760 and A 762. The bands shall be positioned to overlap adjacent pipe ends equally. The coupling bands shall be corrugated to match the corrugations of the pipe section ends being connected.

3. EXECUTION

3.1 INSTALLATION

- A. The 18 in. diameter corrugated metal outlet pipes shall be fabricated from 12 gage metal with polymer coating applied to both the interior and exterior surfaces. Coating shall be polymer grade, 10/10 as specified in ASTM A 762. The pipe shall be fabricated from steel sheets with corrugations 2 2/3 in. x 1/2 in. and the sheets connected with folded lock seams. The connecting bands shall be fabricated from 16 gage metal and shall be coated with the same material as the pipe sections. The pipes shall be connected with Type 10-C bands (24 in. wide min.) with four 1/2 in. diameter rods and lugs. All rods and nuts will be retightened 24 hours after initial tightening. Rods and nuts shall be so threaded and shall be of sufficient length to develop full rod strength without stripping threads.
- B. Joints shall be sealed with strips or bands of preformed mastic sealing compound (Ram Neck or Equivalent). Sealing compound shall be placed in the reformed corrugations and across the lap area of the band as shown on the drawings and/or in accordance with the manufacturer's recommendations. All joints shall be wrapped and totally encased with geotextile prior to backfill as shown on the drawings. The backfill around the pipes shall not contain any rocks, hard clods or clumps of soil and/or woody materials that could damage the geotextile or the walls of the pipe. Items of work to be performed in conformance with this specification and the construction details therefore are:

1. Bid Item, Pipe, Corrugated Metal, 18 in. Diameter, Smooth Lined
 - a. This item shall consist of furnishing and installing the 18 in. diameter corrugated metal outlet pipes, connecting bands and the stubout the site as shown on the drawings.
 - b. The 18 in. diameter corrugated steel pipe shall conform to the requirements of Material Specification 551 and ASTM A762. The pipe shall be Type IA, round and helically corrugated with a corrugated outer shell and smooth metal liner .
 - c. The outlet pipes shall be furnished in 40 ft. minimum lengths with shorter sections only as required to fit design lengths, as described in the Drawings.
 - d. A minimum of two lifting tabs will be fabricated at equal distances along each pipe section for unloading and installing the pipe.

3.2 FABRICATION

- A. Fabrication of appurtenant sections shall be performed as shown on the drawings and described in this specification. The items may consist of inlet sections, outlet sections, end sections, elbows, skew or beveled sections, rod reinforced ends, cut-off collars, or headwalls. Fabrication of these appurtenant sections shall be made from metallic-coated material identical to that from which the attached pipe is fabricated. Fabrication shall be of a quality and finished workmanship equal to that required for the pipe.

3.3 HANDLING THE PIPE

- A. The contractor shall furnish equipment as necessary to install the pipe without damaging the pipe or coating. The pipe shall be transported and handled in a manner to prevent damage to the pipe and coating.

3.4 LAYING AND BEDDING THE PIPE

- A. Unless otherwise specified, the pipe shall be installed in accordance with the manufacturer's recommendations. Pipe shall be installed so no reversal of grade between joints results unless otherwise shown on the drawings. The pipe shall be installed with the outside laps of circumferential joints pointing upstream and with longitudinal laps at the sides near the vertical mid-height of the pipe.
- B. Field welding of corrugated galvanized iron or steel pipe is not permitted. The pipe sections shall be joined with fabricator-supplied coupling bands meeting the specified joint requirements. The coupling shall be installed as recommended by the fabricator.
- C. The pipe shall be firmly and uniformly bedded throughout its full length to the depth and in the manner specified on the drawings.
- D. Perforated pipe shall be installed with the perforations down and oriented symmetrically about a vertical centerline. Perforations shall be clear of any obstructions at the time the pipe is installed in its final position.
- E. The pipe shall be loaded sufficiently during backfilling to prevent displacement from line and grade and to maintain full contact with the bedding during the placement operations.

3.5 REPAIR OF DAMAGED COATING

- A. Any damage to the metallic coating shall be repaired by cleaning the damaged surface area by sand blasting, power disk sanding, or wire brushing. All loose and cracked coating, dirt, and any products of corrosion shall be removed before application of paint. Oil and grease material shall be removed by use of a solvent. The surface shall be clean and dry during the painting period and until the coating has completely dried.
- B. Painting shall be accomplished by one of the following options based upon installed exposure conditions of the pipe as determined by the engineer.

- C. Normal exterior or interior atmospheric exposure:
 - 1. Zinc dust - zinc oxide primer, ASTM D 79 and D 520
 - 2. Single package, moisture cured urethane prime in silver metallic color, or
 - 3. Zinc-rich cold galvanized compound, brush, or aerosol application
- D. Submergence in water exposure:
 - 1. Zinc dust - zinc oxide primer, ASTM D 79 and D 520
 - 2. Zinc dust paint, ASTM D 4146
- E. When the metallic coating is damaged in any individual area larger than 12 square inches or if more than 0.2 percent of the total surface area of a single pipe section is damaged, that section of pipe will be rejected.
- F. Breaks or scuffs in bituminous coatings that are less than 36 square inches in area shall be repaired by applying two coats of hot-asphaltic paint or a coating of cold-applied bituminous mastic. The repair coating shall be a minimum of 0.05 inch thick after hardening and shall bond securely and permanently to the pipe and coating. The material shall meet the minimum physical requirements for bituminous coating in ASTM A 849 and A 885. Whenever individual breaks exceed 36 square inches in area or when the total area of breaks exceeds 0.5 percent of the total surface area of an individual pipe section, that section of pipe will be rejected.
- G. Bituminous coating damaged by welding of coated pipe or pipefittings shall be repaired as specified in this section for breaks or scuffs in bituminous coatings.
- H. Breaks or scuffs in polymer coatings that are less than 36 square inches in area shall be repaired by the application of a polymer material similar to and compatible with the durability, adhesion, and appearance of the original polymer coating, as described in ASTM A 849, paragraph 6.8. The repair coating shall be a minimum thickness of 0.010 inch (10 mils) after drying. Whenever individual breaks exceed 36 square inches in area or when the total area of breaks exceeds 0.5 percent of the total surface area of the individual pipe section, that section of pipe will be rejected.

4.MEASUREMENT AND PAYMENT

MEASUREMENT AND PAYMENT:

The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, is included in the payment for the item of work to which it is made subsidiary.

For items of work for which specific per unit prices are established in the contract, payment for corrugated metal pipe structures is made at the contract unit price indicated on the Submitted Bid Form Item 055010-1.

Such payment constitutes full compensation for furnishing, fabricating, transporting, and installing the pipe structure complete with metal pipe, fittings, and appurtenances, and all other items necessary and incidental to completion of the work, which includes, except as otherwise specified, required excavation, bedding, dewatering, and earth backfill.

END OF SECTION

SECTION 26 05 43

UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

1. GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Conduit, ducts, and duct accessories for **direct-buried** duct banks, junction boxes, connectors, and subsidiary components.

1.2 SUBMITTALS

A. Product Data: For accessories for manholes, handholes, and boxes.

B. Shop Drawings for Precast or Factory-Fabricated Underground Utility Structures: Include plans, elevations, sections, details, attachments to other work, and accessories, including the following:

1. Duct entry provisions, including locations and duct sizes.
2. Reinforcement details.
3. Frame and cover design and manhole frame support rings.
4. Grounding details.
5. Dimensioned locations of cable rack inserts, pulling-in and lifting irons, and sumps.
6. Joint details.

1.3 QUALITY ASSURANCE

- A. Comply with local power company (Entergy) "Standards for Electrical Service".
- B. Comply with ANSI C2.
- C. Comply with NFPA 70.

2. PRODUCTS

2.1 CONDUIT

- A. Rigid Steel Conduit: Galvanized. Comply with ANSI C80.1.
- B. RNC: NEMA TC 2, **Type EPC-80-PVC**, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.

2.2 NONMETALLIC DUCTS AND DUCT ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. ARNCO Corp.
 2. Beck Manufacturing.
 3. Cantex, Inc.
 4. CertainTeed Corp.; Pipe & Plastics Group.

5. Condux International, Inc.
 6. ElecSys, Inc.
 7. Electri-Flex Company.
 8. IPEX Inc.
 9. Lamson & Sessions; Carlon Electrical Products.
 10. Manhattan/CDT; a division of Cable Design Technologies.
 11. Spiraduct/AFC Cable Systems, Inc.
- B. Underground Plastic Utilities Duct: NEMA TC 6 & 8, Type EB-20-PVC, ASTM F 512, UL 651A, with matching fittings by the same manufacturer as the duct, complying with NEMA TC 9.
- C. Duct Accessories:
1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and sizes of ducts with which used, and selected to provide minimum duct spacings indicated while supporting ducts during concreting or backfilling.

2.3 UTILITY STRUCTURE ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Bilco Company (The).
 2. Campbell Foundry Company.
 3. Carder Concrete Products.
 4. Christy Concrete Products.
 5. East Jordan Iron Works, Inc.
 6. Elmhurst-Chicago Stone Co.
 7. McKinley Iron Works, Inc.
 8. Neenah Foundry Company.
 9. NewBasis.
 10. Oldcastle Precast Group.
 11. Osburn Associates, Inc.
 12. Pennsylvania Insert Corporation.
 13. Riverton Concrete Products; a division of Cretex Companies, Inc.
 14. Strongwell Corporation; Lenoir City Division.
 15. Underground Devices, Inc.
 16. Utility Concrete Products, LLC.
 17. Utility Vault Co.
 18. Wausau Tile, Inc.
- B. Duct-Sealing Compound: Nonhardening, safe for contact with human skin, not deleterious

to cable insulation, and workable at temperatures as low as 35 deg F (2 deg C). Capable of withstanding temperature of 300 deg F (150 deg C) without slump and adhering to clean surfaces of plastic ducts, metallic conduits, conduit coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and common metals.

3. EXECUTION

3.1 EARTHWORK

- A. Excavation and Backfill: Comply with Section 31 23 00 - "Excavation and Fill", but do not use heavy-duty, hydraulic-operated, compaction equipment.
- B. Restore surface features at areas disturbed by excavation and reestablish original grades, unless otherwise indicated. Replace removed sod immediately after backfilling is completed.
- C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.

3.2 DUCT INSTALLATION

- A. All underground conduit shall be installed in coordination with Entergy Specifications, Standards, and Procedures. It is the Contractors responsibility to confirm the most recent and applicable specifications and standards. All work shall conform to Entergy Power Company Standards, relevant national codes, and authorities having jurisdiction.
- B. Curves and Bends: Use local power company (Entergy) requirements for maximum curves and bends, as described in "Standards for Electrical Service".
- C. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.
- D. Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig (1.03-MPa) hydrostatic pressure.
- E. Pulling Cord: Install 100-lbf- (445-N-) test nylon cord in ducts, including spares.
- F. Direct-Buried Duct Banks:
 - 1. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.
 - 2. Space separators close enough to prevent sagging and deforming of ducts, with not less than 4 spacers per 20 feet (6 m) of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6 inches (150 mm) between tiers.
 - 3. Excavate trench bottom to provide firm and uniform support for duct bank.
 - 4. After installing first tier of ducts, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand-place backfill to 4 inches (100 mm) over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill

over final tier, make final duct connections at end of run and complete backfilling with normal compaction.

5. Depth: Install top of duct bank at least 36 inches (900 mm) below finished grade, unless otherwise indicated.
6. Install manufactured duct elbows for stub-ups at poles and equipment, **per local power company instructions**, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.

3.3 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 1. Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
- B. Correct deficiencies and retest as specified above to demonstrate compliance.

3.4 CLEANING

- A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

4. MEASUREMENT AND PAYMENT

5. Measurement:

- A. No measurement for Work of this Section will be made.

6. Payment:

- A. All work required for Payment for this Section will be made at by the unit price for Bid Item No. 260543-x, Underground Ducts and Raceways for Electrical Systems, in the Schedule of Quantities and Prices.
- B. Payment for all work required for Underground Ducts and Raceways for Electrical Systems shall be considered subsidiary to work required under this Bid Item.

END OF SECTION

SECTION 31 11 00

CLEARING AND GRUBBING

1. GENERAL

1.1. DESCRIPTION

This section refers to the required work necessary to clear and grub the Work site. All deleterious material encountered during construction shall be removed and disposed of appropriately, as specified herein.

Clearing and Grubbing:

Clearing includes, but is not limited to, removing and disposing of all trees, stumps, brush, rubbish, driftwood, organic topsoil, buried items, concrete, and other debris of every description in the work areas, except those objects shown on the Drawings or designated by the Owner to remain.

Related Work Specified Elsewhere:

- Protection of Environment – SECTION 01 35 43
- Excavation and Fill – SECTION 31 23 00

2. PRODUCTS

Not applicable.

3. EXECUTION

3.1. GENERAL CLEARING

The site shall be cleared to the excavation and fill limits as shown on the Drawings. All areas which are to be excavated, or on which fill is to be placed shall be cleared by removing and disposing the items listed previously in this paragraph. All trees, piles, brush, stumps, snags, and other debris firmly embedded in the ground shall be cut off at the natural ground surface. Clearing outside the limits designated on the Drawings is not permitted.

3.2. ADDITIONAL CLEARING

The Contractor will be permitted, at their expense, to clear the minimum additional areas within a distance of which are required to permit efficient operation of the equipment. Any additional clearing shall be performed only after receipt of written approval to do so.

3.3. GRUBBING

Grubbing shall be performed across the full width of the proposed construction location. The footprint of the proposed structure shall also be grubbed prior to the start of installation of materials. All roots and projections over 1 ½ inches in diameter, and all steel rebar or other steel projections shall be removed to a depth of two feet below the bottom of the designated grade so not to puncture the geotextile filter fabric.

3.4. DISPOSAL OF MATERIALS

Waste materials from the clearing and grubbing operations shall be disposed of in a legal manner. Materials shall be disposed of as soon as practicable after clearing and grubbing. Disposal of material by floating downstream will not be permitted and no buoyant spoil from clearing operations shall be left within the floodplain. Burning of material may be permitted only with the approval of the governing authorities.

4. MEASUREMENT AND PAYMENT

4.1. CLEARING AND GRUBBING

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such Work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

Payment for the Clearing & Grubbing work of this section will be made at the unit price for Bid Item No. 311100-x in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 31 23 00

EXCAVATION AND FILL

1. GENERAL

The Contractor should be aware that it is possible for material of differing characteristics to be present in the project area. All excavation, fill, and grading shall be performed within the horizontal and vertical limits of the Drawings.

1.1. DESCRIPTION

Scope:

This section covers excavation, fill and grading of the project area. The work includes excavating, moving, placement, and compaction of excavated materials in the designated areas.

Related Work Specified Elsewhere:

- Quality Control – SECTION 01 40 00
- Protection of Environment – SECTION 01 35 43

1.2. REFERENCES

The publications list below form a part of this specification to the extent referenced: the publications are referred to in the text by the basic designation only.

American Society for Testing and Materials

ASTM D1557-07, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort

2. PRODUCTS

Not applicable.

3. EXECUTION

3.1. GENERAL

The Contractor shall make themselves aware of all existing conditions at the Project Site and familiarize themselves with the requirements for excavation and fill as shown in the Drawings. The Contractor may use any control deemed necessary for the layout of work.

No excavation or fill activities shall occur outside of the designated placement area boundaries.

3.2. EXCAVATION AND GRADING

Any areas to be excavated shall have all deleterious material removed prior to the start of excavation activities. The deleterious material shall be disposed of off-site in a legal manner by the Contractor.

The Contractor shall locate, identify, and protect existing utilities from damage during construction activities. The Contractor shall pre-mark all areas where excavation and grading operations are to occur and shall call "Dial Dig" (1-800-424-5555) and the Engineer 48 HOURS PRIOR to the start of construction activities.

The Contractor is responsible for the design and adequacy of all temporary excavation slopes. The Contractor shall comply with all applicable regulations governing temporary excavation slopes, including Occupational Safety and Health Administration (OSHA).

3.3. GENERAL FILL PLACEMENT

Ensure that areas to be filled are free from debris and water.

Do not fill over ponded surface water or existing subgrade surfaces which are yielding, disturbed, or softened.

Placement of fill shall be suspended when:

- Weather or tidal conditions will not allow the proper placement of fill material.
- Climatic conditions will not allow proper placement and compaction of fill.

THESE “STOPPAGE” CONDITIONS WILL BE AGREED UPON BY CONTRACTOR, ENGINEER, AND CONTRACTOR, PRIOR TO COMMENCEMENT OF CONSTRUCTION.

Fill areas to grades, contours, levels, and elevations describe in the Contract Documents.

3.4. STAKING

The Contractor shall furnish, at his own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the work from the survey monuments, control data and elevations provided by the Engineer. It shall be the responsibility of the Contractor to maintain and preserve all monuments, stakes and other marks unless and until authorized to remove them, and if such marks are destroyed by the Contractor or through Contractor negligence, prior to their authorized removal, they may be replaced by the Engineer at his discretion, and the expense of replacement will be deducted from any amounts due or to become due the Contractor. All marking stakes (including grade stakes) placed by the Contractor must be completely removed upon completion of the project unless otherwise specifically accepted in writing by the Engineer.

4. MEASUREMENT AND PAYMENT

4.1. EXCAVATION AND GRADING

Measurement:

No measurement for Work of this Section will be made.

Payment:

Payment for Excavation and Fill Work of this Section will be made at lump sum (LS) price for Bid Item No. 312300-x, Excavation and Fill, in the Schedule of Quantities and Prices.

Payment for all other Excavation and Fill required to achieve final elevations as indicated in the Drawings shall be considered subsidiary to Work of other Sections.

END OF SECTION

SECTION 31 23 19

DEWATERING

1. GENERAL

1.1 SUMMARY

- A. Section includes construction dewatering.

1.2 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of ground water and permit excavation and construction to proceed on dry, stable subgrades.

1.3 SUBMITTALS

- A. Shop Drawings: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of risers, headers, filters, pumps, power units, discharge lines, piezometers, and flow-measuring devices; and means of discharge, control of sediment, and disposal of water.
- B. Delegated-Design Submittal: For dewatering system indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning dewatering. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.5 PROJECT CONDITIONS

- A. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
 - 1. During dewatering, regularly resurvey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

2. PRODUCTS

Not Applicable

3. EXECUTION

3.1. INSTALLATION

- B. Provide temporary grading to facilitate dewatering and control of surface water.
- C. Monitor dewatering systems continuously.

- D. Protect and maintain temporary erosion and sedimentation controls, which are specified in Section 01 50 00 "Construction Facilities" and Section 31 11 00 "Clearing and Grubbing" during dewatering operations.
- E. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
 - 1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
- F. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
- G. Provide standby equipment on site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to Owner.
 - 1. Remove dewatering system from Project site on completion of dewatering.

4. MEASUREMENT AND PAYMENT

Measurement:

No separate measurement will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

Payment:

No separate payment will be made for the Work in this Section; all the costs of such work shall be included in the prices bid for the various items in the Schedule of Quantities and Prices.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

1. GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cold milling of existing hot-mix asphalt pavement.
2. Hot-mix asphalt patching.
3. Hot-mix asphalt paving.
4. Hot-mix asphalt paving overlay.
5. Pavement-marking paint.

B. Related Sections:

1. Section "Excavation & Fill" for aggregate subbase and base courses and for aggregate pavement shoulders.
2. Section "Concrete Paving Joint Sealants" for joint sealants and fillers at paving terminations.
3. Included by reference, TXDOT Standard Specifications
 - a. Item 520, "Weighing and Measuring Equipment"

1.2 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
2. Job-Mix Designs: For each job mix proposed for the Work.

B. Material Certificates: For each paving material, from manufacturer.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.

B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Owner for asphalt paving work.

1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

C. Preinstallation Conference: Conduct conference at Project site.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Tack Coat: Minimum surface temperature of 60 deg F (15.6 deg C).

2. Asphalt Base Course: Minimum surface temperature of 40 deg F (4.4 deg C) and rising at time of placement.
 3. Asphalt Surface Course: Minimum surface temperature of 60 deg F (15.6 deg C) at time of placement.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F (4.4 deg C) for oil-based materials, 55 deg F (12.8 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

2. PRODUCTS

2.1. AGGREGATES

- A. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.
- B. Fine Aggregate: ASTM D 1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
- C. Mineral Filler: ASTM D 242 or AASHTO M 17, rock or slag dust, hydraulic cement, or other inert material.

2.2. ASPHALT MATERIALS

- A. Asphalt Binder: AASHTO M 320 or AASHTO MP 1a, per Engineer.
- B. Tack Coat: Per Engineer, ASTM D 977 or AASHTO M 140 emulsified asphalt, or ASTM D 2397 or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.

2.3. AUXILIARY MATERIALS

- A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.
- B. Pavement-Marking Paint: MPI #32 Alkyd Traffic Marking Paint.
- C. Pavement-Marking Paint: MPI #97 Latex Traffic Marking Paint.

2.4. MIXES

- A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction and complying with the following requirements:
 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

3. EXECUTION

3.1. EXAMINATION

- A. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- B. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2. COLD MILLING

- A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.

- 1. Mill to a depth of 1-1/2 inches (38 mm).

3.3. PATCHING

- A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.

- B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseal concrete pieces firmly.

- 1. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.

- C. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.10 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).

- 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

- D. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

3.4. SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

- B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

- C. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.10 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).

- 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.5. HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

- 1. Spread mix at minimum temperature of 250 deg F (121 deg C).

2. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
 - B. Place paving in consecutive strips not less than 10 feet (3 m) wide unless infill edge strips of a lesser width are required.
 - C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.
- 3.6. JOINTS
- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
 1. Clean contact surfaces and apply tack coat to joints.
 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
 3. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
 4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AIMS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
- 3.7. COMPACTION
- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
 1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).
 - B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
 - C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
 - D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
 - E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
 - F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
 - G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.
- 3.8. ASPHALT CURBS
- A. Construct hot-mix asphalt curbs over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread mix at minimum temperature of 250 deg F (121 deg C).

1. Asphalt Mix: Same as pavement surface-course mix.
 - B. Place hot-mix asphalt to curb cross section indicated or, if not indicated, to local standard shapes, by machine or by hand in wood or metal forms. Tamp hand-placed materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.
- 3.9. INSTALLATION TOLERANCES
- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 1. Base Course: Plus or minus 1/2 inch (13 mm).
 2. Surface Course: Plus 1/4 inch (6 mm), no minus.
 - B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:
 1. Base Course: 1/4 inch (6 mm).
 2. Surface Course: 1/8 inch (3 mm).
 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch (6 mm).
- 3.10. PAVEMENT MARKING
- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer.
 - B. Allow paving to age for 30 days before starting pavement marking.
 - C. Sweep and clean surface to eliminate loose material and dust.
 - D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).
 1. Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal. (0.72 kg/L).
- 3.11. FIELD QUALITY CONTROL
- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
 - B. Replace and compact hot-mix asphalt where core tests were taken.
 - C. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.
- 3.12. DISPOSAL
- D. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

4. MEASUREMENT AND PAYMENT

Measurement:

By the ton of dry weight in vehicles as delivered. The dry weight is determined by deducting the weight of the moisture in the material at the time of weighing from the gross weight of the material. The Engineer will determine the moisture content in the material in accordance with Tex-103-E from samples taken at the time of weighing.

When material is measured in trucks, the weight of the material will be determined on certified scales, or the Contractor must provide a set of standard platform truck scales at a location approved by the Engineer. Scales must conform to the requirements of Item 520, "Weighing and Measuring Equipment."

Payment:

All work required for Payment for Asphalt Paving Work of this Section will be made at the per ton (Ton) unit price for Bid Item No. 321216-x, Asphalt Paving, in the Schedule of Quantities and Prices.

Payment for all work required for Asphalt Paving shall be considered subsidiary to work required under this Bid Item.

END OF SECTION

SECTION 32 12 20

FLEX BASE

1. GENERAL

SUMMARY

Construct a foundation course composed of flexible base.

A. Section Includes:

1. Materials
2. Aggregate
3. Tolerances
4. Equipment
5. Methods

B. Related Sections:

1. Section "Asphalt Paving" for construction and/or repair of asphalt roadways.
2. Included by reference, TXDOT Standard Specifications (www.txdot.gov/apps/specs/searchforms.asp):
 - a. Item 105, "Removing Stabilized Base and Asphalt Pavement"
 - b. Item 204, "Sprinkling"
 - c. Item 216, "Proof Rolling"
 - d. Item 520, "Weighing and Measuring Equipment"

SUBMITTALS

- A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
- B. Material Certificates: For each product material, from manufacturer.

QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located, or as approved by Engineer.
- B. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Owner for flex base work.
- C. Preinstallation Conference: Conduct conference at Project site.

2. PRODUCTS

2.1. MATERIALS

Furnish uncontaminated materials of uniform quality that meet the requirements of the plans and specifications. Notify the Engineer of the proposed material sources and of changes to material sources. The Engineer may sample and test project materials at any time before compaction throughout the duration of the project to assure specification compliance. Use Tex-100-E material definitions.

- A. Aggregate: Furnish aggregate of the type and grade shown on the plans and conforming to the requirements of Table 1. Each source must meet Table 1 requirements for liquid limit, plasticity index, and wet ball mill for the grade specified. Do not use additives such as but not limited to

lime, cement, or fly ash to modify aggregates to meet the requirements of Table 1, unless shown on the plans.

Table 1
Material Requirements

Property	Test Method	Grade 1	Grade 2	Grade 3	Grade 4
Master gradation sieve size (% retained)	Tex-110-E				As shown on the plans
2-1/2 in.		–	0	0	
1-3/4 in.		0	0–10	0–10	
7/8 in.		10–35	–	–	
3/8 in.		30–50	–	–	
No. 4		45–65	45–75	45–75	
No. 40		70–85	60–85	50–85	
Liquid limit, % max. ¹	Tex-104-E	35	40	40	As shown on the plans
Plasticity index, max. ¹	Tex-106-E	10	12	12	As shown on the plans
Plasticity index, min. ¹		As shown on the plans			
Wet ball mill, % max. ²	Tex-116-E	40	45	–	As shown on the plans
Wet ball mill, % max. increase passing the No. 40 sieve		20	20	–	
Classification ³	Tex-117-E	1.0	1.1–2.3	–	As shown on the plans
Min. compressive strength ³ , psi		45	35	–	As shown on the plans
lateral pressure 0 psi		175	175	–	
lateral pressure 15 psi					

1. Determine plastic index in accordance with Tex-107-E (linear shrinkage) when liquid limit is unattainable as defined in Tex-104-E.

2. When a soundness value is required by the plans, test material in accordance with Tex-411-A.

3. Meet both the classification and the minimum compressive strength, unless otherwise shown on the plans.

1. **Material Tolerances.** The Engineer may accept material if no more than 1 of the 5 most recent gradation tests has an individual sieve outside the specified limits of the gradation. When target grading is required by the plans, no single failing test may exceed the master grading by more than 5 percentage points on sieves No. 4 and larger or 3 percentage points on sieves smaller than No. 4. The Engineer may accept material if no more than 1 of the 5 most recent plasticity index tests is outside the specified limit. No single failing test may exceed the allowable limit by more than 2 points.
2. **Material Types.** Do not use fillers or binders unless approved. Furnish the type specified on the plans in accordance with the following:
 - a. **Type A.** Crushed stone produced and graded from oversize quarried aggregate that originates from a single, naturally occurring source. Do not use gravel or multiple sources.
 - b. **Type B.** Crushed or uncrushed gravel. Blending of 2 or more sources is allowed.
 - c. **Type C.** Crushed gravel with a minimum of 60% of the particles retained on a No. 4 sieve with 2 or more crushed faces as determined by Tex-460-A, Part I. Blending of 2 or more sources is allowed.
 - d. **Type D.** Type A material or crushed concrete. Crushed concrete containing gravel will be considered Type D material. Crushed concrete must meet the requirements in these Specifications under, “Recycled Material (Including Crushed Concrete)”

- Requirements,” and be managed in a way to provide for uniform quality. The Engineer may require separate dedicated stockpiles in order to verify compliance.
- e. **Type E.** As shown on the plans.
3. **Recycled Material.** Recycled asphalt pavement (RAP) and other recycled materials may be used when shown on the plans. Request approval to blend 2 or more sources of recycled materials.
 - a. **Limits on Percentage.** When RAP is allowed, do not exceed 20% RAP by weight unless otherwise shown on the plans. The percentage limitations for other recycled materials will be as shown on the plans.
 - b. **Recycled Material (Including Crushed Concrete) Requirements.**
 - 1) **Contractor Furnished Recycled Materials.** When the Contractor furnishes the recycled materials, including crushed concrete, the final product will be subject to the requirements of Table 1 for the grade specified. Certify compliance with DMS-11000, “Evaluating and Using Nonhazardous Recyclable Materials Guidelines,” for Contractor furnished recycled materials. In addition, recycled materials must be free from reinforcing steel and other objectionable material and have at most 1.5% deleterious material when tested in accordance with Tex-413-A. For RAP, do not exceed a maximum percent loss from decantation of 5.0% when tested in accordance with Tex-406-A. Test RAP without removing the asphalt.
 - c. **Recycled Material Sources.** The use of Contractor-owned recycled materials is allowed when shown on the plans. Contractor-owned surplus recycled materials remain the property of the Contractor. Remove Contractor-owned recycled materials from the project and dispose of them in accordance with federal, state, and local regulations before project acceptance.
 - B. **Water.** Furnish water free of industrial wastes and other objectionable matter.
 - C. **Material Sources.** When non-commercial sources are used, expose the vertical faces of all strata of material proposed for use. Secure and process the material by successive vertical cuts extending through all exposed strata, when directed.
 - D. **Equipment.** Provide machinery, tools, and equipment necessary for proper execution of the work. Provide rollers in accordance with Item 210, “Rolling.” Provide proof rollers in accordance with Item 216, “Proof Rolling,” when required.

3. EXECUTION

3.1. CONSTRUCTION

Construct each layer uniformly, free of loose or segregated areas, and with the required density and moisture content. Provide a smooth surface that conforms to the typical sections, lines, and grades shown on the plans or as directed.

Stockpile base material temporarily at an approved location before delivery to the roadway. Build stockpiles in layers no greater than 2 ft. thick. Stockpiles must have a total height between 10 and 16 ft. unless otherwise shown on the plans. After construction and acceptance of the stockpile, loading from the stockpile for delivery is allowed. Load by making successive vertical cuts through the entire depth of the stockpile.

Do not add or remove material from temporary stockpiles that require sampling and testing before delivery unless otherwise approved. Charges for additional sampling and testing required as a result of adding or removing material will be deducted from the Contractor’s estimates.

Haul approved flexible base in clean trucks. Deliver the required quantity to each 100-ft. station or designated stockpile site as shown on the plans. Prepare stockpile sites as directed. When delivery is to the 100-ft. station, manipulate in accordance with the applicable Items.

- E. **Preparation of Subgrade or Existing Base.** Remove or scarify existing asphalt concrete pavement in accordance with Item 105, “Removing Stabilized Base and Asphalt Pavement,” when shown on the plans or as directed. Shape the subgrade or existing base to conform to the typical sections shown on the plans or as directed.

When new base is required to be mixed with existing base, deliver, place, and spread the new flexible base in the required amount per station. Manipulate and thoroughly mix the new base with existing material to provide a uniform mixture to the specified depth before shaping.

When shown on the plans or directed, proof roll the roadbed in accordance with Item 216, “Proof Rolling,” before pulverizing or scarifying. Correct soft spots as directed.

- F. **Placing.** Spread and shape flexible base into a uniform layer with an approved spreader the same day as delivered unless otherwise approved. Construct layers to the thickness shown on the plans. Maintain the shape of the course. Control dust by sprinkling, as directed. Correct or replace segregated areas as directed, at no additional expense to the Department.

Place successive base courses and finish courses using the same construction methods required for the first course.

- G. **Compaction.** Compact using density control unless otherwise shown on the plans. Multiple lifts are permitted when shown on the plans or approved. Bring each layer to the moisture content directed. When necessary, sprinkle the material in accordance with Item 204, “Sprinkling.”

Begin rolling longitudinally at the sides and proceed towards the center, overlapping on successive trips by at least 1/2 the width of the roller unit. On superelevated curves, begin rolling at the low side and progress toward the high side. Offset alternate trips of the roller. Operate rollers at a speed between 2 and 6 mph as directed.

Rework, recompact, and refinish material that fails to meet or that loses required moisture, density, stability, or finish before the next course is placed or the project is accepted. Continue work until specification requirements are met. Perform the work at no additional expense to the Department.

1. **Ordinary Compaction.** Roll with approved compaction equipment as directed. Correct irregularities, depressions, and weak spots immediately by scarifying the areas affected, adding or removing approved material as required, reshaping, and recompacting.
2. **Density Control.** Compact to at least 100% of the maximum density determined by Tex-113-E unless otherwise shown on the plans. Determine the moisture content of the material at the beginning and during compaction in accordance with Tex-103-E.

The Engineer will determine roadway density of completed sections in accordance with Tex-115-E. The Engineer may accept the section if no more than 1 of the 5 most recent density tests is below the specified density and the failing test is no more than 3 pcf below the specified density.

3. **Finishing.** After completing compaction, clip, skin, or tight-blade the surface with a maintainer or subgrade trimmer to a depth of approximately 1/4 in. Remove loosened material and dispose of it at an approved location. Seal the clipped surface immediately by rolling with a pneumatic tire roller until a smooth surface is attained. Add small increments of water as needed during rolling. Shape and maintain the course and surface

in conformity with the typical sections, lines, and grades as shown on the plans or as directed.

In areas where surfacing is to be placed, correct grade deviations greater than 1/4 in. in 16 ft. measured longitudinally or greater than 1/4 in. over the entire width of the cross-section. Correct by loosening, adding, or removing material. Reshape and recompact in accordance with these Specifications under "Compaction".

4. **Curing.** Cure the finished section until the moisture content is at least 2 percentage points below optimum or as directed before applying the next successive course or prime coat.

4. MEASUREMENT AND PAYMENT

Measurement:

Work shall be measured as Complete-in-Place, by the square yard of surface area in the completed and accepted final position. The surface area of the base course is based on the width of flexible base as shown on the plans.

Payment:

All work required for Payment for Flex Base Work of this Section will be made at the per square yard (SY) unit price for Bid Item No. 321220-x, Flex Base, in the Schedule of Quantities and Prices.

Payment for all work required for Asphalt Paving shall be considered subsidiary to work required under this Bid Item.

END OF SECTION
