COUNTY OF GALVESTON

SPECIFICATIONS AND CONTRACT DOCUMENTS

BEL ROAD EXTENSION
AND LINEAR DETENTION DITCH
Bid # B191024

STATE OF TEXAS
MARK E. HAVRAN
118610
LICENSED
PROFESSIONAL ENGINEER

11-20-18

LJA PROJECT NO. E135-0320 & 0340

November 2018

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GALVESTON COUNTY
PURCHASING DEPARTMENT

INVITATION TO BID

ITB #B191024

BEL ROAD EXTENSION AND LINEAR DETENTION DITCH

BID DUE DATE: 12/18/2018

2:00 P.M.

Rufus Crowder, CPPO, CPPB
Purchasing Agent
Galveston County
722 Moody (21st Street)
Fifth (5th) Floor
Galveston, Texas 77550
(409) 770-5372

ITB #B191024
OPENING: 12/18/2018
TIME: 2:00 P.M.

INVITATION TO BID
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
GALVESTON COUNTY, TEXAS

Sealed bids in **sets of six(6), one (1) unbound original and five (5) copies,** will be received in the office of the Galveston County Purchasing Agent **until 2:00 P.M. CST, on Tuesday, December 18, 2018** and opened immediately in that office in the presence of Galveston County Auditor and the Purchasing Agent. Sealed qualifications are to be delivered to Rufus G. Crowder, CPPO CPPB, Galveston County Purchasing Agent at the Galveston County Courthouse, 722 Moody, (21st Street), Floor 5, Purchasing, Galveston, Texas 77550, (409) 770-5372. **The time stamp clock located in the Purchasing Agent's office shall serve as the official time keeping piece for this solicitation process. Any bid received after 2:00 P.M. CST on the specified date will be returned unopened.**

Purpose:
This project entails clearing and grubbing for a new City right of way for the purpose of constructing two new 24 feet wide concrete roads approximately 2,000 feet long with sidewalk alongside. A linear detention ditch will be expanded to take the new runoff for the roads and the dirt shall be spread on release valve, fire hydrant installation, and turn establishment. This project entails coordination with TXDOT, Pipelines, CenterPoint, County of Galveston and City of Kemah
All bids must be marked on the outside of the envelope:

ITB #B191024
Bel Road Extension and Linear Detention Ditch

Bidder's name, return address, should be prominently displayed on the bid package for identification purposes.

Specifications can be obtained by visiting the Galveston County website @ http://www.galvestoncountytx.gov/pu/Pages/BidListings.aspx.

Submitted prices shall be either lump sum or unit prices as shown on bid sheets, if applicable. The net price shall be delivered to Galveston County, including all freight, shipping, and license fees. Galveston County is tax exempt and no taxes should be included in bid pricing.

A non-mandatory pre-bid conference will be held on Wednesday, December 5, 2018 at 10:00 a.m. at the Galveston County Courthouse, Purchasing Department, 722 Moody (21st Street), Fifth (5th) Floor, Galveston, Texas 77550.

Copies of Proposal/Contract Documents may also be obtained from www.Civcast.com search Bel Road Extension and Linear Detention Ditch. Proposers must register on this website in order to view and/or download specifications and plans for this project. There is NO charge to view or download documents.

If copies of the Proposal documents are to be mailed, please contact Mark Havran with LJA Engineering for postage and handling. Return of documents is not required and no refund will be granted.

Upon satisfaction of contractual terms (e.g., goods delivered in promised condition, services rendered as agreed, etc.), contractor shall be paid via Galveston County's normal accounts payable process.

Bonding Requirements:

- **BID GUARANTEE:** Evidencing its firm commitment to engage in the contract if Bidder is selected for award of contract, each Bidder is required to furnish with their bid a Cashier's Check, or an acceptable Bidder's Bond, in the amount of five percent (5%) of the total contract price. The Bidder's Bond must be executed with a surety company authorized to do business in the State of Texas. Failure to furnish the bid/proposal guarantee in the proper form and amount, by the time set for opening of bids may be cause or rejection of the bid.

- **PERFORMANCE AND PAYMENT BONDS:**
  Successful bidder, before beginning work, shall execute a performance bond and a payment bond, each of which must be in the amount of the contract. The required payment and performance bonds must each be executed by a corporate surety in accordance with Section 1, Chapter 87, Acts of the 56th Legislature, Regular Session, 1959 (Article 7.19-1, Vernon's Texas Insurance Code).

Attention is called to the fact that not less than, the federally determined prevailing (Davis-Bacon and Related Acts) wage rate, as issued by the Office of Rural Community Affairs and contained in the 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.

The Galveston County Commissioners' Court reserves the right to waive any informality and to reject any and all bids and to accept the bid or bids which, in its opinion, is most advantageous to Galveston County with total respect the governing laws.

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

Rufus G. Crowder, CPPO CPPB
Purchasing Agent
Galveston County

ITB #B191024
OPEN: 12/18/2018
TIME: 2:00P.M.

INVITATION TO BID
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GALVESTON COUNTY, TEXAS

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GENERAL PROVISIONS – INVITATION TO BID
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1. BID PACKAGE

The Invitation to Bid, general and special provisions, drawings, specifications/line item details, contract documents and the Bid sheet are all part of the Bid package. ***BIDs must be submitted in sets of six(6), one (1) unbound original and five (5) copies*** *on the forms provided by the County if County forms are provided, including the Bid sheets completed in their entirety and signed by an authorized representative by original signature. Failure to complete and sign the Bid sheets/contract page(s) may disqualify the Bid from being considered by the Commissioners' Court. Any individual signing on behalf of the Bidder expressly affirms that he or she is duly authorized to tender this Bid and to sign the Bid sheet/contract under the terms and conditions in this bid on behalf of the Bidder and to bind the Bidder to the terms and conditions of this bid and the Bidder's response hereto. Bidder further understands that its' signing of the contract shall be of no effect unless the contract is subsequently awarded by the Commissioners' Court and the contract properly executed by the Commissioners' Court. All figures must be written in ink or typed. Figures written in pencil or with erasures are not acceptable. However, mistakes may be crossed out, corrections inserted, and initialed in ink by the individual signing the bid. If there are discrepancies between unit prices quoted and extensions, the unit price shall prevail. Each Bidder is required to thoroughly review this entire Bid package to familiarize themselves with the Bid procedures, the plans and specifications for the requested work, as well as the terms and conditions of the contract the successful Bidder will execute with the County.*

2. BIDDER'S RESPONSIBILITY

The Bidder must affirmatively demonstrate its responsibility. The Bidder must also meet the following minimum requirements:

A. have adequate financial resources or the ability to obtain such resources as required;
B. be able to comply with all federal, state, and local laws, rules, regulations, ordinances and orders regarding this Invitation to Bid;
C. have a satisfactory record of performance;
D. have a satisfactory record of integrity and ethics; and
E. be otherwise qualified and eligible to receive an award.

3. TIME FOR RECEIVING BIDS

Bids may be submitted by mail or hand delivery and **must be submitted only to the Galveston County Purchasing Agent**. If by delivery, the Bidder must deliver to the reception desk in the County Purchasing Agent's Office. The delivery and mailing instructions for the Galveston Count Purchasing Agent are the following:

Rufus Crowder, CPPO CPPB
Galveston County Purchasing Agent
722 Moody, Fifth (5th) Floor
Galveston, Texas 77550

Bids will **not** be accepted by facsimile transmission or by electronic mail (email) unless superseded by instructions within the Special Provisions sections of this solicitation. Bids must be received by the County Purchasing Agent on or before the deadline for the opening of the bids. For clarity, mailing date/postmark is **not** sufficient – bids **must be received** by the County Purchasing Agent on or before the deadline. Late bids will not be accepted and will be returned to the bidder unopened. Bids received prior to the submission deadline will be maintained unopened until the specified time for opening.

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The County Purchasing Agent will accept bids from 8:00 a.m. to 5:00 p.m. on each business day up to the submission deadline. Business days do not include Saturdays and Sundays, and do not include other days in which the County is closed for business in observance of holidays or for other reasons.

The time-stamp clock within the County Purchasing Agent's Office shall be the official time-clock for the purpose of this solicitation and thus shall be the determinant of whether the bid was timely received.

The bidder should prominently identify the procurement number and name on the outside of the envelope/mailing package. A label shall be provided for this purpose and usage of the label is preferred. If the bidder fails to identify the bid on the outside of the envelope as required, the Purchasing Agent will open the envelope for the sole purpose of identifying the bid number for which the submission was made. The envelope will then be resealed. No liability will attach to a County office or employee for the premature opening of a bid.

If a bid is not submitted, return this Invitation to Bid and state reason (s), otherwise your name may be removed from the Purchasing Agent's mailing list.

4. COMPETITIVENESS, INTEGRITY, INQUIRIES AND QUESTIONS

To prevent biased evaluations and to preserve the competitiveness and integrity of the procurement process, **bidders are to direct all communications regarding this invitation to bid only to the Galveston County Purchasing Agent,** unless otherwise specifically noted.

Do not contact the requesting department. Attempts by offering firms to circumvent this requirement will be viewed negatively and may result in rejection of the bid of the firm found to be in non-compliance.

All questions regarding this Invitation to Bid must be submitted in writing to:

Rufus Crowder, CPPO CPPB, Purchasing Agent
722 Moody
Fifth (5th) Floor
Galveston, Texas 77550
Fax: (409) 621-7997
E-mail: purchasing.bids@co.galveston.tx.us

All questions received and the responses thereto will be mailed, emailed, or faxed to all prospective bidders by addendum. No inquiries except clarification of instructions will be addressed by telephone.

Bidder is advised to carefully review this Invitation to Bid – it provides specific information necessary to aid participating firms in formulating a thorough response. Bidder's failure to examine all documents shall not entitle the bidder to any relief from the conditions imposing in the Invitation to Bid and the resultant contract.

An authorized person from the bidder must sign the bid. This signatory must be a person from the submitting firm who is duly authorized to tender and sign the bid on behalf of the bidder and to bind the bidder to the terms and conditions of this Invitation to Bid, the bidder's response, and all other terms and conditions of the contract. By this signature, the bidder further acknowledges that the bidder has read the bid documents thoroughly before submitting a bid and will fulfill the obligations in accordance to the terms, conditions, and specifications detailed herein.

GENERAL PROVISIONS – INVITATION TO BID
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5. BID OPENING

The Purchasing Agent shall open the bids on the date and time specified herein. Information read aloud at the bid opening is at the sole discretion of the Purchasing Agent. The Purchasing Agent will examine bids promptly and thoroughly.

6. WITHDRAWAL OF BID/FIRM BID RULE

Bidders may request withdrawal of their sealed bid prior to the scheduled bid opening time provided the request for withdrawal is submitted to the Purchasing Agent in writing. No bids may be withdrawn for a period of sixty (60) calendar days after opening of the bids.

7. COMMISSIONERS COURT

No contract is binding on the County until it is properly placed on the Commissioners Court agenda, approved in open Court, authorized to be executed by the County Judge, and fully executed by both parties.

Department heads and elected officials are not authorized to enter into any type of agreement or contract on behalf of the County. Only the Commissioners Court acting as a body may enter into a contract on behalf of and contractually bind the County. Additionally, department heads and elected officials are not authorized to agree to any type of supplemental agreements or contracts for goods or services. Supplemental agreements are subject to review by the County Legal Department prior to being accepted and signed by the County's authorized representative.

8. REJECTION OF BIDS/DISQUALIFICATION

Galveston County, acting through its Commissioners Court, reserves the right to:

- reject any and all Bids in whole or in part received by reason of this Invitation to Bid;
- waive any informality in the Bids received;
- disregard the Bid of any Bidder determined to be not responsible;
- disregard the Bid of any Bidder determined to have not submitted its Bid timely; and/or;
- discontinue its efforts for any reason under this Bid package at any time prior to actual execution of contract by the County.

Bidders may be disqualified and rejection of Bids may be recommended to the Commissioners Court for any of (but not limited to) the following causes:

A. Failure to use the bid forms furnished by the County, if applicable;
B. Lack of signature by an authorized representative of bidder;
C. Failure to properly complete the bid;
D. Engaging in communications regarding this procurement during the pendency of this procurement with County officials and/or personnel who are not within the Purchasing Agent's Office;
E. Failure to meet the mandatory requirements of this invitation to bid; and/or
F. Evidence of collusion among bidders.

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9. RESTRICTIVE OR AMBIGUOUS SPECIFICATIONS

It is the responsibility of the prospective Bidder to review the entire Invitation to Bid packet and to notify the Purchasing Agent if the specifications are formulated in a manner that would restrict competition or appear ambiguous. Any protest or question(s) regarding the specifications or Bid procedures must be received in the Purchasing Agent's Office not less than seventy-two (72) hours prior to the time set for Bid opening. Bidders are to submit their Bid as specified herein or propose an approved equal.

10. SUBSTITUTES/DESCRIPTION OF MATERIALS AND EQUIPMENT

Any brand name or manufacturer reference used herein is intended to be descriptive and not restrictive, unless otherwise noted, and is used to indicate the type and quality of material. The term "or equal" if used, identifies commercially produced items that have the essential performance and salient characteristics of the brand name stated in the item description. All supplies, material, or equipment shall be new and of the most suitable grade for the purpose intended. For clarification, "new" includes products containing recovered materials that are EPA-designated items and additionally see Section 63 of these General Provisions on contracts involving federal funds. It is not the County's intent to discriminate against any materials or equipment of equal merit to those specified. However, if Bidder desires to use any substitutions, prior written approval must be obtained from the Purchasing Agent and sufficiently in advance such that an addendum may be issued. All material supplied must be one hundred percent (100%) asbestos free. Bidder, by submission of its bid, certifies that if awarded any portion of this procurement, the bidder will supply only material and equipment that is 100% asbestos free.

11. EXCEPTIONS TO BID

The Bidder will list on a separate sheet of paper any exceptions to the conditions of the bid. This sheet will be labeled, "Exceptions to Bid Conditions", and will be attached to the bid. If no exceptions are stated, it will be understood that all general and special conditions will be complied with, without exception.

The Bidder must specify in its Bid any alternatives it wishes to propose for consideration by the County. Each alternative should be sufficiently described and labeled within the Bid and should indicate its possible or actual advantage to the program being offered.

The County reserves the right to offer these alternatives to other Bidders.

12. PRICING

Bids will be either lump sum or unit prices as shown on the Bid sheet. The net priced items will be delivered to Galveston County, including all freight, shipping, and delivery charges.

Cash discount must be shown on bid, otherwise prices will be considered net. Unless prices and all information requested are complete, Bid may be disregarded and given no consideration.

In case of default by the contractor, the County of Galveston may procure the articles or services from other sources and may deduct from any monies due, or that may thereafter become due to the contractor, the difference between the price named in the contract of purchase order and the actual cost thereof to the County of Galveston. Prices paid by the County of Galveston shall be considered the prevailing market price at the time such purchase is made. Periods of performance may be extended if the facts as to the cause of delay justify such extension in the opinion of the Purchasing Agent and the Commissioners' Court.

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13. PROCUREMENT CARD (P-CARD) PROGRAM

The County of Galveston participates in a Procurement Card (P-Card) program that allows payments made to a vendor by credit card. This method typically results in substantially faster bill payments, sometimes within three (3) to five (5) days of the actual transaction date. All transaction fees from the card provider are to be paid by the successful contractor. If your company will accept payment via credit card (Visa, MasterCard), please notate this in your Bid submittal.

14. PASS THROUGH COST ADJUSTMENTS

Except in instances of extreme extenuating circumstances Contractor prices shall remain firm throughout the contract period and any renewals. Examples of extreme extenuating circumstances include such situations as a nationwide rail strike, oil shortage or oil embargo.

In extreme extenuating circumstances, Contractors may be allowed to temporarily "pass through" additional costs they are forced to incur through no fault of their own. A request for a pass through cost increase will not be considered unless a Contractor's cost for the Contractor's product exceeds 10% over the original cost for the product. Also, the increase in cost must be nationwide and consistent for a minimum period of sixty (60) days. Costs that historically are anticipated to rise over a period of time (for example only, such as wages or insurance costs) do not qualify for pass through. If a Contractor thinks he will be asking for a pass through cost adjustment during the term of the contract, then the original cost of the product to Contractor must be stated in Contractor's original bid.

A request for a pass through cost does not guarantee that one will be granted. Contractors must submit such information on each request as required by the County Purchasing Agent. The County Purchasing Agent will review each request on a case-by-case basis and if valid, submit the request to Commissioners Court for authorization and determination of the appropriateness of each request as well as amount and duration of increase. Contractors will not be permitted any additional compensation for mark-ups or profits based on the increase in price. Rather, such additional compensation will be limited to the actual increase in original cost to the Contractor as such increase is reflected by the original cost stated in the bid. But in no event will the amount of additional compensation exceed 25% increase in Contractor's original cost for the product as such cost is reflected in Contractor's original Bid or the duration exceed a period of sixty (60) days. In addition should the cost, during the period of the pass through, return to normal or decrease to below pre pass through prices, appropriate downward adjustments shall be made. No more than one pass through adjustment will be permitted per year.

15. MODIFICATION OF BIDS

A Bidder may modify a bid by letter at any time prior to the submission deadline for receipt of Bids. Modification requests must be received prior to the submission deadline. Modifications made before opening time must be initialed by Bidder guaranteeing authenticity. Bids may not be amended or altered after the official opening with the single exception that any product literature and/or supporting data required by the actual specifications, if any, will be accepted at any time prior to the Commissioners' Court considering of same.

16. PRE-BID CONFERENCE

A pre-bid conference for the purpose of discussing contract requirements and answering questions of prospective bidders may be conducted in this procurement. A pre-bid conference may be mandatory or voluntary. If the pre-bid conference is mandatory, then the County is authorized to condition acceptance of a bid on compliance with attendance. The Special Provisions of this procurement shall specify if a pre-bid conference is to be held and shall specify whether the pre-bid conference is mandatory or voluntary. Only a principal, officer, or employee of the bidder

may represent the bidder at the pre-bid conference and no person may represent more than one bidder at the pre-bid conference.

17. SIGNATURE OF BIDS

Each Bid shall give the complete mailing address of the Bidder and be signed by an authorized representative by original signature with the authorized representative's name and legal title typed below the signature line. Each bid shall include the Bidder's Federal Employer Identification Number (FEIN). Failure to sign the Contract page(s) and bid response sheets may disqualify the bid from being considered by the County. The person signing on behalf of the Bidder expressly affirms that the person is duly authorized to tender the bid and to sign the bid sheets and contract under the terms and conditions of this Invitation to Bid and to bind the Bidder thereto and further understands that the signing of the contract shall be of no effect until it is properly placed on the Commissioners' Court agenda, approved in open Court, authorized to be executed by the County Judge, and fully executed by both parties.

18. AWARD OF BIDS – EVALUATION CRITERIA AND FACTORS

The award will be made to the responsible Bidder whose bid is determined to be the lowest and best evaluated offer demonstrating the best ability to fulfill the requirements set forth in this Invitation to Bid. **The proposed cost to the County will be considered firm and cannot be altered after the submission deadline.**

"Lowest and best" means a bid or offer providing the best value considering associated direct and indirect costs, including transport, maintenance, reliability, life cycle, warranties, and customer service after a sale.

In determining the lowest and best bid for a contract for the purchase of earth-moving, material-handling, road maintenance, or construction equipment, the Commissioners Court may also consider the information submitted under Section 262.0255 of the Local Government Code; and in determining the lowest and best bid for a contract for the purchase of road construction material, the Commissioners Court may consider the pickup and delivery locations of the bidders and the cost to the county of delivering or hauling the material to be purchased. The Commissioners Court may award contracts for the purchase of road construction material to more than one bidder if each of the selected bidders submits the lowest and best bid for a particular location or type of material.

Each Bidder, by submitting a bid, agrees that if its' bid is accepted by the Commissioners' Court, such Bidder will furnish all items and services upon which prices have been tendered and upon the terms and conditions in this bid and contract.

The contractor shall commence work only after the transmittal of a fully executed contract and after receiving written notification to proceed from the County Purchasing Agent. The contractor will perform all services indicated in the bid in compliance with this contract.

Neither department heads nor elected officials are authorized to sign any binding contracts or agreements prior to being properly placed on the Commissioners' Court agenda and approved in open court. Department heads and other elected officials are not authorized to enter into any type of agreement or contract on behalf of Galveston County. Only the Commissioners' Court, acting as a body, may enter into a contract on behalf of the County. Additionally, department heads and other elected officials are not authorized to agree to any type of supplemental agreements or contracts for goods or services. Supplemental agreements are subject to review by the County Legal Department prior to being signed by the County's authorized representatives.

The County of Galveston reserves the right to accept bids on individual items listed, or group items, or on the bid as a whole; to reject any and all bids; to waive any informality in the bids; to disregard the bids that are not submitted timely; to disregard the bids of bidders determined to be not responsible; and to accept the bid that appears to be in the

best interest of the County. The selection process may, however, include a request for additional information or an oral presentation to support the written bid.

In determining and evaluating the best bid , the pricing may not necessarily be controlling, but quality, equality, efficiency, utility, general terms, delivery, suitability of the service offered, and the reputation of the service in general use will also be considered along with any other relevant items. The Commissioners' Court shall be the sole judge in the determination of these matters.

The County reserves the right to reject any or all Bids in whole or in part received by reason of this Invitation to Bid and may discontinue its efforts under this Invitation to Bid for any reason or no reason or solely for the County's convenience at any time prior to actual execution of the contract by the County.

A Bidder whose bid does not meet the mandatory requirements set forth in this Invitation to Bid may be considered non-compliant.

The invitation to submit a bid which appears in the newspaper, or other authorized advertising mediums, these general provisions, the specifications which follow, the Bid sheets, and any addenda issued are all considered part of the Bid.

Each Bidder, by submitting a bid, agrees that if its bid is accepted by the Commissioners' Court, such Bidder will furnish all items and services upon the terms and conditions in this Invitation to Bid and the resultant contract.

Notice of contract award is anticipated to be made within ninety (90) days of opening of Bids to the lowest responsive and responsible contractor, whose bid complies with all the requirements in the Invitation to Bid.

Contractor shall submit to the County, for approval, within ten (10) days from notice of contract award, all Certificates of Insurance evidencing the required coverage as described under Section 35, Requirement of and Proof of Insurance, or if different, then as described within the Special Provisions or resultant contract.

The contractor shall not commence work under these terms and conditions of the contract until all applicable Purchase Orders, Certificates of Insurance, Performance and Payment Bonds, and Irrevocable Letters of Credit (if required) have been approved by the County of Galveston and the Contractor has received notice to proceed in writing and an executed copy of the contract from the County Purchasing Agent.

19. DISPUTE AFTER AWARD/PROTEST

Any actual or prospective Bidder who is allegedly aggrieved in connection with the solicitation of this Invitation to Bid or award of a contract resulting therefrom may protest. The protest shall be submitted in writing to the Purchasing Agent within seven (7) calendar days after such aggrieved person knows of or should have known of the facts giving rise thereto. If the protest is not resolved by mutual agreement, the Purchasing Agent will promptly issue a decision in writing to the protestant. If the protestant wishes to appeal the decision rendered by the Purchasing Agent, such appeal must be made to the Commissioners' Court through the Purchasing Agent. The decision of the Commissioners' Court will be final. The Commissioners' Court need not consider protests unless this procedure is followed.

20. PUBLIC INFORMATION ACT (f/k/a Open Records Act)

The bidder acknowledges that the County is a government body for purposes of the Public Information Act, codified as Chapter 552 of the Texas Government Code, and as such is required to release information in accordance with the provisions of the Public Information Act.

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If bidder considers any of its submitted information to be proprietary in nature, trade secret, or otherwise confidential, then it must clearly and conspicuously mark such information as proprietary, trade, secret, or confidential. By the submission of its bid, Bidder expressly affirms that it has clearly and conspicuously marked any information within its submission that Bidder considers confidential, proprietary, and/or trade secret.

In the event the County receives a request for information under the Public Information Act seeking information that the Bidder has marked as confidential, proprietary, and /or trade secret, then the County agrees that it shall provide notice to the Bidder of the request for information and the request for decision process under the Public Information Act. Thus, the County will submit the initial correspondence to the Texas Attorney General – however, the burden is and shall be on the Bidder to submit correspondence to the Attorney General if the Bidder wishes its information to be withheld. Bidder is deemed to have knowledge of the Public Information Act. **By the submission of its bid, bidder expressly acknowledges that the burden to withhold its' information from public disclosure lays with the bidder;** thus, bidder further acknowledges and agrees that it shall submit comments to the Texas Attorney General in the request for decision process if bidder wishes to have its' information withheld from public disclosure.

21. BIDDER'S E-MAIL ADDRESSES – CONSENT TO DISCLOSURE

Notwithstanding the foregoing Section 19, Bidder acknowledges and agrees that the confidentiality of any and all email addresses Bidder uses or discloses in communicating with the County are **open** to the public in accordance with Section 552.137 of the Government Code and Bidder consents to the release of its email addresses.

22. RESULTANT CONTRACT

Bidder shall correctly and fully execute the resultant contract first. After this, the contract shall be set for consideration by the Commissioners' Court. If the Commissioners' Court authorizes the execution of the contract, the resultant contract shall become effective upon the Commissioners' Court execution of same, provided that the contract is executed by all parties to the contract. Contract documents shall consist of the contract, the General and Special Provisions, drawings, bid package (including best and final offer(s) if such is utilized), any addenda issued, and any change orders issued during the work. If applicable to the attached bid, bidder must sign three (3) original contracts and return all three with their bid submittal.

Bidder should submit a proposed contract with its Bid or its sample material terms and conditions for review and consideration.

23. CONTRACT TERM

The term of the resultant contract will begin on the date of full execution or the execution by the Commissioners' Court, whichever is later, and will terminate on the date specified in the resultant contract unless terminated earlier as herein set forth.

24. TERMINATION FOR DEFAULT

Failure of either party in the performance of any of the provisions of this contract shall constitute a breach of contract, in which case either party may require corrective action within ten (10) business days from date of receipt of written notice citing the exact nature of such breach. Failure of the party being notified to take corrective action within the

prescribed ten (10) business days, or failure to provide written reply of why no breach has occurred, shall constitute a Default of Contract.

All notices relating to default by Bidder of the provisions of the contract shall be issued by the County through its Legal Department, and all replies shall be made in writing to the County Legal Department. Notices issued by or issued to anyone other than the County Legal Department shall be null and void and shall be considered as not having been issued or received.

Galveston County reserves the right to enforce the performance of this contract in any manner prescribed by law in the event of breach or default of this contract, and may contract with another party, with or without solicitation of bids or further negotiations. At a minimum, Bidder shall be required to pay any difference in service or materials, should it become necessary to contract with another source, plus reasonable administrative costs and attorney fees.

In the event of Termination for Default, Galveston County, its agents or representatives shall not be liable for loss of any profits anticipated to be made by Bidder.

In addition to the remedies stated herein, the County has the right to pursue other remedies permitted by law or in equity.

No waiver by either party of any event of default under this agreement shall operate as a waiver of any subsequent default under the terms of this agreement.

County reserves the right to terminate this contract immediately in the event Bidder:

A. Fails to meet delivery or completion schedules; and/or
B. Fails to otherwise perform in accordance with the accepted Bid and the contract.

25. TERMINATION FOR CONVENIENCE

County may terminate this contract upon at least thirty (30) calendar days prior written notice for its convenience or for any reason deemed by the County to serve the public interest. As well, County may terminate this contract upon thirty (30) calendar days prior written notice for any reason resulting from any governmental law, order, ordinance, regulation, or court order. In no event shall County be liable for loss of any profits anticipated to be made hereunder by Bidder should this contract be terminated early.

26. FORCE MAJEURE

If by reason of Force Majeure either Party shall be rendered unable, wholly or in part, to carry out its responsibilities under this contract by any occurrence by reason of Force Majeure, then the Party unable to carry out its responsibility shall give the other Party notice and full particulars of such Force Majeure in writing within a reasonable time after the occurrence of the event, and such notice shall suspend the Party's responsibility for the continuance of the Force Majeure claimed, but for no longer period.

Force Majeure means acts of God, floods, hurricanes, tropical storms, tornadoes, earthquakes, or other natural disasters, acts of a public enemy, acts of terrorism, sovereign conduct, riots, civil commotion, strikes or lockouts, and other causes that are not occasioned by either Party's conduct which by the exercise of due diligence the Party is unable to overcome and which substantially interferes with operations.

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27. ESTIMATED QUANTITIES

Any reference to quantities shown in the Invitation to Bid is an estimate only. Since the exact quantities cannot be predetermined, the County reserves the right to adjust quantities as deemed necessary to meet its requirements.

28. CONTRACTOR INVESTIGATION

Before submitting a bid, each Bidder shall make all investigations and examinations necessary to ascertain all site conditions and requirements affecting the full performance of the contract and to verify any representations made by the County upon which the contractor will rely. Bidder shall exercise due diligence and is further charged with knowledge of the local, State, and Federal laws, rules, and regulations applicable to this contract. If the bidder receives an award as a result of its bid submission in this procurement, the bidder's failure to have made such investigations and examinations will in no way relieve the bidder from its obligation to comply in every detail with all provisions and requirements of the contract, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim whatsoever by the contractor for additional compensation and/or for excused nonperformance.

29. NO COMMITMENT BY COUNTY OF GALVESTON

This Invitation to Bid does not commit the County of Galveston to award any costs or pay any costs, or to award any contract, or to pay any costs associated with or incurred in the preparation of a bid in response to this Invitation to Bid and does not commit the County of Galveston to procure or contract for services or supplies.

30. BID COSTS BORNE BY BIDDER

Galveston County shall not be liable for any costs incurred by Bidder in preparation, production, or submission of a bid, including but not limited to best and final offer if applicable. As well, Galveston County shall not be liable for any work performed by Bidder prior to issuance of fully executed contract and properly issued notice to proceed. Galveston County shall not be liable for any costs incurred by Bidder by reason of attending a pre-Bid conference. Galveston County shall not be liable for any costs incurred by Bidder by reason of the County invoking use of best and final offers.

31. BEST AND FINAL OFFIERS (BAFO)

Not applicable.

32. SINGLE BID RESPONSE

If only one bid is received in response to the Invitation to Bid, a detailed cost bid may be requested of the single bidder. A cost/price analysis and evaluation and/or audit may be performed of the cost bid in order to determine if the price is fair and reasonable.

33. CHANGES IN SPECIFICATIONS

If it becomes necessary to revise any part of this bid, a written notice of such revision will be provided to all Bidders in the form of addenda. The County is not bound by any oral representations, clarifications, or changes made in the written specifications by the County's employees or officials, unless such clarification or change is provided to

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Bidders in a written addendum from the Purchasing Agent. Bidders are advised to inquire prior to the submission deadline as to whether any addenda to this invitation to bid have been issued, as the successful bidder will be required to abide by such addenda.

The County of Galveston reserves the right to revise or amend the specifications up to the time set for opening of bids. Such revisions and amendments, if any, shall be announced by form of addenda. Copies of such addenda (or addendum in the event only one addendum is issued in the procurement) shall be furnished to all prospective contractors. Prospective contractors are defined as those contractors listed on the County's Invitation to Bid list for this material/service or those who have obtained documents from the Purchasing Agent's Office subsequent to the advertisement. If revisions and amendments require changes in quantities or prices proposed, or both, the date set for opening of bids may be postponed by such number of days as in the opinion of the County shall enable contractors to revise their bids. In any case, the bid opening shall be at least seven (7) business days after the last revising or amendment addendum and the addendum shall include an announcement of the new date, if applicable, for the opening of bids.

34. BID IDEAS AND CONCEPTS

The County reserves to itself the right to adopt or use for its benefit, any concept, plan, or idea contained in any bid.

35. BID DISCLOSURES

While this procurement is pending, the names of those who submitted bids will not be made public unless in conformity with the County Purchasing Act. Likewise, no pricing or staffing information will be released unless in conformity with the County Purchasing Act. Bidders are requested to withhold all inquiries regarding their bid or other submissions until after an award is made. No communication is to be had with any County employee or official, other than the County Purchasing Agent, regarding whether a bid was received - violations of this provision may result in the rejection of a bid.

36. INDEMNIFICATION

The contractor agrees to assume all risks and responsibility for, and agrees to indemnify, defend, and save harmless, the County of Galveston, its elected and appointed officials and department heads, agents and employees from and against all claims, demands, suits, actions, recoveries, judgments, and costs and expenses including reasonable attorney's fees for the defense thereof arising out of or in connection therewith on account of the loss of life, property or injury or damage to the person which shall arise from contractor's operations under this contract, its use of County facilities and/or equipment or from any other breach on the part of the contractor, its employees, agents or any person(s), in or about the County's facilities with the expressed or implied consent of the County. Contractor shall pay any judgment with cost which may be obtained against Galveston County resulting from contractor's operations under this contract.

Contractor agrees to indemnify and hold the County harmless from all claims of subcontractors, laborers incurred in the performance of this contract. Contractor shall furnish satisfactory evidence that all obligations of this nature herein above designated have been paid, discharged or waived. If Contractor fails to do so, then the County reserves the right to pay unpaid bills of which County has written notice direct and withhold from Contractor's unpaid compensation a sum of money reasonably sufficient to liquidate any and all such lawful claims.

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37. REQUIREMENT OF AND PROOF OF INSURANCE

The successful Bidder shall furnish evidence of insurance to the County Purchasing Agent and shall maintain such insurance as required hereunder or as may be required in the Special Provisions or resultant contract, if different. Contractor shall obtain and thereafter continuously maintain in full force and effect, commercial general liability insurance, including but not limited to bodily injury, property damage, and contractual liability, with combined single limits as listed below or as may be required by State or Federal law, whichever is greater.

A. For damages arising out of bodily injury to or death of one person in any one accident :
ONE HUNDRED THOUSAND AND NO/100 ($100,000.00) DOLLARS.

B. For damages arising out of bodily injury to or death of two or more persons in any one accident:
THREE HUNDRED THOUSAND AND NO/100 ($300,000.00) DOLLARS.

C. For any injury to or destruction of property in any one accident :
ONE HUNDRED THOUSAND AND NO/100 ($100,000.00) DOLLARS.

Insurance shall be placed with insurers having an A.M. Best's rating of no less than A. Such insurance must be issued by a casualty company authorized to do business in the State of Texas, and in standard form approved by the Board of Insurance Commissioners of the State of Texas, with coverage provisions insuring the public from loss or damage that may arise to any person or property by reason of services rendered by Contractor.

Galveston County shall be listed as the additional insured on policy certificates and shall be provided with no less than thirty (30) calendar days prior notice of any changes to the policy during the contractual period.

Certificates of Insurance, fully executed by a licensed representative of the insurance company written or countersigned by an authorized Texas state agency, shall be filed with the County Purchasing Agent within ten (10) business days of issuance of notification from the County Purchasing Agent to Bidder that the contract is being activated as written proof of such insurance and further provided that Bidder shall not commence work under this contract until it has obtained all insurance required herein, provided written proof as required herein, and received written notice to proceed issued from the County Purchasing Agent.

Proof of renewal/replacement coverage shall be provided prior to the expiration, termination, or cancellation date of any policy and Galveston County shall be named as an additional insured on any such renewal/replacement coverage and a certificate of insurance showing such shall be provided to the Purchasing Agent. Said insurance shall not be cancelled, permitted to expire, or changed without at least thirty (30) days prior written notice to the County.

Insurance required herein shall be maintained in full force and effect during the life of this contract and shall be issued on an occurrence basis. Contractor shall require that any and all subcontractors that are not protected under the Contractor's own insurance policies take and maintain insurance of the same nature and in the same amounts as required of Contractor and provide written proof of such insurance to Contractor. Proof of renewed/replacement coverage shall be provided prior to the expiration, termination, or cancellation date of any policy. Contractor shall not allow any subcontractor to commence work on the subcontract until such insurance required for the subcontractor has been obtained and approved.

Workers' Compensation Insurance: Successful Bidder shall carry in full force Workers' Compensation Insurance Policy(ies), if there is more than one employee, for all its' employees, including but not limited to full time, part time, and emergency employees employed by the successful Bidder. Current insurance certificates certifying that such policies as specified above are in full force and effect shall be furnished by successful Bidder to the County.

Insurance is to be placed with insurers having a Best rating of no less than A. The Bidder shall furnish the County with certificates of insurance and original endorsements affecting coverage required by these insurance clauses within

ten (10) business days of receiving notification from the County Purchasing Agent that the contract is being activated. The certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. The Bidder shall be required to submit annual renewals for the term of this contract prior to expiration of any policy.

In addition to the remedies stated herein, the County has the right to pursue other remedies permitted by law or in equity.

The County agrees to provide Bidder with reasonable and timely notice of any claim, demand, or cause of action made or brought against the County arising out of or related to utilization of the property. Bidder shall have the right to defend any such claim, demand, or cause of action at its sole cost and expense and within its sole and exclusive discretion. The County agrees not to compromise or settle any claim or cause of action arising out of or related to the utilization of the property without the prior written consent of the Bidder.

In no event shall the County be liable for any damage to or destruction of any property belonging to the Bidder.

Subrogation Waiver. Bidder and Bidder's insurance carrier waive any and all rights to subrogation against Galveston County in regard to any suit or claim arising out of personal injury or property damage resulting from Bidder's performance under this agreement.

38. BID GUARANTEE

Unless specified differently within the Special Provisions of this procurement, each Bidder shall be required to submit a bid guarantee with its bid as required within this Section.

Evidencing its firm commitment to engage in contract if Bidder is selected for award of contract, each Bidder is required to furnish with their bid a cashier's check or an acceptable Bidder's bond in the amount of five percent (5%) of the total contract price. If Bidder is using a bond, then the Bidder bond must be executed with a surety company authorized to do business in the State of Texas. Failure to furnish the bid guarantee in the proper form and amount, by the time set for opening of bids may be cause for rejection of the bid.

The cashier's check or Bidder/bid bond (as applicable) will be returned to each respective unsuccessful Bidder(s) subsequent to the Commissioners Court award of contract, and shall be returned to the successful Bidder upon the completion and submission of all contract documents. Provided however, that the cashier's check or Bidder bond will be forfeited to the County as liquidated damages should successful Bidder fail to execute the contract within thirty (30) days after receiving notice of the acceptance of its bid.

39. PERFORMANCE AND PAYMENT BONDS (if required)

Successful Bidder, before beginning work, shall execute a performance bond and a payment bond, each of which must be in the amount of the contract. The required payment and performance bonds must each be executed by a corporate surety authorized to write surety bonds in the State of Texas and in accordance with Chapter 3503 of the Insurance Code (codified in 2005 and originally within Section 1, Chapter 87, Acts of the 56th Leg., R.S., 1959, and in Article 7.19-1, Vernon's Texas Insurance Code).

The performance and payment bonds must each clearly and prominently display on the bond or on an attachment to the bond:

a.) The name, mailing address, physical address, and telephone number, including the area code, of the surety company to which any notice of claim should be sent; or

b.) The toll-free telephone number maintained by the Texas Department of Insurance under Subchapter B, Chapter

521, Insurance Code, and a statement that the address of the surety company to which any notice of claim should be sent may be obtained from the Texas Department of Insurance by calling the toll free-telephone number.

The performance bond shall be solely for the protection of Galveston County, in the full amount of the contract, and conditioned on the faithful performance of the work in accordance with the plans, specifications, and contract documents. The payment bond is solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the prime contractor or a subcontractor to supply labor or material, and in the amount of the contract.

The payment and performance bonds required to be furnished herein must be furnished before the contractor begins work and are a requirement for issuance of a Notice to Proceed. Such bonds must be furnished to the Galveston County Purchasing Agent within thirty (30) calendar days after the date of the full execution of the contract or, if applicable, as required under Chapter 2253, Government Code, whichever is earlier. Contractor's failure to provide the required payment and performance bonds within such time period shall constitute an event of default under this contract. Contractor shall not commence work until all applicable certificates of insurance, performance bonds, and payment bonds have been received and approved by the County Purchasing Agent and the Contractor receives notice to proceed in writing that has been issued by the County Purchasing Agent.

Additionally, if this request for bid is for the award of a public works contract, then compliance with Chapter 2253 of the Texas Government Code, which is known as the McGregor Act, is mandatory. Performance and payment bonds are required to be furnished in accordance with Chapter 2253 of the Texas Government Code. Bidder should familiarize itself with the entire provisions of Chapter 2253 of the Texas Government Code.

40. PATENT AND COPYRIGHT PROTECTION

The Bidder agrees at its sole expense to protect the County from claims involving infringement of patents, copyright, trademark, trade secret, or other intellectual property rights. **Bidder shall indemnify and save harmless the County of Galveston, its officers, employees, and agents, from liability of any nature and kind whatsoever, including without limitation cost and expenses, for or on account of any copyrighted, trademarked, trade secret, patented or un-patented invention, process, or article manufactured or used in the performance of the contract, or other intellectual property rights, including its use by the County.** Bidder also agrees that if Bidder is awarded this contract, that no work performed hereunder shall be subject to patent, copyright, or other intellectual property by Bidder.

41. CONFLICT OF INTEREST DISCLOSURE REPORTING (FORM CIQ)

Bidder may be required under Chapter 176 of the Texas Local Government Code to complete and file a conflict of interest questionnaire (CIQ Form). The CIQ Form pertains to business relationship, gift giving and family relationship reporting. If bidder is required to file a CIQ Form, then the completed CIQ Form must be filed with the County Clerk of Galveston County, Texas.

Business relationship. If Bidder has an employment or other business relationship with a local government officer of Galveston County or with a family member of a local government officer of Galveston County that results in the officer or family member of the officer receiving taxable income that exceeds $2,500.00 during the preceding 12-month period, then Bidder **MUST** complete a CIQ Form and file the original of the CIQ Form with the County Clerk of Galveston County.

Gift-giving. If Bidder has given a local government officer of Galveston County or a family member of a local government officer of Galveston County one or more gifts with an aggregate value of more than one-hundred dollars

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($100.00) during the preceding 12-months, then Bidder **MUST** complete a CIQ Form and file the original of the CIQ Form with the County Clerk of Galveston County.

Family member. For purposes of the business relationship and gift giving reporting requirements, a "family member" means a person related to another person with the first degree of consanguinity or affinity, as described by Subchapter B, Chapter 573, Texas Government Code. Examples of persons within the first degree by consanguinity or affinity include a son, daughter, father, mother, spouse, son-in-law, daughter-in-law, father-in-law, mother-in-law, stepson, stepdaughter, stepmother, and stepfather.

Family relationship. If Bidder has a "family relationship" with a local government officer of Galveston County then Bidder **MUST** complete a CIQ Form and file the original of the CIQ Form with the County Clerk of Galveston County, regardless of whether Bidder has a business relationship or has given gifts to the local government officer or a family member of the local government officer. For this purpose, "family relationship" means Bidder is related within the third degree by consanguinity or the second degree by affinity, as those terms are defined under Chapter 573 of the Texas Government Code, to a local government officer of Galveston County. Examples of such relationships include a son, daughter, mother, father, brother, sister, grandchild, great-grandchild, grandparent, great-grandparent, niece, nephew, uncle, aunt, spouse, mother-in-law, father-in-law, daughter-in-law, son-in-law, spouse's grandchild, spouse's grandparent, grandparent's spouse, grandchild's spouse, stepson, stepdaughter, stepmother, and stepfather.

Bidder must file its original CIQ Form with the Galveston County Clerk. The Galveston County Clerk has offices at the following locations:

Galveston County Clerk
Galveston County Justice Center, Suite 2001
600 59th Street
Galveston, Texas 77551

Galveston County Clerk
North County Annex, 1st Floor
174 Calder Road
League City, Texas 77573

Again, if Bidder is required to file a CIQ Form, the original completed form is filed with the Galveston County Clerk (**not the Purchasing Agent**).

For Bidder's convenience, a blank CIQ Form is enclosed with this bid package. Blank CIQ Form(s) may also be obtained by visiting the Purchasing Agent's website – this website is linked from the Galveston County homepage, at http://www.galvestoncountytx.gov.

Chapter 176 specifies deadlines for the filing of CIQ Forms (both initial filings and updated filings).

It is Bidder's sole responsibility to file a true and complete CIQ Form with the Galveston County Clerk if Bidder is required to file by the requirements of Chapter 176 of the Local Government Code. Bidder is advised that it is an offense to fail to comply with the disclosure reporting requirements dictated under Chapter 176 of the Texas Local Government Code, and the failure to file may be grounds to void the contract, if Bidder is awarded a contract.

If bidder has any questions about compliance with Chapter 176, Bidder may wish to consult its' legal counsel. Compliance is the individual responsibility of each person, business, and agent who is subject to Chapter 176 of the Texas Local Government Code.

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42. DISCLOSURE OF INTERESTED PARTIES/FORM 1295

Under Section 2252.908 of the Government Code, any business entity that enters into a contract with Galveston County that requires the approval of the Commissioners Court must submit a "Disclosure of Interested Parties" to the County prior to the execution of the contract. This form, the "Disclosure of Interested Parties" form was promulgated by the Texas Ethics Commission, and is the "Form 1295". **This procurement is subject to these requirements.**

The Texas Ethics Commission was charged with promulgating rules to implement Section 2252.908 of the Government Code. The rules adopted by the Texas Ethics Commission are located at Sections 46.1, 46.3, and 46.5 of Title 1 of the Texas Administrative Code. Thus, the law covering these requirements is located at Section 2252.908 of the Government Code, and in Title 1, Sections 46.1, 46.3, and 46.5 of the Texas Administrative Code.

The Texas Ethics Commission's website is: www.ethics.state.tx.us. The area of the Texas Ethics Commission website pertaining to Form 1295 is:

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

Form 1295 must be completed electronically through the Texas Ethics Commission website (handwritten forms are not allowable). Once the business entity has completed their electronic filing of Form 1295, then the business entity must print out the electronically completed form, and sign and notarize the Form 1295. Once Form 1295 is signed and notarized, the business entity must submit their completed, signed, and notarized Form 1295 to the Galveston County Purchasing Agent.

Successful Proposer is and shall be subject to these requirements, and no resultant contract may be executed by the Commissioners Court until the completed, signed, and notarized Form 1295 is on file with the County Purchasing Agent.

No portion of the Form 1295 process commits the County to any type of award of contract whatsoever.

After the Purchasing Agent's Office receives the completed, signed, and notarized Form 1295, the Purchasing Agent's Office will, within 30 days, go the Texas Ethics Commission website to submit electronic confirmation of the County's receipt of the completed, signed, and notarized Form 1295.

43. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS & REQUIREMENT TO REGISTER IN SAM

Bidder certifies that neither it, nor any of its Principals, are presently debarred, suspended, proposed for debarment, disqualified, excluded, or in any way declared ineligible for the award of contracts by any Federal agency. Contractor agrees that it shall refund Galveston County for any payments made to Contractor while ineligible. Contractor acknowledges that Contractor's uncured failure to perform under this Agreement, if such should occur, may result in Contractor being debarred from performing additional work for the County, the respecting State Agency administering the grant funding the contract, if applicable, the State, FEMA or HUD (as applicable), and other Federal and State entities. Further, Bidder has executed the Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters and returned the fully completed and executed original certification with the submission of its bid. **The truthful and fully completed and executed original of the Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters must be included with the submission of Bidder's Bid and is a mandatory requirement of this Invitation to Bid. Bidder's failure to include the fully completed and executed original of this Certification shall be considered non-compliance with the requirements of this Invitation to Bid and grounds for the rejection of Bidder's Bid.** Proposer shall immediately notify the County Purchasing Agent if it becomes debarred or suspended, placed on the Consolidated List of Debarred

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Contractors, or in any other way becomes ineligible for award of contract by any Federal agency. This Certification is a material fact relied upon by Galveston County; if it is later determined that the contractor did not comply with 2 C.F.R. Part 180 and 2 C.F.R. Part 3000, in additional to the remedies available to Galveston County and the State agency administering this grant, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment of contractor.

If the contract to be awarded pursuant to this procurement involves the use of Federal funds, then bidder must also be registered in the Federal Contractor Registry through the System for Award Management (SAM) to be eligible for award of contract pursuant to this procurement.

Information regarding the SAM is available at:

http://www.federalcontractorregistry.com/?gclid=CIG1hf2rr8wCFYkCaQoducANZw or at https://www.sam.gov/portal/SAM/#1.

No contract involving the use of Federal funds may be awarded to any bidder unless and until such registration is current and in good standing under SAM. Successful bidder must maintain SAM registration throughout the entire term of the agreement with the County. If this contract involves the use of Federal funds, then bidder must enclose proof of such SAM registration within its response, which is also a mandatory requirement of this procurement; failure to enclose such proof shall be considered non-compliance with the requirements of this procurement and grounds for the rejection of bidder's response to this procurement (i.e., bid, proposal, or qualifications statement, as applicable).

44. SOVEREIGN IMMUNITY

The County specifically reserves any claim it may have to sovereign, qualified, or official immunity as a defense to any action arising in conjunction with this contract.

45. CONTROLLING LAW AND VENUE

Bidder acknowledges and agrees that the contract is and shall be governed and construed by the laws of the State of Texas and that venue shall lie exclusively in a court of competent jurisdiction in Galveston County, Texas.

46. MERGERS, ACQUISITIONS

The Bidder shall be required to notify the County of any potential for merger or acquisition of which there is knowledge at the time that a bid is submitted.

If subsequent to the award of any contract resulting from this Invitation to Bid the Bidder shall merge or be acquired by another firm, the following documents must be submitted to the County:

A. Corporate resolutions prepared by the awarded Bidder and the new entity ratifying acceptance of the original contract, terms, conditions and prices;
B. New entity's Federal Identification Number (FEIN);
C. New entity's proposed operating plans;
D. New entity's proof of registration in SAM for contracts involving Federal funds;
E. New entity's certification regarding debarment;

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F. New entity's certification regarding lobbying; and
G. W-9 Form for new entity.

Moreover, Bidder is required to provide the County with notice of any anticipated merger or acquisition as soon as Bidder has actual knowledge of the anticipated merger or acquisition. The New Bidder's proposed plan of operation must be submitted prior to merger to allow time for submission of such plan to the Commissioners Court for its approval.

47. DELAYS

The County reserves the right to delay the scheduled commencement date of the contract if it is to the advantage of the County. There shall be no additional costs attributed to these delays should any occur. Bidder agrees it will make no claims for damages, for damages for lost revenues, for damages caused by breach of contract with third parties, or any other claim by Bidder attributed to these delays, should any occur. In addition, Bidder agrees that any contract it enters into with any third party in anticipation of the commencement of the contract will contain a statement that the third party will similarly make no claim for damages based on delay of the scheduled commencement date of the contract.

48. ACCURACY OF DATA

Information and data provided through this Invitation to Bid are believed to be reasonably accurate.

49. SUBCONTRACTING/ASSIGNMENT

Bidder shall not assign, sell, or otherwise transfer its contract in whole or in part without prior written permission of the County acting by and through its Commissioners' Court. Such consent, if granted, shall not relieve the Bidder of any of its responsibilities under this contract.

50. INDEPENDENT CONTRACTOR

Bidder expressly acknowledges that it is an independent contractor. Nothing in this agreement is intended nor shall be construed to create an agency relationship, an employer/employee relationship, a joint venture relationship, or any other relationship allowing County to exercise control or direction over the manner or method by which Bidder or its subcontractors perform in providing the requirements stated in the Invitation to Bid.

51. MONITORING PERFORMANCE

The County shall have the unfettered right to monitor and audit the Bidder's work in every respect. In this regard, the Bidder shall provide its full cooperation and insure the cooperation of its employees, agents, assigns, and subcontractors. Further, the Bidder shall make available for inspection and/or copying when requested, original data, records, and accounts relating to the Bidder's work and performance under this contract. In the event any such material is not held by the Bidder in its original form, a true copy shall be provided.

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52. SUBJECT TO APPROPRIATION OF FUNDS

State law prohibits the obligation and expenditure of public funds beyond the fiscal year for which a budget has been approved by the Commissioners' Court. Galveston County anticipates this to be an integral part of future budgets to be approved during the periods of this contract, except for unanticipated needs or events which may prevent such payments against this contract. However, Galveston County cannot guarantee the availability of funds, and enters into this contract only to the extent such funds are made available through appropriation (allocation) by the Commissioners' Court. This contract shall not be construed as creating any debt on behalf of the County of Galveston in violation of TEX. CONST. art. XI, § 7, and it is understood that all obligations of Galveston County are subject to the availability of funds.

53. CONTRACTS SUBJECT TO GRANT FUNDING

Notwithstanding the foregoing, if the contract to be awarded by this procurement is funded with Federal or State grant funds, the bidder acknowledges that the obligations of the County under the contract are contingent upon the continued availability of grant funding to meet the County's obligations. If the grant(s) to the County is reduced, de-obligated, or otherwise discontinued or terminated, Contractor agrees that the County may immediately terminate the contract without penalty or any liability whatsoever on the part of the County, the State, or the Federal awarding agency.

54. PROCUREMENT ETHICS

Galveston County is committed to the highest ethical standards. Therefore, it is a serious breach of the public trust to subvert the public purchasing process by directing purchases to certain favored vendors, or to tamper with the competitive bidding process, whether it's done for kickbacks, friendship or any other reason. Since misuse of the purchasing power of a local government carries criminal penalties, and many such misuses are from a lack of clear guidelines about what constitutes an abuse of office, the Code of Ethics outlined below must be strictly followed.

Galveston County also requires ethical conduct from those who do business with the County.

CODE OF ETHICS – Statement of Purchasing Policy:

Public employment is a public trust. It is the policy of Galveston County to promote and balance the objective of protecting the County's integrity and the objective of facilitating the recruitment and retention of personnel needed by Galveston County. Such policy is implemented by prescribing essential standards of ethical conduct without creating unnecessary obstacles to entering public office.

Public employees must discharge their duties impartially so as to assure fair competitive access to governmental procurement by responsible contractors. Moreover, they should conduct themselves in such a manner as to foster public confidence in the integrity of the Galveston County procurement organization.

To achieve the purpose of this Article, it is essential that those doing business with Galveston County also observe the ethical standards prescribed herein.

General Ethical Standards:

It shall be a breach of ethics to attempt to realize personal gain through public employment with Galveston County by any conduct inconsistent with the proper discharge of the employee's duties.

It shall be a breach of ethics to attempt to influence any public employee of Galveston County to breach the standards of ethical conduct set forth in this code.

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It shall be a breach of ethics for any employee of Galveston County to participate directly or indirectly in a procurement when the employee knows that:

- The employee or any member of the employee's family, has a financial interest pertaining to the procurement;
- A business or organization in which the employee or any member of the employee's family, has a financial interest pertaining to the procurement; or
- Any other person, business, or organization with which the employee or any member of the employee's family is negotiating or has an arrangement concerning prospective employment is involved in the procurement.

Gratuities:
It shall be a breach of ethics for any person to offer, give, or agree to give any employee or former employee of Galveston County, or for any employee or former employee of Galveston County to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or bid pending before this government.

Kickbacks:
It shall be a breach of ethics for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor for any contract for Galveston County, or to any person associated therewith, as an inducement for the award of a contract, subcontract or order.

Contract Clause:
The prohibition against gratuities and kickbacks prescribed above shall be conspicuously set forth in every contract and solicitation by Galveston County.

Confidential Information:
It shall be a breach of ethics for any employee or former employee of Galveston County to knowingly use confidential information for actual or anticipated personal gain, or for the actual or anticipated gain of any other person.

Prohibition against Contingent Fees:
It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a Galveston County contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies for the purpose of securing business. Failure to abide by this section constitutes a breach of ethical standards.

Representation:
Bidder represents and warrants, by signing and submitting its bid, that it has not retained anyone in violation of this section prohibiting contingent fees.

Contract Clause:
The representation prescribed above shall be conspicuously set forth in every contract and solicitation thereof.

55. NON-COLLUSION AFFIDAVIT

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Bidder certifies, by signing and submitting a bid , that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the contractor has not directly or indirectly induced or solicited another contractor to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any contractor or anyone else to put in a sham bid or that anyone shall refrain from bidding; that the contractor has not in any manner, directly or indirectly, sought by agreement, communications, or conference with anyone to fix the bid price of the contractor of any other bidder, or to fix any overhead, profit or cost element of the bid price, or that of any other contractor, or to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the contractor has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any cooperation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

A blank Non-Collusion Affidavit is included with this Bid packet. Bidder must enclose a truthful and fully executed original Non-Collusion Affidavit with the submission of its bid. This is a mandatory requirement of this Invitation to Bid. Failure to include the truthfully and fully executed Non-Collusion Affidavit in the submission of its Bid shall be considered non-compliance with the requirements of this Invitation to Bid by the Bidder and grounds for the rejection of Bidder's submission.

No negotiations, decisions, or actions shall be initiated by any company as a result of any verbal discussion with any County employee prior to the opening of responses to this Invitation to Bid.

No officer or employee of the County of Galveston, and no other public or elected official, or employee, who may exercise any function or responsibilities in the review or approval of this undertaking shall have any personal or financial interest, direct or indirect, in any contract or negotiation process thereof. The above compliance request will be part of all County of Galveston contracts for this service.

56. CERTIFICATION REGARDING LOBBYING

Bidder certifies that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the bidder, to any person for influencing or attempting to influence a department or employee of an agency, a member of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan or cooperative agreement.

b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence a department or employee of any agency, a member of Congress, a department or employee of congress, or an employee of a member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the bidder shall complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

c. Bidder shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

The truthful and fully completed and executed original of the Certification Regarding Lobbying (included with bid packet) must be included with the submission of Bidder's Bid and is a mandatory requirement of this Invitation to Bid. Bidder's failure to include the fully completed and executed or original of this Certification shall be considered

non-compliant with the requirements of this Invitation to Bid and grounds for the rejection of the Bidder's Bid. Submission of the certification is a prerequisite for making or entering into a contract with Bidder and is imposed by Section 1352, Title 31, United States Code. Further, any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

57. NON-DISCRIMINATION

a. **Equal Employment Opportunity:** Bidder will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, disability, genetic information or veteran status. Bidder will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, national origin, sex, disability, genetic information or veteran status. Such action shall include, but not be limited to, the following: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Bidder agrees to post in conspicuous places, available to employees and applicants for employment, notices of employment.

   Bidder will, in all solicitation or advertisements for employees placed by or on behalf of Bidder, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, sex, disability, genetic information, or veteran status.

   Bidder will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this Agreement 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.

   Bidder will include the provisions herein in every subcontract or purchase order unless exempted.

b. Drug Free Work Place Act: Bidder shall comply with all applicable requirements of the Drug-Free Workplace Act of 1988 (Public Law 100-690, Title V, Subtitle D; 41 U.S.C. § 8102, et seq.) and implementing regulations thereunder.

c. Americans with Disabilities Act: Bidder shall comply with all applicable provisions of the Americans with Disabilities Act of 1990 (Public Law 101-136) and implementing regulations thereunder.

d. OSHA Regulations: Bidder agrees to maintain and to display any applicable materials for its employees in accordance with OSHA regulations.

e. Compliance with Immigration Laws and Use of E-Verify: Bidder agrees to comply with all requirements of the U.S. Immigration Reform and Control Act of 1986, as amended, and any implementing regulations thereto. Bidder further agrees to utilize the E-Verify system through the Department of Homeland Security on its employees. Bidder shall not employ unauthorized aliens, and shall not assign services to be performed to any supplier or subcontractor who are unauthorized aliens. If any personnel performing any services hereunder are discovered to be an unauthorized alien, then Bidder will immediately remove such personnel from performing services hereunder and shall replace such personnel with personnel who are not unauthorized alien(s).

f. State and Federal Law Compliance: Bidder agrees to comply with all other State and Federal laws and regulations applicable to the provision of services under this contract.

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58. RECORD RETENTION AND RIGHT TO AUDIT

Bidder shall keep and maintain all records associated with this contract for a minimum of five (5) years from the close of the contract or as required by Federal or State law or regulation, whichever period is longer. If awarded this contract, Bidder shall allow the County reasonable access to the records in Bidder's possession, custody, or control that the County deems necessary to assist it in auditing the services, costs, and payments provided hereunder. If this contract involves the use of Federal or State funds, then Bidder shall also allow reasonable access to representatives of the Office of Inspector General, the General Accounting Office, the State Auditor's Office, and the other Federal and/or State agencies overseeing the funds that such entities deem necessary to facilitate review by such agencies and Bidder shall maintain fiscal records and supporting documentation for all expenditures in a manner that conforms with OMB Circular A-87 (relocated to 2 C.F.R. Part 225) and this contract.

59. TITLE VI ASSURANCES/TxDOT

The County is subject to Title VI of the Civil Rights Act of 1964 and the Federal and State laws and regulations of the United States Department of Transportation and Texas Department of Transportation (TxDOT). Pursuant to these requirements, the County must have its contractors provide required assurances on compliance with non-discrimination by itself and its subcontractors. The Title VI Assurances within this Subsection are not exhaustive – whenever any Federal, State, or Local requirement requires additional clauses, this list shall not be construed as limiting. Contractor agrees as follows:

(1) **Compliance with Regulations**: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, DOT)
Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are incorporated herein by reference and made a part of this contract.

(2) **Non-discrimination**: The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the basis of race, color, national origin, religion, sex, age, disability or Veteran status in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) **Solicitations for Subcontractors, Including Procurement of Materials and Equipment**: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, national origin, religion, sex, age, disability or Veteran status.

(4) **Information and Reports**: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the Galveston County or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of the Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to Galveston County or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) **Sanctions for Non-compliance**: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, Galveston County shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to:

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(a) withholding of payments to the Contractor under the contract until the Contractor complies, and/or;
(b) cancellation, termination, or suspension of the contract, in whole or in part.

(6) **Incorporation of Provisions**. The Contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as Galveston County or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request Galveston County to enter into such litigation to protect the interests of Galveston County, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

60. SECTION 231.006, FAMILY CODE/DELINQUENT CHILD SUPPORT

Pursuant to Title 5, Section 231.006 of the Texas Family Code, as applicable, Bidder certifies that it, including all of its principals, is/are current in child support payments and that it is eligible to receive payments from State funds under a contract for property, materials, or services. Bidder acknowledges and agrees that if it is awarded this contract, then the ensuing agreement may be terminated and payment withheld if this certification is inaccurate. Finally, by the submission of its bid, the Bidder certifies that it has included the names and social security numbers of each person with at least 25% ownership interest in Bidder within its response to the Invitation to Bid and that all such persons are current in child support payments.

61. ANTITRUST

Pursuant to 15 U.S.C. § 1, et seq., and Texas Business and Commerce Code, Chapter 15, Contractor, by the submission of its bid, certifies that neither Contractor nor any natural person, proprietorship, firm, corporation, partnership, association, or institution represented by Contractor or anyone acting for such natural person, proprietorship, firm, corporation, partnership, association, or institution has violated any Federal or State antitrust laws or communicated the nature of the offer, directly or indirectly, to any competitor or other person engaged in a similar line of business.

62. LABOR STANDARDS

On contracts funded under a federal grant: Bidder acknowledges that the contract to be awarded pursuant to this solicitation is on a grant program funded with Federal funds. Bidder shall comply with the requirements of 29 CFR Part 5 and Part 30 and shall be in conformity with Executive Order 11246, entitled "Equal Employment Opportunity", Copeland, "Anti-Kickback" Act (40 U.S.C. 3145, 29 C.F.R. Part 3), the Davis-Bacon and Related Acts (40 U.S.C. 3141-3148, 29 C.F.R. Parts 1,3, and 5), the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701 et seq.), and all other applicable Federal, State, and local laws and regulations pertaining to labor standards, insofar as those acts apply to the performance of this Agreement. Bidder is also responsible for ensuring that all subcontractors comply with the requirements of 29 CFR Part 5 and Part 30 and shall be in conformity with Executive Order 11246, entitled "Equal Employment Opportunity", Copeland "Anti-Kickback" Act, the Davis-Bacon and Related Acts (29 CFR Parts 1, 3 and 5), the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701 et seq.), and all other applicable Federal, State, and local laws and regulations pertaining to labor standards, insofar as those acts apply to the performance of this Agreement.

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63. PROCUREMENT LAWS

a. Bidder shall comply with all applicable local, State, and Federal procurement laws, rules, and regulations.

b. If this contract is made pursuant to a federal award, then Contractor acknowledges that the contract is subject, without limitation, to applicable provisions within 2 C.F.R. Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. Contractor shall comply with applicable provisions within 2 C.F.R., Sections 200.319 through 200.326, including but not limited to the following:

1.) **Equal Employment Opportunity**, 41 C.F.R. Part 60-1.4(b) (applicable to federally assisted construction contracts).

(a) During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national original, disability, or veteran status. 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, national original, disability or veteran status. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national original, disability, or veteran status.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and by rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to contractor's books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The

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contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

2.) **Small and minority business, women's business enterprises, and labor surplus area firms (2 C.F.R. § 200.321).** The County is required to take affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. This includes requiring the prime contractor, if subcontracts are to be let in the performance of this contract, to itself take affirmative steps in letting the subcontract. Accordingly, if subcontracts are to be let in the performance of this contract, the contractor must take affirmative steps in the letting of the subcontract(s), which must include:

(a) placing qualified small and minority businesses and women's business enterprises on solicitation lists;
(b) assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
(c) dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises; and
(d) using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

In accordance with FEMA procurement guidance:

A small business is a business that is independently owned and operated, not dominant in the field of operation in which it is bidding on Galveston County contracts, and qualified as a small business under the Small Business Administration criteria and size standards at 13 C.F.R. Part 121.

A women's business enterprise is a business enterprise that is: (a) at least 51 percent owned by one or more women or, in the case of a publicly owned business, at least 51 percent of the stock is owned by one or more women; and (b) whose management and daily operations are controlled by one or more women.

A minority business is a business that is (a) at least 51 percent owned by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of the stock is owned by one or more minority group members; and (b) whose management and daily operations are controlled by one or more minority group members.

3.) **Davis-Bacon Act as amended (40 U.S.C. 3141-3148).** When required by Federal program legislation, all prime construction contracts in excess of $2,000 must include a provision for compliance with the Davis-Bacon Act as supplemented by the Department of Labor regulations (29 C.F.R. Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractor must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity (the County) must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be condition upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contract must also include a provision for compliance with the Copeland Anti-Kickback Act (40 U.S.C. § 3145) as supplemented by the Department of Labor regulations (29 C.F.R. Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States").

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4.) **Compliance with the Copeland "Anti-Kickback" Act.** Contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which the person is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. "Whoever, by force, intimidation, or threat of procuring dismissal from employment, or by any other manner whatsoever induces any person employed in the construction, prosecution, completion or repair of any public building, public work, or building or work financed in whole or in part by loans or grants from the United States, to give up any part of the compensation to which he is entitled under his contract of employment, shall be fined under this title [Title 18, U.S.C.] or imprisoned not more than five years, or both." 18 U.S.C. § 874.

(a) Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. Part 3 as may be applicable, which are incorporated by reference into this contract.

(b) The contractor or subcontractor shall insert in any subcontracts the clause above and such other clauses as the Federal awarding agency 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 of these contract clauses.

(c) Breach. A breach of the contract clause above may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.

5.) **Contract Work Hours and Safety Standards Act.**

(a) Where applicable, all contracts awarded by the County in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704, as supplemented by the Department of Labor regulations at 29 C.F.R. Part 5. Under 40 U.S.C. 3702 of the Contract Work Hours and Safety Standards Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.S. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchase of supplies or material or articles ordinarily available on the open market, or contractors for transportation or transmission of intelligence.

(b) Compliance with the Contract Work Hours and Safety Standards Act.

(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 paragraph (1) of this subsection 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 paragraph (1) of this subsection, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard work week of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this subsection.

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(3) Withholding for unpaid wages and liquidated damages. The awarding Federal agency, State agency, or the County 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 or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this subsection.

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

6.) **Rights to Inventions Made Under a Contractor Agreement.**

(a) If the Federal award meets the definition of "funding agreement" under 37 C.F.R. § 401.2(a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under the "funding agreement," the recipient or subrecipient must comply with the requirements of 37 C.F.R. Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(b) Stafford Act Disaster Grants. This requirement does not apply to Public Assistance, Hazard Mitigation Grant Program, Crisis Counseling Assistance and Training Grant program, Disaster Case Management Grant Program, and Federal Assistance to Individuals and Households – Other Needs Assistance Grant Program, as FEMA awards under these programs do not meet the definition of "funding agreement."

(c) The regulations and 37 C.F.R. § 401.2(a) currently defines "funding agreement" as any contract, grant, or cooperative agreement entered into between any Federal agency, other than the Tennessee Valley Authority, and any contractor for the performance of experimental, developmental, or research work funded in whole or in part by the Federal government. This term also includes any assignment, substitution of parties, or subcontract of any type entered into for the performance of experimental, developmental, or research work under a funding agreement as defined in the first sentence of this paragraph.

7.) **Clean Air Act (42 U.S.C. §§ 7401 – 7671q) and the Federal Water Pollution Control Act 933 U.S.C. §§ 1251-1387), as amended.**

(a) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401, et seq., and agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Contract Act, as amended, 33 U.S. C. § 1251, et seq.

(b) The contractor agrees to report each violation of the Clean Air Act and/or the Federal Water Pollution Control Act to the Federal awarding agency, the State agency administering the grant, and the Regional Office of the Environmental Protection Agency (EPA) and understands and agrees that the Federal awarding agency, the State agency, and the EPA will, in turn, report each violation as required to assure notification to Galveston County, the Federal Emergency Management Agency, and the appropriate EPA Regional Office.

GENERAL PROVISIONS – INVITATION TO BID
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
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8.) **Debarment and Suspension (Executive Orders 12549 and12689).** A contract award must not be made to parties listed on the government-wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. Part 180 that implement Executive Orders 12549 and 12689. The Contractor is required to verify that none of the contractor, its principals (defined at 2C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. §180.940) or disqualified (defined at 2 C.F.R. § 180.935).

Contractor must comply with 2 C.F.R. Part 180, Subpart C and 2 C.F.R. Part 3000, Subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. Bidder agrees to comply with the requirements of 2 C.F.R. Part 180, Subpart C, and 2 C.F.R. Part 3000, Subpart C, while this offer is valid and through the period of any contract that may arise from this offer. The bidder further agrees to include a provision requiring such compliance in its lower tier covered transactions.

9.) **Procurement of Recovered Materials.**

(a.) A non-Federal entity that is a State agency or agency of a political subdivision of the State and its contractors must comply with Section 6002 of the Solid Waste Disposal Act, Public Law No. 89-272 (1965) (codified as amended by the Resource Conservation and Recovery Act at 42 U.S.C. § 6962).

(b.) In the performance of this contract, the contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired—

(1) Competitively within a timeframe providing for compliance with the contract performance schedule;

(2) Meeting contract performance requirements; or

(3) At a reasonable price.

(c) Information about this requirement is available at EPA's Comprehensive Procurement Guidelines website, http://www.epa.gov/cpg/. The list of EPA-designated items is available at https://www.epa.gov/cpg/products.htm.

In the event of any discrepancy between the provisions in this Section 61 of General Provisions and provisions on the same subject elsewhere within this procurement, the most stringent shall control.

64. ENTIRETY OF AGREEMENT AND MODIFICATION

This contract contains the entire agreement between the parties. Any prior agreement, promise, negotiation or representation not expressly set forth in this contract has no force or effect. Any subsequent modification to this contract must be in writing, signed by both parties.

An official representative, employee, or agent of the County does not have the authority to modify or amend this contract except pursuant to specific authority to do so granted by the Galveston County Commissioners' Court.

65. NOTICE

All notices or other communications required or permitted under this contract shall be in writing and shall be deemed to have been duly given if delivered personally in hand, transmitted by facsimile, or mailed certified mail, return receipt requested with proper postage affixed and addressed to the appropriate party at the following address or at such other address as may have been previously given in writing to the parties (Bidder shall provide its notice information with its Bid submission). If mailed, the notice shall be deemed delivered when actually received, or if

GENERAL PROVISIONS – INVITATION TO BID
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earlier, on the third day following deposit in a United States Postal Service post office or receptacle, duly certified, return receipt requested, with proper postage affixed. If delivered in person, notice shall be deemed delivered when receipted for by, or actually received by, the receiving Party. If transmitted by facsimile, notice shall be deemed delivered when receipt of such transmission is acknowledged.

To the County at:

Hon. Mark Henry,
County Judge of Galveston County
722 Moody (21st Street), Second (2nd) Floor
Galveston, Texas 77550
Fax: (409) 765-2653

With copies to:

Rufus Crowder, CPPO CPPB,
Galveston County Purchasing Agent
722 Moody (21st Street), Fifth (5th) Floor
Galveston, Texas 77550
Fax: (409) 621-7997

Robert Boemer, Director,
Galveston County Legal Department
722 Moody (21st Street), Fifth (5th) Floor
Galveston, Texas 77550
Fax: (409) 770-5560

To the Contractor at:

(Bidder to provide its contact name, address, and facsimile number for notice under the contract.)

66. USE OF DHS SEAL, LOGO, AND FLAGS PROHIBITED WITHOUT PRIOR APROVAL

Contractor must obtain permission from the U.S. Department of Homeland Security financial assistance office (DHS FAO) **prior** to using DHS seals(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials, including use of the United States Coast Guard seal, logo, crests or reproductions of flags or likenesses of Coast Guard Officials.

67. FEDERAL GOVERNMENT NOT A PARTY

Contractor acknowledges that the Federal Government is not a party to the contract and is not subject to any obligations or liabilities to Galveston County, contractor, or any other party pertaining to any matter resulting from the contract.

68. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

In contracts funded through Federal grants, Contractor acknowledges that 31 U.S.C. Chapter 38, Administrative Remedies for False Claims and Statements (31 U.S.C. § 3801, et seq.) and the implementing regulations thereunder, 49 C.F.R. Part 79, apply to Contractors actions pertaining to the contract.

GENERAL PROVISIONS – INVITATION TO BID
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69. LEAD AND ASBESTOS

If this invitation to bid involves remediation, demolition, reconstruction, rehabilitation, repair, or construction, or other applicable activities, the Contractor shall be responsible for performing investigations of lead and asbestos containing materials, and any required lead and asbestos abatement in compliance with Federal, State, and local laws, rules, regulations, ordinances and orders, relating to lead abatement and asbestos abatement as applicable, including but not limited to the Texas Asbestos Health Protection Act, codified as Chapter 1954 of the Occupations Code; the Texas Asbestos Health Protection Regulations, located at Title 25, Part 1, Chapter 295, Subchapter C of the Texas Administrative Code; Chapter 1955 of the Texas Occupations Code (lead-based paint abatement); the Texas Environmental Lead Reduction regulations, located at Title 25, Part 1, Chapter 295, Subchapter I of the Texas Administrative Code; the federal National Emission Standards for Asbestos regulations, located at Title 40, Part 61, Subpart M of the Code of Federal Regulations, and the National Emission Standards for Hazardous Air Pollutants. Contractor shall perform such inspections, encapsulation, remediation or other actions as required by federal, State, or local requirements in accordance with the federal Environmental Protection Agency (EPA), Texas Department of State Health Services (TXDSHS), and Texas Commission on Environmental Quality (TCEQ) requirements.

70. ACKNOWLEDGMENT OF GOVERNMENT RECORD

Bidder acknowledges that its submission in this Invitation to Bid, including its response, bid, certifications, affidavits, Vendor Forms (i.e., PEID, W-9, CIQ, etc.) constitutes government records under Chapter 37 of the Texas Penal Code.

71. COMPLIANCE WITH GALVESTON COUNTY PURCHASING POLICIES AND PROCEDURES

Bidder acknowledges, by its submission in this Invitation to Bid, that it shall comply with the Galveston County Purchasing Policies & Procedures Manual approved by Order of the Galveston County Commissioners Court on March 7, 2018.

End of General Provisions Section

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ITB #B191024
OPEN: 12/18/2018
TIME: 2:00 P.M.

SPECIAL PROVISIONS
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
GALVESTON COUNTY, TEXAS

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The Special Provisions and the General Provisions of this Invitation to Bid and the Exhibits attached hereto are made a part of this agreement between the Parties. In the event of a conflict between the General Provisions and the Special Provisions, the terms of the Special Provisions shall control.

A. PURPOSE

This project entails clearing and grubbing for a new City right of way for the purpose of constructing two new 24 feet wide concrete roads approximately 2,000 feet long with sidewalk alongside. A linear detention ditch will be expanded to take the new runoff for the roads and the dirt shall be spread on release valve, fire hydrant installation, and turn establishment. This project entails coordination with TXDOT, Pipelines, CenterPoint, County of Galveston and City of Kemah

B. DEFINITIONS (As mentioned in FAR Subpart 52.2—Text of Provisions and Clauses)

52.202-1 Definitions.

Definitions (Nov 2013)

When a solicitation provision or contract clause uses a word or term that is defined in the Federal Acquisition Regulation (FAR), the word or term has the same meaning as the definition in FAR 2.101 in effect at the time the solicitation was issued, unless—

(a) The solicitation, or amended solicitation, provides a different definition;
(b) The contracting parties agree to a different definition;
(c) The part, subpart, or section of the FAR where the provision or clause is prescribed provides a different meaning; or
(d) The word or term is defined in FAR Part 31, for use in the cost principles and procedures

C. BID/PROPOSAL SURETY

A 5% bid bond ***is a requirement of this solicitation request***.

D. PERFORMANCE AND PAYMENT BONDS

Performance and Payment Bonds ***are a requirement of this solicitation***.

E. DAVIS-BACON WAGE RATES

Attention is called to the fact that not less than, the federally determined prevailing (Davis-Bacon and Related Acts) wage rate, as issued by the Office of Rural Community Affairs and contained in the 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.

F. PROCUREMENT TIMELINE

A timeline for this ITB and initial process is included below. Galveston County reserves the right to change these dates and will notify Bidders of any changes:

Advertise ITB (first date of publication)	Tuesday, November 27, 2018
Advertise ITB (second date of publication)	Tuesday, December 4, 2018
Pre-Proposal Conference	Wednesday, December 5, 2018 at 10:00 am
Deadline for Questions & Inquiries	Friday, December 7, 2018 by 5:00 p.m.
Proposals due from public/ITB Opening	Tuesday, December 18, 2018 at 2:00 p.m.

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G. SUBMISSION INSTRUCTIONS

One (1) unbound original and five (5) copies must be submitted no later than **2:00 P.M. CST,** on **December 18, 2018** to:

Rufus G. Crowder, CPPO CPPB
Purchasing Agent
County of Galveston
722 Moody Avenue (21st Street), Fifth (5th) Floor
Galveston, TX 77550

The time stamp clock located in the Purchasing Agent's office shall serve as the official time keeping piece for this solicitation process. Any proposals received after **2:00 P.M. CST** on the specified date will be returned unopened.

H. PRE-BID CONFERENCE

A non-mandatory pre-bid conference will be held on Wednesday, December 5, 2018 at 10:00 a.m. at the Galveston County Courthouse, Purchasing Department, 722 Moody (21st Street), Fifth (5th) Floor, Galveston, Texas 77550.

I. PERSONNEL TO CONTACT

Bidders desiring an explanation or interpretation relative to this solicitation must request it in writing. Oral explanations or instructions will not be binding. Any information given to a Bidder, which in the opinion of the County affects all responders or would be prejudicial to other Bidders if not communicated, shall be furnished to all Bidders as an addendum to the solicitation. Bidders **must** direct all inquiries to the following:

Rufus G. Crowder, CPPO CPPB
Purchasing Agent
722 21st Street (Moody)
Galveston, Texas 77550
e-mail: purchasing.bids@co.galveston.tx.us

Bidders must e-mail their requests (with the subject line "**Bel Road Extension and Linear Detention Ditch – ITB # B191024– Questions**") for additional information and/or clarification to the address listed above. The request must include the Bidder's name and the ITB number and title. ***Any request for additional information or clarification must be received in writing no later than seven (7) calendar days prior to the Proposal due date.*** Late requests or those not delivered to the proper address may not receive a reply. Bidders shall not attempt to contact the County by any other means. The Purchasing Agent's Office shall post the answers to the County website from the procurement web page and via addendum.

The County will issue responses to inquiries and any other corrections or amendments, it deems necessary, in the form of a written addendum, issued prior to the Proposal Submission Date. The County, at its sole discretion, may not issue a response to a RFI submittal. Bidders should not rely on any oral or written representations, statements, or explanations, other than those made in this ITB or in any written addendum to this ITB. Where there appears to be conflict between the ITB and any issued addenda, the last addendum issued will prevail. Addenda will be posted and made available on the County's procurement web page. It is the Bidder's sole responsibility to ensure receipt of all addenda prior to

submitting its Proposal. All Bidders should check the County's procurement web page for all addenda prior to submitting a response. The County's procurement web page is located at **www.galvestoncountytx.gov/pu/Pages/default.aspx**, and current solicitations are at **www.galvestoncountytx.gov/pu/Pages/OpenSolicitations.aspx**.

The Bidder must acknowledge the receipt of all addenda on the forms provided. In the event a Bidder fails to acknowledge receipt of such addenda, the County may, at its sole discretion, determines that such failure to acknowledge any or all addenda does not materially affect the Proposal and waive the acknowledgement of one or more addenda.

Bidders who submit inquiries *after* the deadline date for receipt of questions indicated on the Procurement Timeline, risk that its response in the procurement will not be responsive or competitive because the County is not able to respond before the Proposal receipt date or in sufficient time for the Bidder to prepare a responsive or competitive submittal.

All questions and responses as posted on the County website pertaining to this ITB are considered an addendum to, and part of, this ITB. Each Bidder shall be responsible to monitor the County website for new or revised ITB information. The County shall not be bound by any verbal information nor shall it be bound by any written information that is not either contained within the ITB or formally issued as an addendum by the Purchasing Agent's Office.

J. PROGRAM ADMINISTRATION & CONTRACT MANAGEMENT

The Program Administrator/Contract Manager that will manage the work to be performed under the resultant contract for the purpose of this ITB is:

Michael Shannon
Galveston County Engineer
722 21ST Street Moody, 1st Floor
Galveston, TX 77550
Office: (409) 770-5453
e-mail: michael.shannon@co.galveston.tx.us

K. TYPE OF CONTRACT

The resultant contract consists of the following documents: Bid, General Provisions, Special Provisions, General Terms and Conditions (including specifications, drawings, and addenda), Bidder's Proposal, Proposal Sheets, contract award, and any other documents referenced herein or attached hereto for the work. Collectively these documents may also be referred to as the Plans and Specifications.

In an effort to satisfy cost reasonableness responsibilities at the time of each extension period, the County of Galveston reserves the right to obtain additional quotes and current pricing information from the successful contractor and other contractors to perform the work as stated per the specification listed herein and in the resultant. The solicited results may be used by the County to determine if the contract extensions will be considered or other service options be utilized.

The initial term of the contract shall be for one (1) year or until conclusion of the project, unless specified differently within the resultant contract.

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L. COLLATERAL CONTRACT

The County reserves the right to provide by separate contract or otherwise, in such manner as not to delay its programs or damage said Contractor, all labor and material essential to the completion of the work that is not included in this contract.

Award prices include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. Whenever the Awardee is required or desires to use any design, device, material or process covered by letters of patent or copyright, the Awardee shall indemnify and save harmless the County, its officers, agents and employees from any and all claims for infringement by reason of the use of any such patented design, tool, material, equipment, or process, to be performed under the contract, and shall indemnify the County its officers, agents, and employees for any costs, expenses and damages which may be incurred by reason of any infringement at any time during the prosecution or after the completion of the work.

M. AWARD PRICE

Award prices include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work. Whenever the Awardee is required or desires to use any design, device, material or process covered by letters of patent or copyright, the Awardee shall indemnify and save harmless the County, its officers, agents and employees from any and all claims for infringement by reason of the use of any such patented design, tool, material, equipment, or process, to be performed under the contract, and shall indemnify the County its officers, agents, and employees for any costs, expenses and damages which may be incurred by reason of any infringement at any time during the prosecution or after the completion of the work.

N. LABOR

Contractor is encouraged to use local labor, but not at the expense of poor workmanship and higher cost. Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. Contractor agrees to post in a conspicuous place a notice setting forth provisions of this non-discrimination clause.

O. INSURANCE

Bidder must submit, with its response, a current certificate of insurance evidencing coverage in the amounts specified below or greater. In lieu of submitting a certificate of insurance, Respondents may submit a notarized statement from an insurance company authorized to conduct business in the State of Texas guaranteeing that Respondent has such insurance. Provided however, that successful Respondent(s) shall be required to provide a current certificate of insurance to the Galveston County Purchasing Agent's Office before Respondent commences any work hereunder. **Insurance shall be placed with insurers having an A.M. Best's rating of no less than A**. Such insurance must be issued by a casualty company authorized to do business in the State of Texas, and in standard form approved by the Board of Insurance Commissioners of the State of Texas, with coverage provisions insuring the public from loss or damage that may arise to any person or property by reason of services rendered by Contractor.

Galveston County shall be listed as an additional insured on each policy and all certificates of insurance and Contractor shall provide Galveston County with no less than thirty (30) calendar days prior notice of any changes to the policy during the contractual period. Certificates of Insurance, fully executed by a licensed representative of the insurance company written or countersigned by an authorized Texas state agency, shall be filed with the County Purchasing Agent within ten (10) calendar days of the execution of this Agreement as written proof of such insurance and further provided that Contractor shall not commence work under this

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Agreement until Contractor has obtained all insurance required herein, provided written proof as required herein, and received written notice to proceed issued from the County Purchasing Agent. **Failure to provide such evidence of insurance within the ten (10) calendar day period shall constitute an event of default.**

Workers' Compensation Insurance. Respondent shall carry in full force Workers' Compensation Insurance Policy(ies), if there is more than one employee, for all its employees, including but not limited to full time, part time, and emergency employees employed by the Contractor.

Commercial General Liability. Respondent shall carry in full force commercial general liability insurance with a limit of not less than $1,000,000 each occurrence and $2,000,000 in the aggregate. The Policy shall, minimally, cover liability for bodily injury, personal injury, and property damage.

Business Automobile Liability. Respondent shall carry in full force business automobile liability coverage with a combined bodily injury/property damage limit of not less than $1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.

Professional Liability. Respondent shall carry in full force professional liability insurance with limits of not less than $1,000,000.00.

Subrogation Waiver. Contractor and Contractor's insurance carrier shall waive any and all rights to subrogation against Galveston County in regard to any suit or claim arising out of personal injury or property damage resulting from Contractor's performance under this Agreement.

P. EXCEPTIONS

Any exceptions to proposal conditions should be listed on a separated sheet of paper, attached to proposal submittals and submitted with proposal at the specified date and time of proposal opening.

End of Special Provisions Section

General Decision Number: TX180056 01/05/2018 TX56

Superseded General Decision Number: TX20170056

State: Texas

Construction Type: Highway

Counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Montgomery, Orange, San Jacinto and Waller Counties in Texas.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2018

* SUTX2011-013 08/10/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER (Paving and Structures)	$ 12.98	
ELECTRICIAN	$ 27.11	
FORM BUILDER/FORM SETTER		
Paving & Curb	$ 12.34	
Structures	$ 12.23	
LABORER		
Asphalt Raker	$ 12.36	
Flagger	$ 10.33	
Laborer, Common	$ 11.02	
Laborer, Utility	$ 11.73	
Pipelayer	$ 12.12	
Work Zone Barricade		

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     Servicer....................$ 11.67

PAINTER (Structures).............$ 18.62

POWER EQUIPMENT OPERATOR:
     Asphalt Distributor.........$ 14.06
     Asphalt Paving Machine......$ 14.32
     Broom or Sweeper............$ 12.68
     Concrete Pavement
     Finishing Machine...........$ 13.07
     Concrete Paving, Curing,
     Float, Texturing Machine....$ 11.71
     Concrete Saw................$ 13.99
     Crane, Hydraulic 80 Tons
     or less.....................$ 13.86
     Crane, Lattice boom 80
     tons or less................$ 14.97
     Crane, Lattice boom over
     80 Tons.....................$ 15.80
     Crawler Tractor.............$ 13.68
     Excavator, 50,000 pounds
     or less.....................$ 12.71
     Excavator, Over 50,000
     pounds......................$ 14.53
     Foundation Drill, Crawler
     Mounted.....................$ 17.43
     Foundation Drill, Truck
     Mounted.....................$ 15.89
     Front End Loader 3 CY or
     Less........................$ 13.32
     Front End Loader, Over 3 CY.$ 13.17
     Loader/Backhoe..............$ 14.29
     Mechanic....................$ 16.96
     Milling Machine.............$ 13.53
     Motor Grader, Fine Grade....$ 15.69
     Motor Grader, Rough.........$ 14.23
     Off Road Hauler.............$ 14.60
     Pavement Marking Machine....$ 11.18
     Piledriver..................$ 14.95
     Roller, Asphalt.............$ 11.95
     Roller, Other...............$ 11.57
     Scraper.....................$ 13.47
     Spreader Box................$ 13.58

Servicer........................$ 13.97

Steel Worker
     Reinforcing Steel...........$ 15.15
     Structural Steel Welder.....$ 12.85
     Structural Steel............$ 14.39

TRUCK DRIVER
     Low Boy Float...............$ 16.03
     Single Axle.................$ 11.46
     Single or Tandem Axle Dump..$ 11.48
     Tandem Axle Tractor w/Semi
     Trailer.....................$ 12.27
-------------------------------------------------------------------

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that

classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

ITB #B191024
OPEN: 12/18/2018
TIME 2:00 P.M.

BID FORM
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
COUNTY OF GALVESTON, TEXAS

By signing here, the firm does hereby attest that it has fully read the instructions, conditions and general and special provisions and understands them.

THE COMPANY OF: _____

ADDRESS: _____

_____

FEIN (TAX ID): _____

The following shall be returned with your bid. Failure to do so may be ample cause for rejection of bid as non-responsive. It is the responsibility of the Bidder to ensure that bidder has received all addenda.

Items:	**Confirmed (X):**
1. References (if required)	_____
2. Addenda, if any	**#1**_____ **#2**____ **#3**____ **#4** ___
3. One (1) original and five (5) copies of submittal	_____
4. Bid Form	_____
5. Vendor Qualification Packet	_____
6. Debarment Certification Form	_____
7. Non-Collusion Affidavit	_____
8. Payment Terms:	_____**net 30** _____**Other**

Person to contact regarding this bid: _____

Title: _____ Phone: _____ Fax: _____

E-mail address: _____

Name of person authorized to bind the Firm: _____

Signature: _____ Date: _____

Title: _____ Phone: _____ Fax: _____

E-mail address: _____

BID FORM
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
GALVESTON COUNTY, TEXAS

Bidder shall use this form to provide the information for notice.

1. Contact information for notice:

   Name:_____
   Address:_____
   _____
   Telephone Number:_____ Facsimile number:_____

2. If a copy of notice is requested, please complete below:

   Name:_____
   Address:_____
   _____
   Telephone Number:_____ Facsimile number:_____

3. If second or more copies are requested for notice, please supplement this form and clearly mark the supplement as "Supplementary Notice Information."

   Bidder to submit reference information. Bidder shall use this form to provide minimum required reference information. If Bidder wishes to provide more than the minimum, Bidder should supplement this form and should clearly mark the supplement as "Supplementary Reference Information."

1. References who can attest to the Bidder's capability to carry out the requirements set forth in this bid:

   Business Name of Organization:_____
   Name of Person:_____
   Title of Individual within Organization, if applicable_____
   Business address:_____
   _____
   Telephone number:_____ Facsimile number:_____

   Business Name of Organization:_____
   Name of Person:_____
   Title of Individual within Organization, if applicable_____
   Business address:_____
   _____
   Telephone number:_____ Facsimile number:_____

   Business Name of Organization:_____
   Name of Person:_____
   Title of Individual within Organization, if applicable_____
   Business address:_____
   _____
   Telephone number:_____ Facsimile number:_____

BID FORM
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
GALVESTON COUNTY, TEXAS

References of major supplier of Bidder who can speak to the financial capability of the Bidder to carry out the requirements set forth in this bid:

1. Business Name of Supplier_____
   Name of Person:_____
   Title of Individual within business:_____
   Business address:_____
   _____
   Telephone number:_____ Facsimile number:_____

2. Business Name of Supplier_____
   Name of Person:_____
   Title of Individual within business:_____
   Business address:_____
   _____
   Telephone number:_____ Facsimile number:_____

3. Business Name of Supplier_____
   Name of Person:_____
   Title of Individual within business:_____
   Business address:_____
   _____
   Telephone number:_____ Facsimile number:_____

The remainder of this page intentionally left blank

State of Texas §
§
County of Galveston §

NON-COLLUSION AFFIDAVIT

Before me, the undersigned notary, on this day personally appeared _____ (Affiant), whom being first duly sworn, deposes and certifies that:

- Affiant is the _____ of _____, that
  (Individual, Partner, Corporate Officer) (Name of Proposer)
  submitted the attached Bid/Proposal in **ITB No. B191024 Bel Road Extension and Linear Detention Ditch**

- Affiant is a duly authorized representative of Proposer and is authorized to make this Non-Collusion Affidavit;

- The attached Proposal/Bid is genuine and is not a collusive or sham Proposal/Bid;

- The attached Proposal/Bid has been independently arrived at without collusion with any other bidder, proposer, person, firm, competitor, or potential competitor;

- Bidder/Proposer has not colluded, conspired, connived or agreed, directly or indirectly, with any other bidder, proposer, person, firm, competitor, or potential competitor, to submit a collusive or sham bid or that such other bidder, proposer, person, firm, competitor, or potential competitor shall refrain from bidding/proposing;

- Bidder/Proposer has not in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, proposer, person, firm, competitor, or potential competitor to fix the price or prices in the attached Bid/Proposal or of the bid/proposal any other bidder/proposer;

- Bidder/Proposer has not in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, proposer, person, firm, competitor, or potential competitor to fix the overhead, profit or cost element of the Bid/Proposal price or prices of any other bidder/proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against Galveston County or any person interested in the proposed contract;

- Affiant has not in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, proposer, person, firm, competitor, or potential competitor, paid or agreed to pay any other bidder, proposer, person, firm, competitor, or potential competitor any money or anything of value in return for assistance in procuring or attempting to procure a contract or in return for establishing the price or prices in the attached Bid/Proposal or the bid/proposal of any other Bidder/Proposer; and

- Affiant certifies that Affiant is fully informed regarding the accuracy of the statements contained herein, and under penalties of perjury, certifies and affirms the truth of the statements herein, such penalties being applicable to the Bidder/Proposer as well as to Affiant signing on its behalf.

_____
Signature of Affiant

SWORN TO and **SUBSCRIBED** before me this _____day of_____, 2018.

_____
Notary Public

My Commission Expires: _____

County of Galveston
Purchasing Department
Vendor Qualification Packet

(rev. 1.4, September 28, 2017)

All interested parties seeking consideration for qualified vendor status with the County of Galveston **should complete and return only the following forms to:**

Galveston County Purchasing Department
722 Moody Avenue, (21st Street), 5th Floor
Galveston, Texas 77550
(409) 770-5371 ***office***
(409) 621-7987 ***fax***

PEID Form: **Person /Entity Information Data**

W -9 Form: Request for Taxpayer Identification Number and Certification
(please note that the included form may not be the latest revised form issued by the Internal Revenue Service. *Please check the IRS website at http://www.irs.govlpublirs-rdflfw9.pdf for the latest revision of this form.)*

CIQ Form: **Conflict of Interest Questionnaire**
(please note that the included form may not be the latest revised form issued by the State of Texas Ethics Commission. *Please check the Texas Ethics Commission website at http://www.ethics.state.tx.us/whatsnew/conflict_forms.htm for the latest revision of this form. Please note that Galveston County Purchasing Agent is not responsible for the filing of this form with the Galveston County Clerk per instructions of the State of Texas Ethics Commission).*

Debarment: **CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS & REQUIREMENT TO REGISTER IN SAM**
Vendors/contractor certifies that neither it, nor any of its Principals, are presently debarred, suspended, proposed for debarment, disqualified, excluded, or in any way declared ineligible for the award of contracts by any Federal agency. Vendor agrees that it shall refund Galveston County for any payments made to Contractor while ineligible. Vendor acknowledges that Contractor's uncured failure to perform under any agreement with the County of Galveston, if such should occur, may result in Contractor being debarred from performing additional work for the County, the respecting State Agency administering the grant funding the contract, if applicable, the State, FEMA or HUD (as applicable), and other Federal and State entities. Further, Vendor has executed the Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters and returned the fully completed and executed original certification with the submission of this Vendor Qualification Packet. ***The truthful and fully completed and executed original of the Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters must be included with the submission of this Vendor Qualification Packet and is a mandatory requirement to become a vendor of Galveston County. Vendor's failure to include the fully completed and executed original of this Certification shall be considered non-compliant with the requirements of this vendor qualification request and grounds for the rejection of vendor's request.*** *Vendor shall immediately notify the County Purchasing Agent if it becomes debarred or suspended, placed on*

the Consolidated List of Debarred Contractors, or in any other way becomes ineligible for award of contract by any Federal agency. This Certification is a material fact relied upon by Galveston County; if it is later determined that the vendor did not comply with 2 C.F.R. Part 180 and 2 C.F.R. Part 3000, in additional to the remedies available to Galveston County and the State agency administering a grant, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment of contractor. If the contract to be awarded pursuant to a Galveston County procurement effort involves the use of Federal funds, then vendor must also be registered in the Federal Contractor Registry through the System for Award Management (SAM) to be eligible for award of contract pursuant to the procurement.

Information regarding the SAM is available at:
http://www.federalcontractorregistry.com/?gclid=CIG1hf2rr8wCFYkCaQoducANZw or at https://www.sam.gov/portal/SAM/#1.

No contract involving the use of Federal funds may be awarded to any vendor unless and until such registration is current and in good standing under SAM. Successful vendors must maintain SAM registration throughout the entire term of any contractual agreement with the County. If a contract involves the use of Federal funds, then vendor must enclose proof of such SAM registration within its response, which is also a mandatory requirement of County procurement policy; failure to enclose such proof shall be considered non-compliant with the requirements of any procurement effort and grounds for the rejection of vendor's response to any procurement efforts (i.e., bid, proposal, or qualifications statement, as applicable).

Certificate(s) of Insurance: **If the person or entity seeking qualified vendor status with the County will be performing work at or on any County owned facility and/or property, Certificate(s) of Insurance are required to be submitted prior to performing any work.**

Insurance requirements are as follows:

Public Liability and Property Damage Insurance:

Successful vendor agrees to keep in full force and effect, a policy of public liability and property damage insurance issued by a casualty company authorized to do business in the State of Texas, and in standard form approved by the Board of Insurance Commissioners of the State of Texas, with coverage provisions insuring the public from any loss or damage that may arise to any person or property by reason of services rendered by vendor. Vendor shall at its own expense be required to carry the following minimum insurance coverages:

1. For damages arising out of bodily injury to or death of one person in anyone occurrence - one hundred thousand and no/100 dollars ($100,000.00);
2. For damages arising out of bodily injury to or death of two or more persons in anyone occurrence - three hundred thousand and no/100 dollars ($300,000.00); and
3. For injury to or destruction of property in anyone occurrence - one hundred thousand and no/100 dollars ($100,000.00).

This insurance shall be either on an occurrence basis or on a claims made basis. Provided however, that if the coverage is on a claims made basis, then the vendor shall be required to purchase, at the termination of this agreement, tail coverage for the County for the period of the County's relationship with the vendor under this agreement. Such coverage shall be in the amounts set forth in subparagraphs (1), (2), and (3) above.

Worker's Compensation Insurance:

Successful vendor shall also carry in full force Workers' Compensation Insurance policy(ies), if there is more than one employee, for all employees, including but not limited to full time, part time, and emergency employees employed by the vendor. Current insurance certificates certifying that such policies as specified above are in full force and effect shall be furnished by the vendor to the County.

The County of Galveston shall be named as additional insured on policies listed in subparagraphs above and shall be notified of any changes to the policy(ies) during the contractual period. Insurance is to be placed with insurers having a Best rating of no less than A. The vendor shall furnish the County with certificates of insurance and original endorsements affecting coverage required by these insurance clauses. The certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. The vendor shall be required to submit annual renewals for the term of any contractual agreement, purchase order or term contract, with Galveston County prior to expiration of any policy.

In addition to the remedies stated herein, the County has the right to pursue other remedies permitted by law or in equity.

The County agrees to provide vendor with reasonable and timely notice of any claim, demand, or cause of action made or brought against the County arising out of or related to utilization of the property. Vendor shall have the right to defend any such claim, demand, or cause of action at its sole cost and expense and within its sole and exclusive discretion. The County agrees not to compromise or settle any claim or cause of action arising out of or related to the utilization of the property without the prior written consent of the vendor.

In no event shall the County be liable for any damage to or destruction of any property belonging to the vendor unless specified in writing and agreed upon by both parties.

Procurement Policy - Special Note:

Understand that it is, according to Texas Local Government Code, Section 262.011, Purchasing Agents, subsections (d), (e), and (f), the sole responsibility of the Purchasing Agent to supervise all procurement transactions.

Therefore, be advised that all procurement transactions require proper authorization in the form of a Galveston County purchase order from the Purchasing Agent's office prior to commitment to deliver supplies, materials, equipment, including contracts for repair, service, and maintenance agreements. Any commitments made without proper authorization from the Purchasing Agent's office, pending Commissioners' Court approval, may become the sole responsibility of the individual making the commitment including the obligation of payment.

Code of Ethics - Statement of Purchasing Policy:

Public employment is a public trust. It is the policy of Galveston County to promote and balance the objective of protecting the County's integrity and the objective of facilitating the recruitment and retention of personnel needed by Galveston County. Such policy is implemented by prescribing essential standards of ethical conduct without creating unnecessary obstacles to entering public office.

Public employees must discharge their duties impartially so as to assure fair competitive access to governmental procurement by responsible contractors. Moreover, they should conduct themselves in such a manner as to foster public confidence in the integrity of the Galveston County procurement organization.

To achieve the purpose of these instructions, it is essential that those doing business with Galveston County also observe the ethical standards prescribed here.

General Ethical Standards: It shall be a breach of ethics to attempt to realize personal gain through public employment with Galveston County by any conduct inconsistent with the proper discharge of the employee's duties.

It shall be a breach of ethics to attempt to influence any public employee of Galveston County to breach the standards of ethical conduct set forth in this code.

It shall be a breach of ethics for any employee of Galveston County to participate directly or indirectly in procurement when the employee knows that:

- The employee or any member of the employee's immediate family has a financial interest pertaining to the procurement.
- A business or organization in which the employee, or any member of the employee's immediate family, has a financial interest pertaining to the procurement.
- Any other person, business or organization with which the employee or any member of the employee's immediate family is negotiating or has an arrangement concerning prospective employment is involved in the procurement.

Gratuities: It shall be a breach of ethics to offer, give or agree to give any employee of Galveston County, or for any employee or former employee of Galveston County to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any program requirement or a contract or subcontract, or to any solicitation or proposal therefore pending before this government.

Kickbacks: It shall be a breach of ethics for any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor for any contract for Galveston County, or any person associated therewith, as an inducement for the award of a subcontract or order.

Contract Clause: The prohibition against gratuities and kickbacks prescribed above shall be conspicuously set forth in every contract and solicitation by Galveston County.

Confidential Information: It shall be a breach of ethics for any employee or former employee of Galveston County to knowingly use confidential information for actual or anticipated personal gain, or for the actual or anticipated gain of any person.

Questions/Concerns:
If you have any questions or concerns regarding the information or instructions contained within this packet, please contact any member of the Purchasing Department staff at **(409) 770-5371**.

CONFLICT OF INTEREST DISCLOSURE REPORTING

Proposer may be required under Chapter 176 of the Texas Local Government Code to complete and file a conflict of interest questionnaire (CIQ Form). If so, the completed CIQ Form must be filed with the County Clerk of Galveston County, Texas.

If Proposer has an employment or other business relationship with an officer of Galveston County or with a family member of an officer of Galveston County that results in the officer or family member of the officer receiving taxable income that exceeds $2,500.00 during the preceding 12-month period, then Proposer **MUST** complete a CIQ Form and file the original of the CIQ Form with the County Clerk of Galveston County.

If Proposer has given an officer of Galveston County or a family member of an officer of Galveston County one or more gifts with an aggregate value of more than $250.00 during the preceding 12-months, then Proposer **MUST** complete a CIQ Form and file the original of the CIQ Form with the County Clerk of Galveston County.

The Galveston County Clerk has offices at the following locations:

Galveston County Clerk
Galveston County Justice Center, Suite 2001
600 59th Street
Galveston, Texas 77551

Galveston County Clerk
North County Annex, 1st Floor
174 Calder Road
League City, Texas 77573

Again, if Proposer is required to file a CIQ Form, the original completed form is filed with the Galveston County Clerk (not the Purchasing Agent).

For Proposer's convenience, a blank CIQ Form is enclosed with this proposal. Blank CIQ Forms may also be obtained by visiting the Galveston County Clerk's website and/or the Purchasing Agent's website - both of these web sites are linked to the Galveston County homepage, at http://www.co.galveston.tx.us.

As well, blank CIQ Forms may be obtained by visiting the Texas Ethics Commission website, specifically at http://www.ethics.state.tx.us/whatsnew/conflictforms.htm.

Chapter 176 specifies deadlines for the filing of CIQ Forms (both initial filings and updated filings).

It is Proposer's sole responsibility to file a true and complete CIQ Form with the Galveston County Clerk if Proposer is required to file by the requirements of Chapter 176. Proposer is advised that it is an offense to fail to comply with the disclosure reporting requirements dictated under Chapter 176 of the Texas Local Government Code.

If you have questions about compliance with Chapter 176, please consult your own legal counsel. Compliance is the individual responsibility of each person, business, and agent who is subject to Chapter 176 of the Texas Local Government Code.

COUNTY of GALVESTON
Purchasing Department

rev. 1.3, March 29, 2010

FORM PEID:	Request for Person-Entity Identification Data

Instructions: Please type or print clearly when completing sections 1 thru 4 and return completed form to:

Galveston County Purchasing Agent
722 Moody Avenue (21 st. Street), 5th Floor
Galveston, Texas 77550
(409) 770-5371
prodoc@co.galveston.tx.us

1.

Business Name:	
Attention Line:	

2.

Physical Address:			
City:		**State:**	**Zip+4:**

3.

Billing / Remit Address:			
City:		**State:**	**Zip+4**

4.

Main Contact Person:	
Main Phone Number:	
Fax Number:	
E-mail Address:	

Areas below are for County use only.

Requested By:	**Phone / Ext. #**
Department:	**Date:**

Action Requested - Check One:	**IFAS PEID Vendor Number:**	
( ) Add New	( ) Change Data	( ) Re-activate
( ) Inactivate	( ) Employee	( ) Attorney
( ) Landlord	( ) Foster Parent	( ) Refund
( ) OneTime	( ) Foster Child	

Form **W-9**
(Rev. December 2014)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification; check only **one** of the following seven boxes:
☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate
☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶
Note. For a single-member LLC that is disregarded, do not check LLC; check the appropriate box in the line above for the tax classification of the single-member owner.
☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
Exempt payee code (if any)
Exemption from FATCA reporting code (if any)
(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.)

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the instructions for line 1 and the chart on page 4 for guidelines on whose number to enter.

Social security number
☐☐☐ – ☐☐ – ☐☐☐☐

or

Employer identification number
☐☐ – ☐☐☐☐☐☐☐

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here **Signature of U.S. person ▶** **Date ▶**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. Information about developments affecting Form W-9 (such as legislation enacted after we release it) is at *www.irs.gov/fw9*.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following:

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding?* on page 2.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting?* on page 2 for further information.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States:

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code* on page 3 and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships* above.

What is FATCA reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code* on page 3 and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account, list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note. ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C Corporation, or S Corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box in line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box in line 3.

Limited Liability Company (LLC). If the name on line 1 is an LLC treated as a partnership for U.S. federal tax purposes, check the "Limited Liability Company" box and enter "P" in the space provided. If the LLC has filed Form 8832 or 2553 to be taxed as a corporation, check the "Limited Liability Company" box and in the space provided enter "C" for C corporation or "S" for S corporation. If it is a single-member LLC that is a disregarded entity, do not check the "Limited Liability Company" box; instead check the first box in line 3 "Individual/sole proprietor or single-member LLC."

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space in line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note. You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited Liability Company (LLC)* on this page), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note. See the chart on page 4 for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.ssa.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting IRS.gov or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note. Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: *A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.*

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, or 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor[2]
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
5. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
6. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
7. Disregarded entity not owned by an individual	The owner
8. A valid trust, estate, or pension trust	Legal entity[4]
9. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
10. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
11. Partnership or multi-member LLC	The partnership
12. A broker or registered nominee	The broker or nominee
13. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
14. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 2.

*Note. Grantor also must provide a Form W-9 to trustee of trust.

Note. If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Publication 4535, Identity Theft Prevention and Victim Assistance.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: *spam@uce.gov* or contact them at *www.ftc.gov/idtheft* or 1-877-IDTHEFT (1-877-438-4338).

Visit IRS.gov to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor or other person doing business with local governmental entity

FORM CIQ

This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001 (1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

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

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

OFFICE USE ONLY

Date Received

1 **Name of person who has a business relationship with local governmental entity.**

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

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 **Name of local government officer with whom filer has employment or business relationship.**

Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each *officer* with whom the filer has an employment or other business relationship as defined by Section 176.001 (1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

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

☐ Yes ☐ NO

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government *officer* named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ NO

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an *officer* or director, or holds an ownership of 10 percent or more?

☐ Yes ☐ NO

D. Describe each employment or business relationship with the local government *officer* named in this section.

4

Signature of person doing business with the governmental entity

Date

Adopted *06/29/2007*

County of Galveston

ACKNOWLEDGMENT AND CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER INELGIBILITY

Executive Orders 12549 & 12689 Certification, Debarment and Suspension

Solicitation Number: ITB #B191024

Solicitation Title: Bel Road Extension and Linear Detention Ditch

Contractor hereby CERTIFIES that:

Contractor, and all of its principals, is not presently debarred, suspended, proposed for debarment, proposed for suspension, or declared ineligible under Executive Order 12549 or Executive Order 12689, Debarment and Suspension, and is not in any other way ineligible for participation in Federal or State assistance programs;

Contractor, and all of its principals, were not and have not been debarred, suspended, proposed for debarment, proposed for suspension, or declared ineligible under Executive Order 12549 or Executive Order 12689, Debarment and Suspension, and were not and have not been in any other way ineligible for participation in Federal or State assistance programs at the time its' proposal was submitted in the procurement identified herein and at any time since submission of its' proposal;

Contractor has included, and shall continue to include, this certification in all contracts between itself and any sub-contractors in connection with services performed under this contract; **and**

Contractor shall notify Galveston County in writing immediately, through written notification to the Galveston County Purchasing Agent, if Contractor is not in compliance with Executive Order 12549 or 12689 during the term of its contract with Galveston County.

Contractor **Represents** and **Warrants** that the individual executing this Acknowledgment and Certification on its behalf has the full power and authority to do so and can legally bind the Contractor hereto.

Name of Business	Date
By: Signature	Printed Name & Title

SPECIAL PROVISIONS FOR CONSTRUCTION

1. Contract and Contract Documents

The Plans, Specifications and Addenda, General Provisions 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 County of Galveston, 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 architectural or 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: Invitation to Bid, , Signed Copy of Bid, General Conditions, Special Provisions For Construction, Acknowledgement and Certification Regarding Debarment, Non-Collusion Affidavit, Vendor Qualification Packet, Payment and Performance Bonds, Contract Award, Addenda (if any), Technical Specifications, and Drawings (as listed in the Schedule of Drawings).

(e) The term “Substantially Complete” shall mean that the work is fully completed with the exception of minor miscellaneous work and adjustments.

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) Five percent (5%) 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.

(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 eighteen percent (18%).

(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. Estimated Quantities

This Contract, including the specifications, plans and estimates, is intended to show clearly all the work to be done and material to be furnished hereunder. The estimated quantities of the various classes of work to be done and material to be furnished under this contract are approximate and are to be used as a basis for estimating the probable cost of the work and for comparing the proposals offered for the work. It is understood and agreed that the actual amount of work to be done and material to be furnished under this contract may differ somewhat from these estimates, and that the basis for payment under this contract shall be the plan quantity or actual amount of such work done whichever is specified. It is further understood that the County does not guarantee any minimum amount of work under this Contract.

Contractor agrees that it will make no claim for damages, anticipated profits or otherwise on account of any differences which may be found between the quantities of work actually done, the material actually furnished under this Contract and the estimated quantities contemplated and contained in the proposals.

9. 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 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.

10. Time

The Contractor is advised that time for completion will consist of the number of calendar days set out in the Contract Award. The time for completion will begin to run on the day after the issuance of a notice to proceed by the County. The Contractor is required to start work no later than ten (10) working days after the issuance of the written notice to proceed. Failure to timely commence operations may be deemed by the County to be a default. The Contractor will complete the work at that site within the time period specified. If there is more than one site listed on the notice to proceed, work for all sites must be completed not later than is specified for each site.

11. Termination, Delays, and Liquidated Damages

(a) Right of the Owner to Terminate Contract.

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 days, the contract shall, upon the expiration of said ten (10) 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) 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.

(b) Liquidated Damages for Delays.
Contractor agrees that time is of the essence of this contract and that for each day of a delay of a day beyond the number of working days or calendar days herein agreed upon the completion of the work herein specified and contracted for (after due allowance for such extension of time as is provided for under Extension of Time hereinabove) County may withhold permanently from Contractor's total compensation the sum of $500.00 for each calendar day of delay, until the work is completed, as liquidated damages for such delay. The Contractor and his sureties shall be liable to the Owner for the amount thereof.

(c) 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:

a. 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;

b. Any acts of the Owner;

c. 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.

2) Provided, however, that the Contractor promptly notifies the Owner within ten (10) 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.

12. 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.

13. 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) 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) days of its commencement, the claim will be considered only for a period commencing ten (10) 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.

14. 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.

15. Shop Drawings

(a) All required shop drawings, machinery details, layout drawings, etc. shall be submitted to the Engineer in 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. 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 Two Hundred Seventy (270) calendar days thereafter.

34. Keeping Of Plans And Specifications Accessible

The Contractor shall keep one (1) copy of all Plans and Specifications constantly accessible at the work site and available for inspection at all times.

35. Utilities

Contractor shall be responsible for any charges which may be made by any city or utility companies for the work to be performed by Contractor.

36. Parking

Contractor shall be responsible for the expense of parking the Contractor's vehicle(s) in a legal manner and at no expense or inconvenience to the County.

37. Fire And Safety

Contractor is completely responsible for fire protection at the job site as well as the safety of its own employees as well as those entering onto the job site.

38. Contractor's Buildings

The building of structures for housing men, or the erection of tents or other forms of protection will be permitted only at such places as the County shall permit, and the sanitary conditions of the grounds in or about such structures shall at all times be maintained in the manner satisfactory to the County.

39. Worksite Security

Contractor shall maintain the security of the worksite.

Contractor shall provide adequate protection to persons on the worksite, adjacent properties, and utilities as is necessary to keep each free of damage or injury. Contractor shall furnish all barricades, warning lights and other safety devices necessary for the safety and protection of the public and shall remove them upon completion of the work performed on those premises under the terms of this contract.

Contractor will have complete control over the work site and shall be fully responsible for any loss of or damage to any County property from any cause and will reimburse County in the event of any loss or damage to County's property from any cause.
Contractor shall take proper means to protect adjacent or adjoining properties which might be injured or seriously affected by construction undertaken under this Agreement from any damage or injury by reason of said process of construction. Contractor shall be liable for any and all claims for such damage on account of its failure to fully protect all adjoining properties.

40. Final Grading

If grading is required, when work is complete, Contractor shall grade the site to fill in holes and make a presentable appearance without disturbing trees and add fill dirt if needed. Contractor may not leave voids in the grading and compaction of the property. The land shall have a smooth appearance without concrete, bricks, building materials, and other debris on the surface.

41. Changes And Alterations

Contractor further agrees that County may make such changes and alterations as County may see fit, in the line, grade, form dimensions, plans or materials for the work herein contemplated, or any part thereof, either before or after the beginning of the contract construction, without affecting the validity of this Contract and the accompanying bonds.

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

42. Extra Work

The term "Extra Work" as used in this contract shall be understood to mean and include all work that may be required by the County to be done by Contractor to accomplish any change, alteration or addition to the work shown in the plans and specifications.

It is agreed that Contractor shall perform all Extra Work under the direction of the County when presented with a Written Work Order signed by the County. It is also agreed that the compensation to be paid Contractor for performing said Extra Work shall be determined by one or more of the following methods:

Method (a) - By agreed unit prices; or
Method (b) - By agreed lump sum: or
Method (c) - If Neither Method (a) nor Method (b) can be agreed upon before the Extra Work is commenced, then Contractor shall be paid the "Actual field cost" of the work plus fifteen (15) percent.

In the event said Extra Work be performed and paid for under Method (c), then the provisions of this paragraph shall apply and the "actual field cost" is hereby defined to include the cost of all workmen, such as foremen, timekeepers, merchants, and laborers, and materials, supplies, teams, trucks, rentals on machinery and equipment for time actually employed or used on such Extra Work plus actual transportation charges necessarily incurred, if the kind of equipment or machinery is not already on the job, together with all power, fuel, lubricants, water and similar operating expenses, also all necessary incidental expenses incurred directly on account of such Extra Work including Social Security, Old Age Benefits and other payroll taxes, and a ratable proportion of premiums on Construction and Maintenance Bonds, Public Liability and Property Damage and Workmen's Compensation, and all other insurance as may be required by any law or ordinance. The County may direct the form in which accounts of the "actual field cost" shall be kept and may also specify in writing, before the work commences, the method of doing the work and the type and kind of machinery and equipment to be used, otherwise these matters shall be determined by Contractor. Unless otherwise agreed upon, the prices for the use of machinery and equipment shall be determined by using the one hundred (100) percent of the actual hourly or daily rate (for the time used plus time in moving to and from Job) of the latest schedule of Equipment Ownership Expense adopted by the Association General Contractors of America. Where practicable the terms and prices for the use of Machinery and Equipment shall be incorporated in the Written Extra Work Order. The fifteen (15) percent of the "Actual Field Cost" to be paid Contractor shall cover and compensate him for his profit, overhead, general superintendence and field office expense, and all other elements of cost and expense not embraced within the 'actual field cost" as herein defined, save that where the Contractor's Camp or Field Office must be maintained primarily on account of such extra work, then the cost to maintain and operate same shall be included in the "actual field cost".

No claim for extra work of any kind will be allowed unless ordered in writing by the County. In case any orders or instructions, either oral or written appear to Contractor to involve extra work for which he should receive compensation, it shall make written request to the County for written order authorizing Extra Work. Should a difference of opinion arise as to what does or does not constitute extra work, or as to the payment therefor, and the County insists upon its performance, Contractor shall proceed with the work after making written order and shall keep an accurate account of the "actual field cost" thereof, as provided under Method (c) and by this action Contractor will thereby preserve the right to submit the matter of payment to litigation.

43. Salvage

Any materials, equipment and fixtures specifically ordered to be salvaged under these specifications shall remain the property of County and will be delivered to the site designated by the County. All other items shall be disposed of by Contractor in compliance with all applicable laws and regulations.

44. Compliance With Codes

Contractor shall comply with all city, county, and state codes, laws, and ordinances in force at the time of award of contract and applicable to such work. Contractor shall obtain, at Contractor's own expense such permits, certificates, and licenses as may be required in the performance of the specified work.

45. Laws And Ordinances

Contractor shall at all times observe and comply with all Federal, State and Local Laws, ordinances and regulations which in any manner effect the contract or the work, and shall indemnify and save harmless the County against any claim arising from the violation of any such laws and ordinances, whether by Contractor or its employees.

46. Permits And Licenses

Contractor shall be responsible for obtaining and furnishing all necessary permits and licenses, City, County, State or Federal as are required for the performance of this contract.

47. Lines And Grades

The Engineer will furnish points for horizontal and vertical control. Any additional stakes required by the Contractor shall be set at his expense. Whenever necessary, work shall be suspended to permit this work, but such suspension will be as brief as practicable and the Contractor shall be allowed no extra compensation therefor. The Contractor shall give the Engineer ample notice of the time and place where control lines and bench marks will be needed. All control stakes, marks, etc. shall be carefully preserved by the Contractor, and in case of careless destruction or removal by him or his employees, such control stakes, marks, etc. shall be replaced by the Engineer at the Contractor’s expense.

48. Excess, Waste Material And Debris

All excess material, waste material and debris shall become the property of the Contractor and shall be properly disposed of off-site. No separate payment shall be made for same.

49. Material Hauling

Hauling of materials will not be paid for directly, but shall be considered as subsidiary work pertaining to the respective bid items. Haul routes for full and empty loads shall be restricted to State Highways. Hauling of equipment is also restricted to State Highways.

50. Abatement And Mitigation Of Excessive Or Unnecessary Construction Noise

Throughout all phases of the construction of this project, including the moving, unloading, operating and handling of construction equipment prior to commencement of work, during the project and after the work is complete, the contractor shall make every reasonable effort to minimize the noise imposed upon the immediate neighborhood surrounding the area of construction. Particular and special efforts shall be exercised by the Contractor to avoid the creation of unnecessary noise impacts on adjacent sensitive receptors in the placement of non-mobile equipment such as air compressors, generators, pumps, etc. The placement of temporary parked mobile equipment with the engine running shall be such as to cause the least disruption of normal adjacent activities not associated with the work to be performed by the contractor.

All equipment associated with the work shall be equipped with components designed by the manufacturer wholly or in part to suppress excessive noise and these components shall be maintained in their original operating condition considering normal depreciation. Noise-attenuation devices installed by the manufacturer such as mufflers, engine covers, insulation, etc., shall not be removed nor rendered ineffectual nor be permitted to remain off the equipment while the equipment is in use.

51. Working Hours

Work shall not be commenced by the contractor before sunrise and shall be so conducted that all equipment is off the road and safely stored by sunset. Specific permission shall be obtained by the contractor from the Engineer for work during those hours between 7:00 P.M. and 6:00 A.M. of the following day.

52. Pipeline, Utility Locations And Contractor Responsibility

An effort to determine all pipelines and utilities which may impact the project has been made. All known pipelines and utilities have been approximately located and shown on the plans. The Contractor shall notify all utility and pipeline owners before beginning the work. Additional unknown utilities and pipelines may be found. Adjustments of these utilities or pipelines shall be done by others at no expense to the contractor. However, the Contractor shall cooperate and coordinate his work with the adjustment.

The Contractor will anticipate this in making his bid. The contractor will not be allowed claims for damages or delays for these adjustments should they be necessary. However, additional time will be considered for the contract period.

This action, however, shall in no way be interpreted as relieving the Contractor of his responsibilities under the terms of the contract as set out in the plans and specifications. The Contractor shall repair any damage to the facilities caused by his operations at the Contractor's expense and shall restore facilities to service in a timely manner.

53. Incidentals

All items of work required under this contract not specifically called for in the proposal as pay items shall be considered incidental to the various bid items and no separate payment shall be made for same.

54. Flagmen

During certain phases of construction flagmen will be required to direct and control traffic. This work will not be paid for directly, but shall be considered incidental the various bid items and no separate payment shall be made for same.

55. Field Office

For this project the Contractor will not have to provide a field office.

56. Wage Rates:

The attached schedule of wages per hour for this Contract follows.

BID FORM
BEL ROAD EXTENSION & LINEAR DETENTION DITCH

BASE BID

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
1	110	Clearing and Grubbing Existing Earth and Foliage for Road, Complete in Place	6,385	SY	_____Dollars _____Cents	$_____	$_____
2	104	Existing Concrete Paving Excavation, Including Base Material, Complete in Place	52	SY	_____Dollars _____Cents	$_____	$_____
3	110	Cut / Excavation for Ditch Finished Grade, Blading of Excavation to Embankment Area (Less than 0.5 miles), Placement and Compaction to 95% Standard Procter Density, Removal of Excess Off Site, Complete in Place.	12,785	CY	_____Dollars _____Cents	$_____	$_____
4	132	Embankment for Ditch Finished Grade, Placement and Compaction to 95% Standard Procter Density, Complete in Place.	955	CY	_____Dollars _____Cents	$_____	$_____
5	N/A	Hydro-Excavation to Field Locate Depth of all Pipeline Crossings, Complete in Place	1	LS	_____Dollars _____Cents	$_____	$_____
6	LJA Spec. 2565	8-Inch Sanitary Sewer Force Main (PVC, AWWA C-900, DR-18), Open Cut Construction, All Depths, With Ductile Iron Fittings, Joint Restraints (as necessary), Including Testing and All Appurtenances, Complete in Place.	85	LF	_____Dollars _____Cents	$_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
7	LJA Spec. 15122	Air Release Valve, Per Detail, Complete in Place	1	EA	_____Dollars _____Cents	$_____	$_____
8	PLANS Sht #22	Sewage Air Release Valve Cast in Place Base Manhole, Complete in Place	1	EA	_____Dollars _____Cents	$_____	$_____
9	LJA Spec. 2555	Fire Hydrant Assembly, With Restrained Joints, 4-Foot Bury, Concrete Collar, Thrust Block, Complete in Place	3	EA	_____Dollars _____Cents	$_____	$_____
10	465	Type "A" Inlet, Complete in Place	1	EA	_____Dollars _____Cents	$_____	$_____
11	465	Type "B-B" Inlet, Complete in Place	11	EA	_____Dollars _____Cents	$_____	$_____
12	465	Type "C" Inlet, Complete in Place	6	EA	_____Dollars _____Cents	$_____	$_____
13	465	Type "E" Inlet, Complete in Place	2	EA	_____Dollars _____Cents	$_____	$_____
14	464	18-Inch Reinforced Concrete Arch Pipe, ASTM C-76, Class III, Complete in Place	224	LF	_____Dollars _____Cents	$_____	$_____
15	464	24-Inch Reinforced Concrete Pipe, ASTM C-76, Class III, Complete in Place	965	LF	_____Dollars _____Cents	$_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
16	464	36-Inch Reinforced Concrete Pipe, ASTM C-76, Class III, Complete in Place	431	LF	_____Dollars _____Cents	$_____	$_____
17	464	42-Inch Reinforced Concrete Pipe, ASTM C-76, Class III, Complete in Place	374	LF	_____Dollars _____Cents	$_____	$_____
18	464	48-Inch Reinforced Concrete Pipe, ASTM C-76, Class III, Complete in Place	36	LF	_____Dollars _____Cents	$_____	$_____
19	462	5-Foot by 3-Foot Reinforced Concrete Box Culvert, ASTM C-1433, Complete in Place	150	LF	_____Dollars _____Cents	$_____	$_____
20	462	7-Foot by 3-Foot Reinforced Concrete Box Culvert, ASTM C-1433, Complete in Place	50	LF	_____Dollars _____Cents	$_____	$_____
21	462	7-Foot by 4-Foot Reinforced Concrete Box Culvert, ASTM C-1433, Complete in Place	385	LF	_____Dollars _____Cents	$_____	$_____
22	420	Junction Box "6" as per Detail, Complete in Place	1	LS	_____Dollars _____Cents	$_____	$_____
23	420	Junction Box "7" as per Detail, Complete in Place	1	LS	_____Dollars _____Cents	$_____	$_____
24	420	Junction Box "8" as per Detail, Complete in Place	1	LS	_____Dollars _____Cents	$_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
25	465	Concrete Storm Manhole (4-Foot Diameter), Complete in Place	2	EA	_____Dollars _____Cents	$_____	$_____
26	465	Concrete Storm Manhole (6-Foot Diameter), Complete in Place	4	EA	_____Dollars _____Cents	$_____	$_____
27	PLANS Sht #22	Stabilized Construction Exit, Complete In Place	2	EA	_____Dollars _____Cents	$_____	$_____
28	110	Proposed Swale as Specified in Plans, Complete in Place	2,405	LF	_____Dollars _____Cents	$_____	$_____
29	263	8-Inch Stabilized Sub-Grade (Manipulation), Complete in Place	6,601	SY	_____Dollars _____Cents	$_____	$_____
30	263	Lime for 8-Inch Stabilized Sub-Grade (6% by Dryweight), Complete in Place (36 lb/sy)	115	TON	_____Dollars _____Cents	$_____	$_____
31	360	7-Inch Reinforced Concrete Pavement (Minimum 5.5 Sacks per Cubic Yard), Complete in Place	6,385	SY	_____Dollars _____Cents	$_____	$_____
32	360	6-Inch Reinforced Concrete Pavement for Driveways (Minimum 5.5 Sacks per Cubic Yard), Complete in Place	261	SY	_____Dollars _____Cents	$_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
33	531	5-Foot Concrete Sidewalk (4.5-Inch Thick), Complete in Place	1,025	SY	_____Dollars _____Cents	$_____	$_____
34	531	ADA-Handicap Accessible Ramp, Complete in Place	3	EA	_____Dollars _____Cents	$_____	$_____
35	PLANS Sht #3	Zero Load Slab (Per Detail), Complete in Place	3	EA	_____Dollars _____Cents	$_____	$_____
36	529	6-Inch Concrete Curb, Complete in Place	3,770	LF	_____Dollars _____Cents	$_____	$_____
37	275	Lime for 6-Inch Stabilized Sub-Grade (6% by Dryweight), Complete in Place (27 lb/sy)	5	TON	_____Dollars _____Cents	$_____	$_____
38	275	6-Inch Stabilized Sub-Grade (Manipulation), Complete in Place	365	SY	_____Dollars _____Cents	$_____	$_____
39	292 340	3-Inch Asphalt Surface, Including 8-Inch Thick Asphalt Base, Gr. 2, PG-64, Per TXDOT Item 292, and 3-Inch Thick HMHL Surface Coarse, Type "D" per TXDOT Item 340, Complete in Place	365	SY	_____Dollars _____Cents	$_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
40	PLANS Sht #23	Concrete Slope Paving For Drainage with Toe Walls and all Appurtenances, Complete in Place	430	SY	_____Dollars _____Cents	$_____	$_____
41	PLANS Sht #24	Backslope Interceptor as Shown in Plan Details Including Pipe, Complete in Place	4	EA	_____Dollars _____Cents	$_____	$_____
42	PLANS Sht #16	Concrete Tie-in along Bel Road, Complete In Place	1	LS	_____Dollars _____Cents	$_____	$_____
43	PLANS Sht #20	Concrete Tie-in at Bayshore Drive, Complete In Place	1	LS	_____Dollars _____Cents	$_____	$_____
44	Proj. Spec. & T.M.U. T.C.D.	Aluminum Stop Sign as Shown on Plans, with City of Kemah Street Names on Top of Sign, Complete in Place	2	EA	_____Dollars _____Cents	$_____	$_____
45	636	Aluminum Stop Sign as Shown on Plans, Complete in Place	2	EA	_____Dollars _____Cents	$_____	$_____
46	502	Traffic Control Plan, Complete in Place	1	LS	_____Dollars _____Cents	$_____	$_____
47	666	Traffic Markings, Prep and Paint, 4-Inch Solid White Striping, Complete in Place, As Directed by Engineer	3,959	LF	_____Dollars _____Cents	$_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
48	666	Traffic Markings, Prep and Paint, 4-Inch Solid Yellow Striping, Complete in Place, As Directed by Engineer	770	LF	_____Dollars _____Cents	$_____	$_____
49	666	Traffic Markings, Prep and Paint, 24-Inch Solid White Stop Bar, Complete in Place, As Directed by Engineer	52	LF	_____Dollars _____Cents	$_____	$_____
50	LJA Spec. 2107	Turf Establishment, Full Sodding, Complete in Place	911	SY	_____Dollars _____Cents	$_____	$_____
51	LJA Spec. 2107	Turf Establishment, Hydromulch Seeding, Complete in Place	0.75	AC	_____Dollars _____Cents	$_____	$_____
52	LJA Spec. 2107	Turf Establishment, Dry Application, Complete in Place	0.87	AC	_____Dollars _____Cents	$_____	$_____
53	506	SWPPP, Reinforced Filter Fabric Fence, Installed, Maintained, And Removed, Complete in Place	242	LF	_____Dollars _____Cents	$_____	$_____
54	LJA Spec. 1563	Control of Ground Water and Surface Water, Complete in Place	1,780	LF	_____Dollars _____Cents	$_____	$_____

TOTAL AMOUNT BASE BID ITEMS _____
(Items 1 thru 54)

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
		SUPPLEMENTARY BID ITEMS					
55	LJA Spec. 2555	12-Inch Waterline (PVC, AWWA C-900, DR-18) with Ductile Iron Fittings, Open Cut, Joint Restraints (as necessary), All Depths, As Directed by Owner's Representative, Complete in Place	50	LF	_____Dollars _____Cents	(Minimum bid $70.00) $_____	$_____
56	LJA Spec. 2555	Extra Depth Bury for Fire Hydrant, Complete in Place	8	VF	_____Dollars _____Cents	(Minimum bid $150.00) $_____	$_____
57	PLANS Sht #3	Laminated Crane Mats 16-Feet by 8-Feet, As Directed by Owner's Representative, Complete in Place	40	EA	_____Dollars _____Cents	(Minimum bid $300.00) $_____	$_____
58	400	"Extra" Cement Stabilized Sand, As Directed by Owner's Representative, Complete in Place	500	TON	_____Dollars _____Cents	(Minimum Bid $30.00) $_____	$_____
59	360	"Extra" Class A Concrete, As Directed by Owner's Representative, Complete in Place	250	CY	_____Dollars _____Cents	(Minimum bid $100.00) $_____	$_____
60	PLANS Sht #2	Select Fill, Compacted per ASTM D698, As Directed by Owner's Representative, Complete in Place	300	CY	_____Dollars _____Cents	(Minimum Bid $10.00) $_____	$_____

ITEM No.	SPEC No.	DESCRIPTION	APPROX. QTY.	UNITS	UNIT PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
61	263	Flyash for 8-Inch Stabilized Sub-Grade (6% by Dryweight), Complete in Place (48 lb/sy)	50	TON	_____Dollars _____Cents	(Minimum Bid $100.00) $_____	$_____
62	292 340	3-Inch Asphalt Surface and 3-Inch Thick HMHL Surface Coarse, Type "D" per TXDOT Item 340, Complete in Place	365	SY	_____Dollars _____Cents	(Minimum Bid $25.00) $_____	$_____
					TOTAL AMOUNT SUPPLEMENTARY BID ITEMS	_____ (Items 55 thru 62)	
ALLOWANCE BID ITEMS							
63	CPT	Remove and Relocate Overhead Electrical Lines, As Directed by Owner's Representative, Complete in Place	1	LS	_____Dollars _____Cents	$84,823.72	$84,823.72
64	CPT	Remove and Relocate Fiber Optic Lines, As Directed by Owner's Representative, Complete in Place	1	LS	_____Dollars _____Cents	$11,000.00	$11,000.00
					TOTAL AMOUNT ALLOWANCE ITEMS	**$95,823.72** (Items 63 thru 64)	
ALTERNATE BID ITEMS							
65	110	Add / Deduct for Hauling Spoils Outside City of Kemah City Limits Instead of as Directed on Plans, As Directed by Owner's Representative, Complete in Place	1	LS	_____Dollars _____Cents	$_____	$_____
					TOTAL AMOUNT ALTERNATE ITEMS	_____ (Items 65 thru 65)	

TOTAL AMOUNT BASE BID ITEMS AND SUPPLEMENTARY BID ITEMS AND ALLOWANCE BID ITEMS _____ (Items 1 thru 64)

CONTRACT AWARD

CONTRACT FOR: BEL ROAD EXTENSION AND LINEAR DETENTION DITCH

THIS CONTRACT IS ENTERED INTO BETWEEN GALVESTON COUNTY AND THE CONTRACTOR NAMED BELOW PURSUANT TO SUBCHAPTER B, CHAPTER 271, TEXAS LOCAL GOVERNMENT CODE, AND THE REFERENCED INVITATION TO BID.

Contract No: 18-1100

Bid No: B191024

Contractor: _____

The Specifications and Drawings are enumerated as follows:

Standard Specifications: **Standard Specifications For Construction And Maintenance Of Highways, Streets And Bridges; adopted by the Texas Department Of Transportation, 2014**
LJA Specs: 1400, 1563, 2107, 2274, 2555, 2565, 15122
City of Houston Spec: 02336

Special Items:

DRAWINGS: **1 Thru 39**
ADDENDA: _____

Contract Award (continued)

Invitation to Bid, General Provisions, Special Provisions, Bid Forms, Non-Collusion Affidavit, Vendor Qualification Packet, Debarment Form, Special Provisions for Construction, Bid Proposal, Affidavit and Surety Forms, Wage Rates, Specifications and Plans attached to this Contract Award are all made a part of this Contract and collectively evidence and constitute the entire contract. Contractor shall furnish all materials, perform all of the work required to be done and do everything else required by these documents.

Time of Completion: The Contractor shall complete the work within 270 Calendar Days of the issuance of the notice to proceed. The time set forth for completion of the work is an essential element of the Contract.

The Contract Sum: The County shall pay the Contractor for performance of the Contract, the sum of _____
_____
Dollars and ___/100 ($_____), payments to be made as described herein.

Performance Bond required: (x) yes ( ) no
Payment Bond required: (x) yes ( ) no

This Contract is issued pursuant to award made by Commissioners' Court on _____, 20___.

EXECUTED this _____ day of _____, 20___.

COUNTY OF GALVESTON, TEXAS

BY: _____
MARK HENRY, County Judge

ATTEST:

_____
DWIGHT SULLIVAN, County Clerk

CONTRACTOR

_____

BY: _____
Signature - Title

_____
Printed Name

CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIEN

TO (Owner): Galveston County

PROJECT NO: E135-0320 & 0340

CONTRACT FOR:

PROJECT: (name, address) Bel Road Extension and Linear Detention Ditch, Hwy 146 Kemah, Texas

CONTRACT DATE:

State of:

County of:

The undersigned, hereby certifies that, to the best of his knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS: (If none, write "None". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Sub-contractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR:

Address:

BY:

Subscribed and sworn to before me this

day of 20

Notary Public:

My Commission Expires:

CONSENT OF SURETY TO REDUCTION IN OR PARTIAL RELEASE OF RETAINAGE

TO (Owner): Galveston County

PROJECT NO: E135-0320 & 0340

CONTRACT FOR:

PROJECT:
(name, address) Bel Road Extension and Linear Detention Ditch, Hwy 146 Kemah, Texas

CONTRACT DATE:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(here insert name and address of Surety as it appears in the bond).

, SURETY,

on bond of (here insert name and address of Contractor as it appears in the bond)

, CONTRACTOR,

hereby approves the reduction in or partial release of retainage to the contractor as follows:

The Surety agrees that such reduction in or partial release of retainage to the Contractor shall not relieve the Surety of any of its obligations to (here insert name and address of Owner)

, OWNER,

as set forth in the said Surety's bond.

IN WITNESS WHEREOF,
the Surety has hereunto set its had this day of 20 .

_____
Surety

_____
Signature of Authorized Representative

_____
Title

ATTEST:
(Seal):

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

TO (Owner): Galveston County

PROJECT NO: E135-0320 & 0340

CONTRACT FOR:

PROJECT: (name, address) Bel Road Extension and Linear Detention Ditch, Hwy 146 Kemah, Texas

CONTRACT DATE:

CONTRACTOR:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the (here insert name and address of Surety as it appears in the bond).

, SURETY COMPANY,

on bond of (here insert name and address of Contractor)

, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to (here insert name and address of Owner)

, OWNER,

as set forth in the said Surety Company's bond.

IN WITNESS WHEREOF,
the Surety Company has hereunto set its had this day of 20 .

_____
Surety Company

_____
Signature of Authorized Representative

_____
Title

ATTEST:
(Seal):

NOTE: This form is to be use as a companion document to Contractor's Affidavit of Payment of Debts and Claims.

LJA Project No. E135-0320 & 0340

ITEM 1400

MEASUREMENT AND PAYMENT

MEASUREMENT AND PAYMENT: It is the intent of the Proposal and of the General and Supplementary Conditions that the total bid, as submitted, shall cover all work required by these Contract Documents and the Plans. All costs in connection with the work, including the furnishing of all materials, appliances, equipment, supplies and all appurtenances; providing all construction equipment and tools; and performing all necessary labor to fully complete the work shall be included in the unit prices in the Proposal. No item of work that is required by the Contract Documents for the proper and successful completion of the Contract will be paid for outside of or in addition to the prices submitted to the Proposal. All work not specifically set forth in the Proposal as a pay item shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices named in the Proposal.

The method of measurement and basis of payment shall be as stipulated in the following subparagraphs:

1. Clearing and Grubbing; Bid Items 1:

   Measurement shall be "Per Square Yard". The unit price shall be full compensation for the cutting, removal, and disposal of trees, brush, stumps, and other materials within the City's right of way along the path of the proposed road's.

2. Existing Concrete Paving Excavation; Bid Items 2:

   Measurement shall be "Per Square Yard". The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work; including roadway, destruction, excavation, saw cutting, shaping and finishing, salvaging, transporting, and removing material, as required.

3. Cut / Excavation for Ditch Finished Grade; Bid Item 3:

   Measurement shall be "Per Cubic Yard". The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including excavating or blading onsite material from ditch and proposed roadway to establish a finished grade on spoil location sheet as called out in plans, and reach compaction to 95% by Standard Procter Density. The surplus suitable material shall be placed as shown in plans as described by Owner's Representative. The location for desirable spoil to be placed shall not exceed a distance of 0.5 miles.

4. Embankment for Fill Purposes, Bid Item 4:

   Measurement shall be “Cubic Yard” of in-place material. The unit price shall be full compensation for materials, labor, and appurtenances for delivery and installation of extra embankment as required to raise and establish a finished grade as called out on plans, and reach compaction of 95% standard proctor density, as directed by the Owner’s Representative.

5. Hydro-Excavation; Bid Item 5:

   Measurement is to be “Per Lump Sum.” Payment for required hydro-excavation directed by owner’s representative to locate all pipeline crossings for the entirety of the job that are required by the pipeline owners, all appurtenances, and any incidentals necessary to complete the work.

6. Sanitary Sewer Force Main, Open Cut; Bid Item 6:

   Measurement shall be “Per Linear Foot” along the centerline of pipe without deductions for fittings, from start to line terminus. The unit price shall be full compensation for layout, grade, clearing and grubbing, pavement removal, trenching and incidentals thereto, specified bedding per appropriate pipe material, pipe and fitting materials, steel pipe sections (as applicable), pipe placement, well point dewatering, thrust control and normal backfill to existing grade, testing, connections, trench backfill, maintenance, clean-up, trench dewatering, and all incidental work required for the complete contract not specifically included in another payment item.

7. Air Release Valve; Bid Item 7:

   Measurement shall be "Per Each". Payment is full compensation for excavation, tap of proposed line, valves, valve box, grading, well point dewatering, and all other items incidental to the installation of the assembly as shown on the Plans.

8. Sewage Air Release Valve Cast in Place Base Manhole; Bid Item 8:

   Measurement will be “Per Each”. Payment shall be full compensation for a 4-foot diameter manhole 0 to 12 feet deep, sealed, well point dewatering, bypass pumping, per details on plans if necessary, complete in place concrete units including cone, rings, frame and cover, accessories, and backfill per details shown on Plans.

9. Fire Hydrant Assembly; Bid Item 9:

   Measurement is to be "Per Each." Unit price shall be full compensation for tee (if required), piping, valve, elbow, new fire hydrant 4' bury, extended lead piping (if required), restrained joints, well point dewatering, concrete block, drain gravel and backfill.

10. Type “A” Grate Inlet; Bid Item 10:

    Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing and installation of type “A” inlet including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed type “A” inlet.

11. Type “B-B” Inlet; Bid Item 11:

    Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing and installation of type “B-B” inlet including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed type “B-B” inlet.

12. Type “C” Inlet; Bid Item 12:

    Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing and installation of type “C” inlet including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed type “C” inlet.

13. Type “E” Inlet; Bid Item 13:

    Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing and installation of type “E” inlet including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed type “E” inlet.

14. 18-Inch Arch Reinforced Concrete Pipe, ASTM C-76, Class III; Bid Item 14:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing and installation of storm sewers of size contained in the bid form including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed storm sewers.

15. 24-Inch Reinforced Concrete Pipe, ASTM C-76, Class III; Bid Item 15:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing and installation of storm sewers of size contained in the bid form including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed storm sewers.

16. 36-Inch Reinforced Concrete Pipe, ASTM C-76, Class III; Bid Item 16:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing and installation of storm sewers of size contained in the bid form including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed storm sewers.

17. 42-Inch Reinforced Concrete Pipe, ASTM C-76, Class III; Bid Item 17:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing and installation of storm sewers of size contained in the bid form including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed storm sewers.

18. 48-Inch Reinforced Concrete Pipe, ASTM C-76, Class III; Bid Item 18:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing and installation of storm sewers of size contained in the bid form including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, and work required for the complete placement of proposed storm sewers.

19. 5-Foot by 3-Foot Reinforced Box Culvert (ASTM C850), Including Slope Paving and Backfill; Bid Item 19:

    Measurement shall be "Per Linear Foot" along the centerline of box sewer without deductions for manholes and inlets, from start to the line terminus. The unit price shall be full compensation for layout, trenching and incidentals thereto, saw-cutting, cement stabilized bedding, boxes and fitting materials, box placement, embedment and backfill to existing surface elevations, connections, trench backfill maintenance, clean-up and all incidental work required for the complete contract not specifically included in another payment item.

20. 7-Foot by 3-Foot Reinforced Box Culvert (ASTM C850), Including Slope Paving and Backfill; Bid Item 20:

    Measurement shall be "Per Linear Foot" along the centerline of box sewer without deductions for manholes and inlets, from start to the line terminus. The unit price shall be full compensation for layout, trenching and incidentals thereto, saw-cutting, cement stabilized bedding, boxes and fitting materials, box placement, required embedment and backfill to existing surface elevations, connections, trench backfill maintenance, clean-up and all incidental work required for the complete contract not specifically included in another payment item.

21. 7-Foot by 4-Foot Reinforced Box Culvert (ASTM C850), Including Slope Paving and Backfill; Bid Item 21:

    Measurement shall be "Per Linear Foot" along the centerline of box sewer without deductions for manholes and inlets, from start to the line terminus. The unit price shall be full compensation for layout, trenching and incidentals thereto, saw-cutting, cement stabilized bedding, boxes and fitting materials, box placement, required embedment and backfill to existing surface elevations, connections, trench backfill maintenance, clean-up and all incidental work required for the complete contract not specifically included in another payment item.

22. Junction Box; Bid Items 22, 23, & 24:

    Measurement shall be "Per Lump Sum." The unit price shall be full compensation for layout, materials, installation of materials necessary, excavation, disposal of waste, seal slabs, access inlet with solid cover, forming, steel placement, placement of concrete, connections to all existing and proposal storm sewer, and appurtenances as shown on the Plans and/or Details, embedment and backfill, finish grading, clean-up, and all appurtenances necessary to complete the work, complete in place.

23. Standard Concrete Storm Manhole; Bid Items 25 and 26:

    Measurement shall be “Per Each”. Payment shall be full compensation for a 4-foot to 6-foot diameter manhole 0 to 8 feet deep, well point watering, per details on plans if necessary, complete in place concrete units including cone, rings, frame and cover, accessories, embedment, and backfill per details shown on Plans.

24. Stabilized Construction Exit, Bid Item 27:

    Measurement shall be “Per Each”. Payment shall be full compensation for supplying the stabilized construction exit, installation of the stabilized construction exit, maintenance of stabilized construction exit and removal of stabilized construction exit, at the end of construction, finish grading, clean-up, and all incidental work.

25. Proposed Swale, Bid Item 28:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for grading the proposed swale specified in the plans, including excavation and embedment as required, backfilling, finish grading, and clean-up.

26. 8-Inch Stabilized Sub-Grade (Manipulation); Bid Item 29:

    Measurement shall be “Per Square Yard”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including salvaging and reshaping the existing base material and subgrade to obtain the required alignment and grade of the proposed pavement; spreading, blading and shaping of any material brought to the project from a stockpile; spreading and blading of the lime/flyash to obtain a uniform application; lime/flyash stabilization; mixing, sprinkling, blading, shaping and rolling of the base material and subgrade to obtain the required Standard Proctor Density and all manipulations, labor, tools, equipment necessary to complete the work.

27. Lime for 8-inch Stabilized Sub-Grade (6% by Dryweight); Bid Item 30:

    Measurement shall be “Per Ton”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies and incidentals necessary to complete the work, including supplying and placing lime to be utilized.

28. 7-Inch Reinforced Concrete Pavement (5.5 Sacks per Cubic Yard); Bid Item 31:

    Measurement shall be “Per Square Yard”. The unit price shall be full compensation for shaping and fine grading the roadbed, including furnishing and applying all water required; for furnishing, loading and all freight and royalty involved; for mixing, placing, finishing and curing all concrete mix; for furnishing all materials for and placing longitudinal, warping, expansion, sawed control and contraction joints , and load transmission units, and joint filler material in proper position; for coating steel bars where required by plans, for furnishing and placing all reinforcing steel; and for all manipulations, labor, equipment, appliances, tools, traffic provisions and incidentals necessary to complete the work.

29. 6-Inch Reinforced Concrete Pavement (5.5 Sacks per Cubic Yard); Bid Item 32:

    Measurement shall be “Per Square Yard”. The unit price shall be full compensation for shaping and fine grading the roadbed, including furnishing and applying all water required; for furnishing, loading and all freight and royalty involved; for mixing, placing, finishing and curing all concrete mix; for furnishing all materials for and placing longitudinal, warping, expansion, sawed control and contraction joints , and load transmission units, and joint filler material in proper position; for coating steel bars where required by plans, for furnishing and placing all reinforcing steel; and for all manipulations, labor, equipment, appliances, tools, traffic provisions and incidentals necessary to complete the work.

30. Concrete Sidewalk, Bid Item 33:

    Measurement shall be “Per Square Yard”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies and incidentals necessary to complete the work, including layout, shaping and compacting the select fill bed, including furnishing and applying all water required; loading and all freight and royalty involved; compact to 95% maximum dry density determined by the standard proctor method (ASTM 0-698) for sidewalk bedding, mixing, placing, finishing with a light broom finish and curing all concrete mix, new sidewalk per detail, adjusting elevation of new sidewalk using compacted sand, forming, reinforcement including dowels, joints, trenching and incidentals thereto, salvaging, transporting, and delivering the material, as required, complete in place.

31. ADA-Handicap Accessible Ramp; Bid Item 34:

    Measurement shall be “Per Each”. The unit price shall be full compensation for shaping, including furnishing and applying all water required; for furnishing, loading and all freight and royalty involved; for mixing, placing, finishing and curing all concrete mix; for furnishing all materials for and placing truncated domes, slopes, doweling into existing ramp, and tie-ins to new or existing sidewalk and pavement, for furnishing and placing all reinforcing steel; and for all manipulations, labor, equipment, appliances, tools, traffic provisions and incidentals necessary to complete the work for a concrete ramp complete in place.

32. Zero Load Slab; Bid Item 35:

    Measurement shall be “Per Each”. The unit price shall be full compensation for shaping and fine grading the zero load slab, including furnishing and applying all water required; for furnishing, loading and all freight and royalty involved; for mixing, placing, finishing and curing all concrete mix; for furnishing all materials for and placing longitudinal, warping, expansion, sawed control and contraction joints, and load transmission units, and joint filler material in proper position; for coating steel bars where required by plans, for furnishing and placing all reinforcing steel; and for all manipulations, labor, equipment, appliances, tools, traffic provisions, and incidentals necessary to complete the work located above required pipelines as specified in details and as directed by Owner’s Representative.

33. 6-Inch Curb; Bid Item 36:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies and incidentals necessary to complete the work, including layout, forming, reinforcement including dowels, supply and installation of concrete, joints, trenching and incidentals thereto, salvaging, transporting, and delivering the material, as required to complete a 6-Inch concrete curb complete in place.

34. Lime for 6-inch Stabilized Sub-Grade (6% by Dryweight); Bid Item 37:

    Measurement shall be “Per Ton”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies and incidentals necessary to complete the work, including supplying and placing lime to be utilized.

35. 6-Inch Stabilized Sub-Grade (Manipulation); Bid Item 38:

    Measurement shall be “Per Square Yard”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies and incidentals necessary to complete the work, including salvaging and reshaping the existing base material and subgrade to obtain the required alignment and grade of the proposed pavement; spreading, blading and shaping of any material brought to the project from a stockpile; spreading and blading of the lime/flyash to obtain a uniform application; lime/flyash stabilization; mixing, sprinkling, blading, shaping and rolling of the base material and subgrade to obtain the required Standard Proctor Density and all manipulations, labor, tools, equipment necessary to complete the work.

36. 3-Inch Asphaltic Concrete Surface; Bid Item 39:

    Measurement shall be “Per Square Yard”. The unit price shall be for furnishing and placement of all materials including prime coat, 8-inch asphalt base grade-2 PG-64, per TXDOT Item 292, 3” thick HMHL surface coarse, type ”D” per TXDOT Item 340, and required equipment and labor. Pavement shall be for repaired areas where removal was required for construction. Saw-cutting and excavation of existing area to be repaired is incidental to this item. Pavement replacement shall not exceed the areas shown on the details. Other damaged areas shall be repaired at Contractor’s expense.

37. Reinforced Concrete Slope Paving (4-Inch Thick), with Toe Walls, Weep Holes, and All Appurtenances; Bid Item 40:

    Measurement shall be “Per Square Yard”. Payment shall be full compensation for furnishing and applying all water required; for furnishing, loading and all freight and royalty involved; for mixing, placing, finishing and curing all concrete mix; for furnishing all materials for and placing all reinforcing steel; and for all manipulations to place a drainage structure.

38. Backslope Interceptor Structure; Bid Item 41:

    Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing and installation of Backslope Interceptor Structure including excavation and embedment as required, backfilling, finish grading, ditch grading to drain, clean-up and all appurtenances including concrete collars per detail, pipe, and work required for the complete placement of proposed Backslope Interceptor Structure as Shown on Plans.

39. Concrete Tie-in; Bid Items 42 & 43:

Measurement shall be “Per Lump Sum”. The unit price shall be full compensation for shaping and fine grading the concrete tie-in, including furnishing and applying all water required; for furnishing, loading and all freight and royalty involved; for mixing, placing, finishing and curing all concrete mix; for furnishing all materials for and placing longitudinal, warping, expansion, sawed control and contraction joints, and load transmission units, and joint filler material in proper position; for coating steel bars where required by plans, for furnishing and placing all reinforcing steel; drilling dowels and epoxy setting in existing pavement, and for all manipulations, labor, equipment, appliances, tools, traffic provisions and incidentals necessary to complete the work.

40. Aluminum Stop Sign, with City of Kemah Street Names on Top of Sign; Bid Item 44:

Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing all labor, tools, equipment, sign post caps, supplies and incidentals necessary to complete the work, including the placement of the sign, per project specifications and TMUTCD as directed by the Owner’s Representative, complete in place.

41. Aluminum Stop Sign; Bid Item 45:

Measurement shall be “Per Each”. The unit price shall be full compensation for furnishing all labor, tools, equipment, sign post caps, supplies and incidentals necessary to complete the work, including the placement of the sign, per TMUTCD as directed by the Owner’s Representative, complete in place.

42. Traffic Control Plan During Construction; Bid Items 46:

Measurement shall be “Per Lump Sum”. The unit price shall be full compensation for furnishing traffic control plan needed for milling, proof rolling, forming and concrete activities as necessary. Roadways are to be open to local traffic. The unit price shall include furnishing, installation, and removal of signs and/or barricades as necessary, and the use of flagmen to assist in traffic control during working hours.

43. Traffic Markings, Prep and Paint, 4” Solid White Striping; Bid Item 47:

Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including the layout, and surface preparation to place a 4” solid white stripe, as directed by the Owner’s Representative, complete in place.

44. Traffic Markings, Prep and Paint, 4” Solid Yellow Striping; Bid Item 48:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including the layout, and surface preparation to place a 4” dashed yellow stripe, as directed by the Owner’s Representative, complete in place.

45. Traffic Markings, Prep and Paint, 24” Wide Stop Bar; Bid Item 49:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including the layout, and surface preparation to place a 24” wide white stop bar stripe, as directed by the Owner’s Representative, complete in place.

46. Turf Establishment, Full Sodding; Bid Item 50:

    Measurement shall be “Per Square Yard”. Payment is to be full compensation for the establishment of turf by sodding in accordance with the Specifications in locations specified by the Owner’s Representative.

47. Turf Establishment, Hydromulch Seeding; Bid Item 51:

    Measurement shall be “Per Acre”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including the establishment of hydromulch seeding in accordance with the specifications and plans, complete in place.

48. Turf Establishment, Dry Application; Bid Item 52:

    Measurement shall be “Per Acre”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies, and incidentals necessary to complete the work, including turf establishment by Dry Application in accordance with the specifications and plans, complete in place.

49. SWPPP Reinforced Filter Fabric Barrier; Bid Item 53:

    Measurement shall be “Per Linear Foot”. The unit price shall be full compensation for supplying the reinforced filter fabric barrier, installation of the barrier, maintenance of barrier with removal of solids build up on upstream side, and removal of barrier at the end of construction, finish grading, clean-up, and all incidental work.

50. Control of Ground Water and Surface Water for Linear Detention Ditch or Walmart Ditch East of Kemah Avenue; Bid Item 54:

    Measurement shall be “Per Linear Foot”. Payment shall be full compensation for supplying all materials and pumping equipment necessary, for the purpose of dewatering at any depth, or to gain access to any installation necessary for the completion of the work in the contract, and all appurtenances for a complete dewatering system, in accordance with the geotechnical report and specifications, complete in place, as directed by the Owner’s Representative.

SUPPLEMENTARY BID ITEMS

51. Waterline, Open Cut, As Directed by Owner’s Representative; Supplemental Bid Item 55:

    Measurement shall be “Per Linear Foot” along centerline of pipe without deductions for valves and fittings, from start to line terminus. The unit price shall be full compensation for layout, clearing and grubbing, trenching and incidentals thereto, bank sand bedding, pipe and fitting materials, steel pipe sections (as applicable), pipe placement, thrust blocking and normal backfill to existing grade, testing, disinfection, connections, joint restraints, trench backfill, maintenance, clean-up, trench dewatering, and all incidental work required for the complete contract not specifically included in another payment item.

52. Extra Depth Bury for Fire Hydrant, As Directed by Owner’s Representative; Supplemental Bid Item 56:

    Measurement is to be "Per Vertical Foot". Unit price shall be full compensation for addition in barrel length over 4-foot of bury fire hydrant, complete with drain gravel and backfill.

53. Laminated Crane Mats 16-Feet X 8-Feet, As Directed by Owner's Representative; Supplemental Bid Item 57:

    Measurement shall be “Per Each”. Payment shall be full compensation for supplying the mats, installation of the mats, maintenance of the mats and removal of the mats, at the end of construction, finish grading, clean-up, and all incidental work.

54. “Extra” Cement Stabilized Sand, 2.0 Sacks per Ton, As Directed by Owner’s Representative; Supplemental Bid Item 58:

    Measurement shall be “Per Ton”. Payment shall be full compensation for supplying all materials to deliver cement stabilized sand, labor to place cement stabilized sand as directed by the Owner’s Representative.

55. “Extra” Class A Concrete, As Directed by Owner’s Representative; Supplemental Bid Item 59

    Measurement shall be “Per Cubic Yard”. Payment shall be full compensation for supplying all materials to deliver class A concrete, labor to place class A concrete as directed by the Owner’s Representative.

56. Select Fill, Compacted per ASTM D698, As Directed by Owner’s Representative; Supplemental Bid Item 60:

    Measurement shall be “Per Cubic Yard”. Payment shall be full compensation for supplying all materials to deliver select fill and follow recommendations based on Geotest Engineering, Inc. Geotechnical Report for Bel Road, labor to place select fill as directed by the Owner’s Representative.

57. Flyash for 8-inch Stabilized Sub-Grade (6% by Dryweight), As Directed by Owner’s Representative; Supplemental Bid Item 61:

    Measurement shall be “Per Ton”. The unit price shall be full compensation for furnishing all labor, tools, equipment, supplies and incidentals necessary to complete the work, including supplying and placing lime to be utilized.

58. 3-Inch Asphaltic Concrete Surface, As Directed by Owner’s Representative; Supplemental Bid Item 62:

    Measurement shall be “Per Square Yard”. The unit price shall be for furnishing and placement of all materials including prime coat, 3” thick HMHL surface coarse, type ”D” per TXDOT Item 340, and required equipment and labor. Pavement shall be for repaired areas where removal was required for construction. Saw-cutting and excavation of existing area to be repaired is incidental to this item. Pavement replacement shall not exceed the areas shown on the details. Other damaged areas shall be repaired at Contractor’s expense.

ALLOWANCE ITEMS

59. Costs Incurred for Removal and Relocation of Overhead Electrical Lines; Allowance Item 63:

    Measurement and Payment to be on a “Lump Sum” basis, up to but not to exceed the amount as indicated on the Bid Form. Payment or partial payment of the lump sum shall be for costs incurred directly from the electrical service provider relocate overhead electrical lines for new road. Installation of all or part of the Allowance Item shall be approved by the Owner’s Representative.

60. Costs Incurred for Removal and Relocation of Fiber Optic Lines; Allowance Item 64:

Measurement and Payment to be on a “Lump Sum” basis, up to but not to exceed the amount as indicated on the Bid Form. Payment or partial payment of the lump sum shall be for costs incurred directly from the electrical service provider lowering fiber optic lines for new road. Installation of all or part of the Allowance Item shall be approved by the Owner’s Representative.

ALTERNATE BID ITEMS

61. Add / Deduct for Hauling Spoils Outside City Limits; Alternate Bid Item 65:

Measurement and Payment to be on a “Lump Sum” basis, for Hauling excavated dirt and spoils outside the City of Kemah city limits in luau of placing excavated fill as shown in plans. This item will be paid or deducted with bid item 3 and is at the discretion of the Owners Representative.

ITEM 1563

CONTROL OF GROUND WATER AND SURFACE WATER

I. GENERAL

A. Section Includes

1. Dewatering, depressurizing, draining, and maintaining trenches, shaft excavations, structural excavations, and foundation beds in a stable condition, and controlling ground water conditions for tunnel excavations.

2. Protecting work against surface runoff and rising flood waters.

3. Disposing of removed water.

B. References

1. ASTM D 698 – Standard Test Methods for Laboratory Compaction of Soils Using Standard Effort (12,400 ft-lb/ft3 (600kN-m/m3))

2. Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA).

3. Federal Register 40 CFR (Vol. 55, No. 222) Part 122, EPA Administered Permit Programs (NPDES), Para.122.26(b)(14) Storm Water Discharge.

C. Definitions

1. Ground water control includes both dewatering and depressurization of water-bearing soil layers.

a. Dewatering includes lowering the water table and intercepting seepage which would otherwise emerge from slopes or bottoms of excavations, or into tunnels and shafts, and disposing of removed water. The intent of dewatering is to increase stability of tunnel excavations and excavated slopes; prevent dislocation of material from slopes or bottoms of excavations; reduce lateral loads on sheeting and bracing; improve excavating and hauling characteristics of excavated material; prevent failure or heaving of the bottom of excavations; and to provide suitable conditions for placement of backfill materials and construction of structures and

other installations.

b. Depressurization includes reduction in piezometric pressure within strata not controlled by dewatering alone, as required to prevent failure or heaving of excavation bottom or instability of tunnel excavations.

2. Excavation drainage includes keeping excavations free of surface and seepage water.

3. Surface drainage includes use of temporary drainage ditches and dikes and installation of temporary culverts and sump pumps with discharge lines as required to protect the Work from any source of surface water.

4. Equipment and instrumentation for monitoring and control of the ground water control system includes piezometers and monitoring wells, and devices, such as flow meters, for observing and recording flow rates.

D. Performance Requirements

1. Conduct subsurface investigations to identify groundwater conditions and to provide parameters for design, installation, and operation of groundwater control systems.

2. Design a ground water control system, compatible with requirements of Federal Regulations 29 CFR Part 1926 and Section 1541 - Trench Safety Systems, to produce the following results:

a. Effectively reduce the hydrostatic pressure affecting:

1. Excavations

2. Tunnel excavation, face stability or seepage into tunnels.

b. Develop a substantially dry and stable subgrade for subsequent construction operations.

c. Preclude damage to adjacent properties, buildings, structures, utilities, installed facilities, and other work.

d. Prevent the loss of fines, seepage, boils, quick condition, or softening of the foundation strata.

e. Maintain stability of sides and bottom of excavations.

3. Provide ground water control systems may include single-stage or

multiple-stage well point systems, eductor and ejector-type systems, deep wells, or combinations of these equipment types.

4. Provide drainage of seepage water and surface water, as well as water from any other source entering the excavation. Excavation drainage may include placement of drainage materials, such as crushed stone and filter fabric, together with sump pumping.

5. Provide ditches, berms, pumps and other methods necessary to divert and drain surface water from excavation and other work areas.

6. Locate ground water control and drainage systems so as not to interfere with utilities, construction operations, adjacent properties, or adjacent water wells.

7. Assume sole responsibility for ground water control systems and for any loss or damage resulting from partial or complete failure of protective measures and any settlement or resultant damage caused by the ground water control operations. Modify ground water control systems or operations if they cause or threaten to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells, or affect potentially contaminated areas. Repair damage caused by ground water control systems or resulting from failure of the system to protect property as required.

8. Provide an adequate number of piezometers installed at the proper locations and depths as required to provide meaningful observations of the conditions affecting the excavation, adjacent structures, and water wells.

9. Provide environmental monitoring wells installed at the proper locations and depths as required to provide adequate observations of hydrostatic conditions and possible contaminant transport from contamination sources into the work area or into the ground water control system.

10. Decommission piezometers and monitoring wells installed during design phase studies and left for Contractors monitoring and use.

E. Environmental Requirements

1. Comply with requirements of agencies having jurisdiction.

2. Comply with the Texas Commission on Environmental Quality regulations and Texas Water Well Drillers Association for development, drilling, and abandonment of wells used in dewatering system.

3. Obtain permit from EPA under the National Pollutant Discharge Elimination System (NPDES), for storm water discharge from construction sites.

4. Obtain all necessary permits from agencies with control over the use of groundwater and matters affecting well installation, water discharge, and use of existing storm drains and natural water sources. Because the review and permitting process may be lengthy, take early action to pursue and submit for the required approvals.

5. Monitor ground water discharge for contamination while performing pumping in the vicinity of potentially contaminated sites.

II. PRODUCTS

A. Equipment and Materials

1. Equipment and materials are at the option of Contractor as necessary to achieve desired results for dewatering. Selected equipment and materials are subject to review of the Engineer through submittals required.

2. Eductors, well points, or deep wells, where used, must be furnished, installed and operated by an experienced contractor regularly engaged in ground water control system design, installation, and operation.

3. All equipment must be in good repair and operating order.

4. Sufficient standby equipment and materials shall be kept available to ensure continuous operation, where required.

III. EXECUTION

A. Ground Water Control

1. Perform a subsurface investigation by borings as necessary to identify water bearing layers, piezometric pressures, and soil parameters for design and installation of ground water control systems. Perform pump tests, if necessary to determine the draw down characteristics of the water bearing layers. The results shall be presented in the Ground Water and Surface Water Control Plan.

2. Provide labor, material, equipment, techniques and methods to lower, control and handle ground water in a manner compatible with construction methods and site conditions. Monitor effectiveness of the installed system

and its effect on adjacent property.

3. Install, operate, and maintain ground water control systems in accordance with the Ground Water and Surface Water Control Plan. Notify Engineer in writing of any changes made to accommodate field conditions and changes to the Work. Provide revised drawings and calculations with such notification.

4. Provide for continuous system operation, including nights, weekends, and holidays. Arrange for appropriate backup if electrical power is primary energy source for dewatering system.

5. Monitor operations to verify that the system lowers ground water piezometric levels at a rate required to maintain a dry excavation resulting in a stable subgrade for prosecution of subsequent operations.

6. Where hydrostatic pressures in confined water bearing layers exist below excavation, depressurize those zones to eliminate risk of uplift or other instability of excavation or installed works. Allowable piezometric elevations shall be defined in the Ground Water and Surface Water Control Plan.

7. Remove ground water control installations.

    a. Remove pumping system components and piping when ground water control is no longer required.

    b. Remove piezometers, including piezometers installed during the design phase investigations and left for Contractor's use, upon completion of testing, in accordance with applicable specifications.

    c. Remove monitoring wells when directed by the Engineer.

    d. Grout abandoned well and piezometer holes. Fill piping that is not removed with cement-bentonite grout or cement-sand grout.

8. During backfilling, dewatering may be reduced to maintain water level a minimum of 5 feet below prevailing level of backfill. However, do not allow that water level to result in uplift pressures in excess of 80 percent of downward pressure produced by weight of structure or backfill in place. Do not allow water levels to rise into cement stabilized sand until at least 48 hour after placement.

9. Provide a uniform diameter for each pipe drain run constructed for dewatering. Remove pipe drain when it has served its purpose. If removal of pipe is impractical, provide grout connections at 50-foot intervals and

fill pipe with cement-bentonite grout or cement-sand grout when pipe is removed from service.

10. Extent of construction ground water control for structures with a permanent perforated underground drainage system may be reduced, such as for units designed to withstand hydrostatic uplift pressure. Provide a means of draining the affected portion of underground system, including standby equipment. Maintain drainage system during operations and remove it when no longer required.

11. Remove system upon completion of construction or when dewatering and control of surface or ground water is no longer required.

12. Compact backfill to not less than 95 percent of the maximum dry density in accordance with ASTM D 698.

13. Foundation Slab: Maintain saturation line at least 3 feet below lowest elevations where concrete is to be placed. Drain foundations in areas where concrete is to be placed before placing reinforcing steel. Keep free from water for 3 days after concrete is placed.

B. Requirements for Eductor, Well Points, or Deep Wells

1. For aboveground piping in ground water control system, include a 12-inch minimum length of clear, transparent piping between every eductor well or well point and discharge header so that discharge from each installation can be visually monitored.

2. Install sufficient piezometers or monitoring wells to show that all trench or shaft excavations in water bearing materials are predrained prior to excavation. Provide separate piezometers for monitoring of dewatering and for monitoring of depressurization. Install piezometers and monitoring wells for tunneling as appropriate for Contractor's selected method of work.

3. Install piezometers or monitoring wells not less than one week in advance of beginning the associated excavation.

4. Dewatering may be omitted for portions of underdrains or other excavations, but only where auger borings and piezometers or monitoring wells show that soil is predrained by an existing system such that the criteria of the ground water control plan are satisfied.

5. Replace installations that produce noticeable amounts of sediments after development.

6. Provide additional ground water control installations, or change the methods, in the event that the installations according to the ground water control plan does not provide satisfactory results based on the performance criteria defined by the plan and by the specification.

C. Excavation Drainage

Contractor may use excavation drainage methods if necessary to achieve well drained conditions. The excavation drainage may consist of a layer of crushed stone and filter fabric, and sump pumping in combination with sufficient wells for ground water control to maintain stable excavation and backfill conditions.

D. Maintenance and Observation

1. Conduct daily maintenance and observation of piezometers or monitoring wells while the ground water control installations or excavation drainage are operating in an area or seepage into tunnel is occurring. Keep system in good condition.

2. Replace damaged and destroyed piezometers or monitoring wells with new piezometers or wells as necessary to meet observation schedule.

3. Cut off piezometers or monitoring wells in excavation areas where piping is exposed, only as necessary to perform observation as excavation proceeds. Continue to maintain and make observations, as specified.

4. Remove and grout piezometers inside or outside the excavation area when ground water control operations are complete. Remove and grout monitoring wells when directed by the Engineer.

E. Monitoring and Recording

1. Monitor and record average flow rate of operation for each deep well, or for each wellpoint or eductor header used in dewatering system. Also monitor and record water level and ground water recovery. These records shall be obtained daily until steady conditions are achieved and twice weekly thereafter.

2. Observe and record elevation of water level daily as long as ground water control system is in operation, and weekly thereafter until the Work is completed or piezometers or wells are removed, except when Engineer determines that more frequent monitoring and recording are required. Comply with Engineer's direction for increased monitoring and recording and take measures as necessary to ensure effective dewatering for intended purpose.

F. Surface Water Control

1. Intercept surface water and divert it away from excavations through use of dikes, ditches, curb walls, pipes, sumps or other approved means. The requirement includes temporary works required to protect adjoining properties from surface drainage caused by construction operations.

2. Divert surface water and seepage water into sumps and pump it into drainage channels or storm drains, when approved by agencies having jurisdiction. Provide settling basins when required by such agencies.

IV. QUALITY CONTROL

A. Submittals

1. Submit a Ground Water and Surface Water Control Plan for review by the Engineer prior to start of any field work. The Plan shall be signed by a Professional Engineer registered in the State of Texas. Submit a plan to include the following:

a. Results of subsurface investigation and description of the extent and characteristics of water bearing layers subject to ground water control.

b. Names of equipment suppliers and installation subcontractors.

c. A description of proposed ground water control systems indicating arrangement, location, depth and capacities of system components, installation details and criteria, and operation and maintenance procedures.

d. A description of proposed monitoring and control system indicating depths and locations of piezometers and monitoring wells, monitoring installation details and criteria, type of equipment and instrumentation with pertinent data and characteristics.

e. A description of proposed filters including types, sizes, capacities and manufacturer's application recommendations.

f. Design calculations demonstrating adequacy of proposed systems for intended applications. Define potential area of influence of ground water control operation near contaminated areas.

g. Operating requirements, including piezometric control elevations

for dewatering and depressurization.

h. Excavation drainage methods including typical drainage layers, sump pump application and other necessary means.

i. Surface water control and drainage installations.

j. Proposed methods and locations for disposing of removed water.

2. Submit the following records upon completed initial installation:

a. Installation and development reports for well points, eductors, and deep wells.

b. Installation reports and baseline readings for piezometers and monitoring wells.

c. Baseline analytical test data of water from monitoring wells.

d. Initial flow rates.

3. Submit the following records on a weekly basis during operations:

a. Records of flow rates and piezometric elevations obtained during monitoring of dewatering and depressurization.

b. Maintenance records for ground water control installations, piezometers, and monitoring wells.

4. Submit the following records at end of work. Decommissioning (abandonment) reports for monitoring wells and piezometers installed by other during the design phase and left for Contractor's monitoring and use.

Std. 2/26/96
Revised 8/20/15

ITEM 2107

TURF ESTABLISHMENT

I. GENERAL

This Item specifies requirements for preparation of the seedbed and planting of turfgrass.

II. MATERIALS

A. Seedbed (Top Soil): Topsoil may be from on-site or imported. All topsoil shall be easily cultivated, relatively free from objectionable material including, gravel, large roots, stumps, wood, brush, debris, hard clods, clay balls, hardpan, refuse or other deleterious materials, and be of reasonably uniform quality.

1. In the case of on-site or nearby source, topsoil is the surface layer of material containing decaying vegetable matter and roots. It is not necessary to strip all soil containing fine hair like roots, only soil containing moderate to heavy root mat.

2. Imported topsoil shall satisfy the following property values:

	TEST PROPERTY	TEST METHOD	UNIT	VALUE	
a.	Soil Reaction	ASTM D4972	pH	6-8	(a)
b.	Passing No. 4 Sieve	ASTM D422	%	95-100	(b)
c.	Sand Size, 2.0-0.05 mm	ASTM D422	%	10-70	(b)
d.	Silt Size, 0.05-0.005 mm	ASTM D422	%	0-40	(b)
e.	Clay Size, <0.005 mm	ASTM D422	%	20-50	(b)
f.	Easily Oxidizable Organic Matter	AASHTO T194	%	2.5-10	(b&c)

NOTES:

a) Determine pH by Method A, pH meter. In the event that the imported topsoil does not satisfy the specified pH range, Contractor shall achieve the desired pH by applying soil amendments as recommended by the certified agronomist's report of soil sample analysis.

b) Dry weight of sample.

c) Soil testing company shall identify test method used if different than listed.

d) Soil tests will be paid for by Owner.

B. Seed: Seed shall be applied in accordance with the following:

SEED PLAN	PLANTING DATES	PLANT SPECIES	PLS RATE (pounds/acre)
1	October 1 to March 31	*"KY-31" Tall Fescue	15
		Hulled Common Bermuda grass	50
		*"Gulf" Annual Ryegrass	15
		Crimson Clover & Inoculant	20
2	April 1 to Sept. 30	*Foxtail Millet	15
		Hulled Common Bermuda grass	60
3	April 1 to Sept. 30	*Foxtail Millet	15
		Hulled Common Bermuda grass	60
		"Pensacola" Bahia grass	15
4	As directed	Hulled Common Bermuda grass	50
5	As directed	Crimson Clover & Inoculant	20

* - Indicates **MAXIMUM APPLICATION RATE ALLOWED**.

NOTES:

a) All planting dates are approximate. Engineer shall determine Seed Plan prior to the start of seeding.

b) Seed Plan 1 shall be used when the average maximum daylight air temperature for the preceding two calendar weeks is less than 75 degrees F.

c) Seeding rate is for "Pure Live Seed (PLS)." Percentage of purity, germination, and dormant seeds, as shown on the seed tag, shall be used to determine actual application rate of bulk material to obtain required amount of PLS per acre.

Pure Live Seed (PLS) = (% Germination + % Dormant seed) x % Purity.

d) Seed Plans 4 and 5 shall be used **only** as directed by the Engineer.

C. Sod

1. Sod shall consist of live, growing Bermudagrass or "Raleigh" St. Augustine grass, as required by the Engineer.

2. Sod shall be dark green and have a healthy vigorous system of dense, thickly matted roots throughout the soil of the sod for a minimum depth of 1-inch (± ¼ inch), excluding top growth and thatch.

3. Sod shall contain no more than 5% noxious weeds and other crop and weed contaminants. Sod shall be free of diseases and harmful insects.

4. Sod shall be cut in uniform panels. Broken panels or panels with torn or uneven ends will not be accepted.

5. Sod panels shall be strong enough to support their own weight and retain size and shape when suspended vertically from a firm grasp on the upper 10% of the panel.

6. Sod shall be harvested, delivered, and installed within a 36 hour period. Sod not planted within this time period shall be inspected and approved by the Engineer prior to installation.

7. Sod which has been allowed to dry out by exposure to the sun and air is unacceptable and shall be rejected.

D. Fertilizer

1. Fertilizer shall be a commercial type conforming to the fertilizer laws in effect as regulated by the Texas Department of Agriculture. A pelleted or granulated fertilizer shall be used which has the specified analysis. The guaranteed analysis represents the percent nitrogen (total N), percent water insoluble nitrogen (where applicable), percent phosphate (citrate soluble P as P_2O_5), and percent potash (water soluble K and K_2O) nutrients as determined by the methods of the Association of Official Analytical Chemists.

2. Contractor shall use a complete fertilizer with an analysis ratio of 3:1:2 (N:P:K), such as 15:5:10, or as directed by the Engineer.

3. Fertilizer shall be applied at a rate of 60 pounds N/acre, which is 400 pounds/acre of 15:5:10.

4. Fertilizer shall be delivered in bags or containers clearly labeled with name and address of the manufacturer, weight, and guaranteed analysis.

Bulk fertilizer shall be acceptable if accompanied by an invoice or label with the name and address of the manufacturer and guaranteed analysis and appropriate means to accurately measure and record weight of fertilizer used.

5. Fertilizer shall be in clean, unopened, and undamaged bags.

6. Fertilizer shall not contain objectionable material which may hinder proper distribution.

7. Fertilizer shall be dry and free-flowing. Caked fertilizer will be rejected.

III. EXECUTION

A. General

1. Turf establishment shall be performed as soon as practical after construction activities, but not later than 21 calendar days. Long term exposure of bare earth will not be permitted. Engineer may stop work on portions, or all, of the project until exposed areas receive the designated turf establishment.

2. Work shall not be performed on areas that are so wet that equipment operation causes tracking and compaction of the ground, or when the soil is in a non-tillable condition.

B. Seedbed

1. Seedbed Installation, Imported

   a. Imported Topsoil: Engineer may direct the Contractor to import topsoil if on-site seedbed is of insufficient quantity or quality.

   b. Topsoil Delivery, Storage and Handling: Topsoil shall be delivered, stockpiled and handled in such a way as to not contaminate the material with other soils or objectionable materials.

   c. Topsoil Excavation (On-Site): Contractor shall strip topsoil specified on the Plans and/or Exhibits or as directed by the Engineer from areas to be excavated or filled and stockpile it for use on the final designated area.

d. Topsoil Placement

1) Prior to placing topsoil, scarify the subgrade to a minimum depth of 4-inches until it is loose and uncompacted to provide bonding of topsoil layer to subgrade.

2) Top elevation of topsoil shall be placed at the design finish grade elevation shown on the Plans and/or Exhibits.

3) Topsoil shall not be spread when excessively wet or dry.

e. Disposal: Contractor shall dispose of excess topsoil only after approval by the Engineer and in accordance with Item 2227 - Waste Material Disposal.

2. Seedbed Preparation, On Site

a. Seedbed is defined as the soil designated to support turf grass and/or sod, approximately 6-inches in depth below the design surface.

b. Irregularities in finished seedbed surfaces shall be corrected to eliminate depressions.

c. Disc, harrow, rake and grade the seedbed until it is free of clods and roots.

d. Roots and woody plants over 1-inch diameter shall be removed.

e. Final surface shall be left in a roughened condition. Imprints from the equipment shall be left horizontally on the slope.

f. Surface crusting of the seedbed after rainfall or compaction, but prior to turf establishment, shall be broken up by disking, harrowing, or raking.

g. For areas receiving sod, grade the seedbed adjacent to existing turf, pavement, etc., to permit sod to be flush with adjacent surfaces.

h. Prepared seedbeds shall be protected from damage by pedestrian or vehicular traffic.

i. Prepared seedbeds shall be inspected and accepted by the Engineer prior to turf establishment.

C. Seeding Methods: Method of planting shall be as noted on the Bid Sheets or Plans and/or Exhibits, or as directed by the Engineer.

1. Dry Application

a. Fertilizer shall be spread evenly and uniformly and incorporated (disked, raked, or harrowed) into the seedbed prior to seeding.

b. Seeding

1) Plant seed with a broadcast seeder or a culti-packer seeder. Grass seed shall be planted no deeper than ¼-inch, and the distance between rows shall be 12-inches or less. Distribute seed uniformly.

2) Roll the planted seedbed with a culti-packer or rake immediately after seeding and prior to applying mulch cover.

3) Seed may be broadcast by hand for small areas or areas inaccessible to seeding equipment, as approved by the Engineer. Areas seeded by hand shall be rolled or lightly compacted, if possible.

c. Mulching

1) Immediately after application of seed, straw or hay mulch shall be applied to all seeded areas with a slope steeper than 6H:1V (Horizontal:Vertical).

2) Straw or hay mulch shall be applied at a rate of 2,500 pounds (dry weight) per acre.

3) The straw or hay mulch must be secured with hydromulch or other approved methods.

a) Hydromulch, consisting of an homogeneous aqueous mixture of recycled paper fiber, water, and tackifier, shall be applied to achieve a rate of 1,000 pounds of paper fiber mulch per acre over the straw mulch. Guar gum tackifier shall be applied at a minimum rate of 50 pounds (dry weight) per acre.

b) Application rate for other tackifier/soil binder compounds shall be in accordance with

manufacturer recommendations and approved by the Engineer.

d. Watering: After mulching, water the seedbed until the surface is uniformly moist to an approximate depth of ½-inch. Excessive watering pressure or quantity which would cause washing of mulch and seed, erosion, or rilling shall not be allowed.

2. Hydroseeding With Mulch

a. Hydroseeding with mulch is the application of an homogeneous aqueous mixture of seed, water, fertilizer, dye, wood fiber mulch, and tackifier/soil binder to the seedbed.

b. Fertilizer shall be added to the aqueous mixture no more than 30 minutes prior to application to prevent damage to the seed. Fertilizer shall be completely water soluble.

c. Guar gum tackifier shall be applied at a minimum rate of 50 pounds (dry weight) per acre.

d. Wood fiber mulch shall be applied at a rate of 2,000 pounds (dry weight) per acre.

e. Application rate for other tackifier/soil binder compounds shall be in accordance with manufacturer's recommendations and approved by the Engineer.

3. Overseeding

a. Overseeding is the application of an homogeneous aqueous mixture containing water, seed (per Seed Plan 4 or 5), and fertilizer to an area with existing vegetation.

b. At the direction of the Engineer, site shall be mowed prior to overseeding.

c. Soil surface shall be lightly disked no more than 1-inch deep.

d. Fertilizer shall be added to the aqueous mixture no more than 30 minutes prior to application to prevent damage to the seed. Fertilizer shall be completely water soluble.

e. Area shall be rolled with a culti-packer, or lightly harrowed or raked to cover seed with a ¼-inch of soil.

D. Sodding

1. Sod shall be placed in areas as shown on the Plans and/or Exhibits or as directed by the Engineer.

2. Fertilizer shall be spread evenly and uniformly and incorporated (disked, raked, or harrowed) into the seedbed prior to placing sod.

3. Prepared seedbed shall be lightly watered immediately prior to placing sod, as required.

4. Sod panels shall be placed tightly against each other in rows.

5. Lateral joints shall be staggered. Care shall be exercised to ensure the sod is not stretched or overlapped and that all joints are butted tightly with no spaces between strips.

6. Tamp or roll the sod to ensure good contact with the seedbed.

7. Lightly water sod during installation to prevent excessive moisture loss.

8. Immediately after installation of sod, remove extraneous clumps of sod or soil on sod, rake and wash off plant remnants on sod or adjacent pavements.

IV. QUALITY ASSURANCE

A. Engineer shall accept turf establishment when specified area is complete with an established growth on soil stabilized turf.

B. Contractor shall be responsible for repairing areas damaged until the turf establishment is accepted by the Engineer. Repairs include, but not limited to, damage due to erosion, rilling, traffic, or other causes.

C. Contractor shall replace all dead or dying sod panels.

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Revised 10/1/02

ITEM 2274

CONCRETE SLOPE PAVING

I. GENERAL

A. This Item shall consist of excavation or back fill of the drainage channel, bayou, or ditch to the lines and grades established on the seams, disposal or supply of the material, and the construction of the reinforced concrete slope paving.

B. Related Work (if utilized in this project)

1. Item 3200 - Concrete Reinforcement

2. Item 3310 - Concrete

II. MATERIALS

A. Concrete

Item 3310 - Concrete: Class as shown on Plans and/or Exhibits or in Proposal.

B. Reinforcing Steel

Item 3200 - Concrete Reinforcement: Bar size and type as shown on Plans and/or Exhibits.

C. Expansion Joint Material

To be in accordance with section and location as shown on Plans and/or Exhibits.

1. Fillers

a. Pre-Molded

1) Asphalt filler board per ASTM D994-71.

2) Pre-Molded joint material per ASTM D1751-73

b. Wood

1) Redwood: Boards shall be heartwood and shall be free from sapwood, knots, clustered birdseye, checks & splits. Maximum weight per cubic foot when oven dried to constant weight to be 30 pounds.

2) Other Woods: Cypress, Gum Southern Yellow Pine, or Douglas Fir Timber may be used with prior approval of the Engineer. With the exception of Cypress, all boards shall have a creosote or penta chlorophenol treatment of 6 pounds per cubic foot. Maximum weight per cubic foot when oven dried shall not be greater than 30 pounds per cubic foot.

D. Forms

1. Pavement

a. Wood Forms: Construction to be 2x material, free from warps, bends, and kinks, and sufficiently true to provide a straight edge on concrete. Use precautionary methods to prevent leakage of mortar through or under side forms. Top of each form section, when tested with a straight edge, to conform to the requirements specified for the surface of completed pavement.

b. Metal Forms: Use metal forms of approved shape and section. Preferred depth of form to be equal thickness of pavement. Forms with depths greater or less than 1-inch of pavement thickness may be used. Forms with less depth than pavement thickness to be brought to required depth by securely attaching wooden planks of approved section and size to bottom of form. Use form section at least 10-feet in length, and provide for staking in position with not less than 3 pins. Use forms of adequate strength to withstand machine loads without visible springing or settlement. Use forms free from warps, bends and kinks, and sufficiently true to provide a straight edge on concrete. Top of each form section, when tested with a straight edge to conform to the requirements specified for the surface of the completed pavement. Use flexible or curved forms of wood or metal of proper radius for curves of 200-foot radius or less.

F. Materials for Curing

1. Burlap: Mats to be in good condition, clean, and free of any substance which would have deleterious effect on concrete.

2. Cotton Mats: Mats to be in good, clean, and free of any substance which would have deleterious effect on concrete.

3. Waterproof Paper: Per ASTM C171-69

4. Membrane Curing Compounds: Conform to ASTM C309-74.

5. White Polyethylene Sheeting: Sheet having thickness not less than 4 mils (.004-inch).

G. Grouting

1. Material and mixtures for grouting curb dowels.

   a. Proportion by weight.

   b. One part Portland cement, Type I or Type II.

   c. One part clean, sharp sand.

   d. Seven-tenths part non-shrinking grout aggregate.

   e. No more than 5½ gals. water per sack cement.

2. Other: Use mixture by weight of one part Portland cement and two parts sand for general purposes. If space to be grouted is less than 1-inch and is impossible to tamp grout, use one-to-one mix. Where space to be filled with grout is large, use original concrete mixture. Use stiff mixture for grout to be tamped, produced by prolonged mixing. To obtain stiff grout, mix mortar using amount of water required to thoroughly mix ingredients, then continue mixing without additional water until grout is stiff enough to be compacted by tamping when placed. For grouting blockouts for embedded pipes and similar items, use grout to which 5 pounds of non-shrinking grout aggregate per sack of cement has been added.

III. EXECUTION

A. Subgrade

Excavate, shape, and compact subgrade to grades, sections, and densities on Plans and/or Exhibits. Maintain drainage at all times. Test subgrade section with an approved template, operated and maintained by Contractor.

B. Wood and Steel Forms

1. Setting: Set forms on compacted subgrade, cut true to grade on that entire form section supported by subgrade. Stake metal form sections with at least 3 pins per section with a pin on each side of every joint. Adequately stake wood form sections to prevent bows in form and to keep form sections to grade. Joint form sections to prevent displacement.

   Clean and oil form with form oil each time they are used. Set forms to line and grade for at least 200-feet ahead of mixer. Check conformity of alignment and grade immediately prior to placing concrete.

2. Removal: Leave forms in place for at least 12 hours. Remove forms without injury to concrete. Immediately repair damage resulting from form removal. Point up all exposed honeycombed areas with approved mortar. As soon as curb forms are removed, backfill behind curbs with approved material and compact to 90 percent Standard Proctor density.

C. Slip Forms

Equipment to be provided with traveling side forms of sufficient dimensions, shape, and strength to support concrete laterally for sufficient length of time during placement to produce pavement of required cross-section. Concrete to be distributed uniformly into final position by slip form paver, and horizontal deviation in alignment of edges not to exceed 1¼-inches from established alignment.

D. Concrete Placing and Handling - Wood and Steel Forms

1. Deposit concrete on subgrade in such manner as to require as little rehandling as possible. Use shovels for hand spreading of concrete. Use of rakes will not be permitted. Place concrete in a rapid, continuous operation.

2. Consolidate all concrete placed for pavement by an approved mechanical vibratory unit designed to vibrate the concrete internally. A vibratory member equipped with synchronized vibratory units to extend across

pavement practically to, but not to come in contact with, side forms. Space separate vibratory units at sufficiently close intervals to provide uniform vibration and consolidation to entire width of pavement. Mount mechanically operated with vibrators in such manner as not to come in contact with forms or reinforcement and not to interfere with transverse or longitudinal joints.

3. Furnish hand-manipulated mechanical vibrators in number required for provision of proper consolidation of concrete along forms, at joints, and in areas not covered by mechanically controlled vibrators.

E. Concrete Placing and Handling - Slip Forms

1. Concrete, for full paving width, to be effectively consolidated by internal vibration, with transverse vibrating units, at with a series of longitudinal vibrating units. Internal vibration to mean vibration by means of vibrating units loaded within the specified thickness of pavements section and at a minimum distance ahead of screed equal to pavement thickness.

2. When concrete is being placed adjacent to an existing pavement, that part of the equipment which is supported on the existing pavement to be equipped with protective pads on crawler tracks or rubber-tired wheels, offset to run a sufficient distant from edge of pavement to avoid breaking or cracking pavement edge.

3. After concrete has been given a preliminary finish by finishing devices incorporated in the slip-form paving equipment, surface of the fresh concrete to be checked with a straightedge to tolerances and finish required.

F. Concrete Placing and Handling - Wood or Metal Formed Curb

Curbing may be poured monolithic with pavement or may be added to pavement surface at a later time. Place curb dowel bars while pavement is plastic. Provide expansion joint and contraction in curb opposite each expansion joint or contraction joint in pavement and at each curb inlet. Use same expansion joint material as used in pavement. Cut weakened plane joints with an approved grooving tool opposite each joint in pavement, as required. Apply finish coat of mortar on exposed surfaces of curb. Mortar composed of one part Portland cement and two parts sand. Apply mortar with a template or “mule” conforming to plan curb dimensions. Steel trowel finish all exposed surfaces of curb and brush to a smooth, uniform surface.

G. Concrete Placing and Handling - Machine-Laid Curb

1. Lay curbs by an extrusion-type machine. Immediately prior to placing of the curb, thoroughly clean the previously approved foundation.

2. Grade and alignment for top of curb to be as shown on Plans and/or Exhibits. The forming tube of the extrusion machine to be readily adjustable vertically curing the forward motion of the machine, to provide required variable height of curb necessary to conform to the established grade line.

3. Feed concrete into machine in such a manner and at such consistency that the finished curb will present a well-compacted mass with a surface free from voids and honeycomb and tree to established shape, line, and grade.

4. Perform any additional surface finishings specified and/or required immediately after extrusion. Construct joints as specified or as shown on Plans and/or Exhibits.

H. Finishing

1. Concrete slope pavement may be finished by machine or by hand. If by machine, see Paragraph F above. If finished by hand, thoroughly vibrate concrete around reinforcement and embedded fixtures. Tamp concrete with a tamping template made of 4-inch by 10-inch lumber, or equivalent metal section, at least 2-feet longer than width of pavement, to conform to crown section of pavement. If wood tamping template is used, it is to have a steel face not less than d-inch in thickness. Strike off concrete with a strike-off screed made of 40-inch by 10-inch lumber or equivalent metal section at least 2-feet longer than width of pavement and conforming to crown section of pavement. Move strike-off screed forward with combined transverse and longitudinal motion in direction work is progressing, maintaining screed in contact with form, and maintaining slight excess of materials in front of cutting edge. Use a longitudinal float not less 10-feet in length to level surface. Prior to concrete becoming non-plastic, belt pavement surface with canvas or canvas-rubber composition belt of two- or four-ply construction not less than 6-inches nor more than 10-inches wide, and at least 2-feet longer than width of pavement. Use short transverse strokes and rapid advance longitudinally to produce uniform surface of gritty texture.

2. Slip Form: If this method of construction is used, all requirements of this Technical Specification in regard to subgrade and pavement tolerances, pavement depth, alignment, consolidation, finishing, workmanship, etc. to be met. Equip “Slip Form Paver” with longitudinal triangular finishing

float adjustable to crown and grade. Extend float across the pavement almost to the side form and/or the edge of slab.

I. Surface Tests

1. Test entire surface before initial set and correct irregularities or undulations to bring surface within requirements of following test, then finish.

2. Place approved 10-foot straight edge parallel to center of roadway so as to bridge any depressions and touch all high spots. Ordinates measured from face of straight edge to surface of pavement not to exceed 1/16-inch per foot from nearest point of contact, and in any case maximum ordinate to 10-foot straight edge to be no greater than c-inch.

J. Joints

Place joints of types shown on Plans and/or Exhibits at required locations and at spacing shown.

1. Construction Joints: Place transverse construction joint when necessary to stop concrete placement for period of more than 30 minutes. Length of slab to be not less than 10-feet from nearest joint of complete slab. If closer than 10-feet, Contractor to remove concrete from between forms back to nearest normal joint and place construction joint at bulkhead. Use longitudinal keyed construction joints at pavement edges where required.

2. Expansion Joints: Place expansion joint as shown on Plans and/or Exhibits. Do not use boards less than 6-feet in length. When pavement is 24-feet or less in width, use not more than two length of board. Secure pieces to form straight joint. Shape board filler accurately to cross-section of concrete slab.

K. Protection and Curing

Following requirements apply on alternate methods of curing. Cover concrete with burlap or cotton mats, when concrete has hardened sufficiently to prevent marring of surfaces, and keep wet continuously for 72 hours. Apply curing compound immediately after free water has disappeared and at rate specified. Keep polyethylene sheets or membrane curing film in place and intact for five days, in lieu of 72 hours when curing. Cure concrete curbs and gutters to prevent checking while setting. After each day's run, barricade street. No wheeling will be allowed on concrete during curing period. Do not open pavement to traffic until concrete is at least 7 days old. Clean off pavement and seal joints before opening pavement to any traffic.

L. Penalty for Deficient Concrete Pavement Thickness

It is the intent of this specification that the concrete slope pavement be constructed in strict conformity with the thickness and typical sections shown on the Plans and/or Exhibits. Where any such pavement is found not so constructed, the following rules relative to adjustment of payment for acceptable concrete slop payment and to the replacement of faulty concrete slope pavement shall govern.

1. Pavement Thickness: The concrete slope pavement will be core drilled by a Testing Lab prior to final acceptance. The thickness of the pavement will be determined by measurement of the cores. At such points as the Engineer may select in each Unit, one core will be taken for each 1000 square yards of concrete pavement, or fraction thereof, in the Unit. If the core, so taken, is not deficient more than 0.25-inch, full payment shall be made and the cores will be paid for by the Owner. If the core is deficient in thickness by more than 0.25-inch but not more than 0.5-inch, two additional cores will be taken from the area represented and the average of the three cores determined. If the average measurement of these three cores is not deficient more than 0.25-inch from the plan thickness, full payment will be made. If the average thickness of the three cores is deficient more than 0.25-inch, the sections having such deficiencies shall be removed and the concrete slope pavement shall be replaced to the specified plan depth.

2. No additional payment over Contract unit price to be made for pavement of thickness exceeding that required by Plans and/or Exhibits.

3. Additional cores required to determine areas of deficient thickness to be paid for by Contractor.

Section 02336

LIME STABILIZED SUBGRADE

PART 1 G E N E R A L

1.01 SECTION INCLUDES

A. Foundation course of lime stabilized subgrade material.

1. Application of lime slurry to subgrade.

2. Mixing, compaction, and curing of lime slurry, water, and subgrade into a stabilized foundation.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. Measurement and payment for lime stabilized subgrade is on a square yard basis compacted in place to proper density. Separate measurement will be made for each required thickness of subgrade course.

   a. Limits of measurement shall match actual pavement replaced, but no greater than maximum pavement replacement limits shown on Drawings. Limits for measurement will be extended to include installed lime stabilized subgrade material that extends 2 foot beyond outside edge of pavement to be replaced, except where proposed pavement section shares common longitudinal or transverse edge with existing pavement section. No payment will be made for lime stabilized subgrade in areas beyond these limits.

   b. Limits of measurement and payment shall match pavement replacement limits shown on Drawings, except as noted in Paragraph 1.02.A.1.a, or as approved by Project Manager.

2. Measurement and payment for lime is by ton of 2000 pounds dry weight basis. Calculate weight of dry solids for lime slurry based on percentage by dry weight solids.

3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for Work in this Section is included in total Stipulated Price.

1.03 DEFINITION

B. Moist Cure: Curing soil and lime to obtain optimum hydration.

C. 1000-Foot Roadway Section: 1000 feet per lane width or approximately 500 square yards of compacted subgrade for other than full-lane-width roadway sections.

1.04 REFERENCES

A. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3).

B. ASTM D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

C. ASTM D 4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

D. TxDOT Tex-101-E (Part III) - Preparation of Soil and Flexible Base Material for Testing.

E. TxDOT Tex-140-E - Measuring Thickness of Pavement Layer.

F. TxDOT Tex-600-J - Sampling and Testing Hydrated Lime, Quicklime, and Commercial Lime Slurry.

1.05 SUBMITTALS

A. Conform to requirements of Section 01330 - Submittal Procedures.

B. Submit certification that hydrated lime, quicklime, or commercial lime slurry complies with specifications.

C. Submit weight tickets, certified by supplier, with each bulk delivery of lime to work site.

1.06 DELIVERY, STORAGE AND HANDLING

A. Bagged lime shall bear manufacturer's name, product identification, and certified weight. Bags varying more than 5 percent of certified weight may be rejected; average weight of 50 random bags in each shipment shall not be less than certified weight.

B. Store lime in weatherproof enclosures. Protect lime from ground dampness.

PART 2 P R O D U C T S

2.01 WATER

A. Use clean, clear water, free from oil, acids, alkali, or vegetation.

2.02 LIME

A. Type A - Hydrated Lime: Dry material consisting essentially of calcium hydroxide or mixture of calcium hydroxide and an allowable percentage of calcium oxide as listed in chemical composition chart.

B. Type B - Commercial Lime Slurry: Liquid mixture consisting essentially of lime solids and water in slurry form. Water or liquid portion shall not contain dissolved material in sufficient quantity to be injurious or objectionable for purpose intended.

C. Type C - Quicklime: Dry material consisting essentially of calcium oxide. Furnish quicklime in either of the following grades:

1. Grade DS: Pebble quicklime of gradation suitable for use in preparation of slurry for wet placing.

2. Grade S: Finely-graded quicklime for use in preparation of slurry for wet placing. Donor use grade S quicklime for dry placing.

D. Conform to the following requirements:

CHEMICAL COMPOSITION	TYPE		
	A	B	C
Active lime content, % by weight $Ca(OH)_2$+CaO	90.0 min[1]	87.0 min[2]	-
Unhydrated lime content, % by weight CaO	5.0 max	-	87.0 min
Free water content, % by weight H_2O :	5.0 max	-	-
SIZING			
Wet Sieve, as % by weight residue retained:			
No. 6	0.2 max	0.2 max[2]	8.0 max[3]
No. 30	4.0 max	4.0 max[2]	-
Dry sieve, as % by weight residue retained:			
1-inch	-	-	0.0
1/2-inch	-	-	10.0 max

Notes:
1. Maximum 5.0% by weight CaO shall be allowed in determining total active lime content.
2. Maximum solids content of slurry.
3. Total active lime content, as CaO, in material retained on No. 6 sieve shall not exceed 2.0% by weight of original Type C lime.

E. Deliver lime slurry to job site as commercial lime, or prepare at job site by using hydrated lime or quicklime. Provide slurry free of liquids other than water and of consistency that can be handled and uniformly applied without difficulty.

F. Lime containing magnesium hydroxide is prohibited.

2.03 SOIL

A. Soil to receive lime treatment may include borrow or existing subgrade material, existing pavement structure, or combination of all three. Where existing pavement or base material is encountered, pulverized or scarify material so that 100 percent of sampled material passes 2-inch sieve.

PART 3 E X E C U T I O N

3.01 EXAMINATION

A. Verify compacted subgrade will support imposed loads.

B. Verify subgrade lines and grades.

3.02 PREPARATION

A. Complete backfill of utilities prior to stabilization.

B. Cut material to bottom of subgrade using an approved cutting and pulverizing machine meeting following requirements:

1. Cutters accurately provide smooth surface over entire width of cut to plane of secondary grade.

2. Provide cut to depth as specified or shown in the Drawings.

C. Alternatively, scarify or excavate to bottom of stabilized subgrade. Remove material or windrow to expose secondary grade. Obtain uniform stability.

D. Correct wet or unstable material below secondary grade by scarifying, adding lime, and compacting as directed by Project Manager.

E. Pulverize existing material so that 100 percent passes a 1-3/4-inch sieve.

3.03 LIME SLURRY APPLICATION

A. Apply slurry with distributor truck equipped with an agitator to keep lime and water in consistent mixture. Make successive passes over measured section of roadway to attain proper moisture and lime content. Limit spreading to an area where preliminary mixing operations can be completed on same working day.

B. Minimum lime content shall be 5 percent of dry unit weight of subgrade as determined by ASTM D 698

3.04 PRELIMINARY MIXING

A. Use approved single-pass or multiple-pass rotary speed mixers to mix soil, lime, and water to required depth. Obtain homogeneous friable mixture free of clods and lumps.

B. Shape mixed subgrade to final lines and grades.

C. Eliminate following operations and final mixing if pulverization requirements of Paragraph 3.05C can be met during preliminary mixing:

1. Seal subgrade as precaution against heavy rainfall by rolling lightly with light pneumatic rollers.

2. Cure soil lime material for 24 to 72 hours or as required to obtain optimum hydration. Keep subgrade moist during cure.

3.05 FINAL MIXING

A. Use approved single-pass or multiple-pass rotary speed mixers to uniformly mix cured soil and lime to required depth.

B. Add water to bring moisture content of soil mixture to optimum or above.

C. Mix and pulverize until all material passes 13/4-inch sieve; minimum of 85 percent, excluding non-slacking fractions, passes 3/4-inch sieve; and minimum of 60 percent excluding non-slacking fractions passes No. 4 sieve. Test according to TxDOT Tex-101-E, Part III using dry method.

D. Shape mixed subgrade to final lines and grades.

E. Do not expose hydrated lime to open air for 6 hours or more during interval between application and mixing. Avoid excessive hydrated lime loss due to washing or blowing.

3.06 COMPACTION

A. Aerate or sprinkle to attain optimum moisture content to 3 percent above optimum, as determined by ASTM D 698 on material sample from roadway after final mix with lime.

B. Start compaction immediately after final mixing.

C. Spread and compact in two or more equal layers where total compacted thickness is greater than equipment manufacturer’s recommended range of mixing and compaction.

D. Compact with approved heavy pneumatic or vibrating rollers, or combination of tamping rollers and light pneumatic rollers. Begin compaction at bottom and continue until entire depth is uniformly compacted.

E. Do not allow stabilized subgrade to mix with underlying material. Correct irregularities or weak spots immediately by replacing material and recompacting.

F. Compact subgrade to minimum density of 95 percent of maximum dry density, according to ASTM D 698, at moisture content of optimum to 3 percent above optimum, unless otherwise indicated on Drawings:

G. Seal with approved light pneumatic tired rollers. Prevent surface hair line cracking. Rework and recompact at areas where hairline cracking develops.

3.07 CURING

A. Moist cure for minimum of 3 days before placing base or surface course, or opening to traffic. Subgrade may be opened to traffic after 2 days when adequate strength has been attained to prevent damage. Restrict traffic to light pneumatic rollers or vehicles weighing less than 10 tons.

B. Keep subgrade surface damp by sprinkling. Roll with light pneumatic roller to keep surface knit together.

C. Place base or surface within 14 days after final mixing and compaction. Restart compaction and moisture content of base material when time is exceeded.

3.08 TOLERANCES

A. Completed surface: smooth and conforming to typical section and established lines and grades.

B. Top of compacted surface: Plus or minus 1/4 inch in cross section or in 16-foot length.

C. Depth of lime stabilization shall be plus or minus one inch of specified depth for each 1000-foot roadway section.

3.09 FIELD QUALITY CONTROL

A. Testing will be performed under provisions of Section 01454 - Testing Laboratory Services.

B. Test soils, lime, and mixtures as follows:

1. Tests and analysis of soil materials will be performed in accordance with ASTM D 4318, using the wet preparation method.

2. Sampling and testing of lime slurry shall be in accordance with TxDOT Tex-600-J, except using a lime slurry cup.

3. Sample mixtures of hydrated lime or quicklime in slurry form will be tested to establish compliance with specifications.

4. Moisture-density relationship will be established on material sampled from roadway, after stabilization with lime and final mixing, in accordance with ASTM 698, Moist preparation Method.

C. In-place depth will be evaluated for each 1000-foot roadway section and determined in accordance with TxDOT Tex-140-E in hand excavated holes. For each 1000-foot section, 3 phenolphthalein tests will be performed. Average stabilization depth for 1000-foot section will be based on average depth for three tests.

D. Perform compaction testing in accordance with ASTM D 2922. Three tests will be performed for each 1000-foot roadway section.

E. Pulverization analysis will be performed as required by Paragraph 3.05C on material sampled during mixing of each production area. Three tests will be performed per 1000-foot roadway section or a minimum of once daily.

3.10 REWORK OF FAILED SECTIONS

A. Rework sections that do not meet specified thickness.

B. Perform the following steps when more than 72 hours have lapsed since completion of compaction.

1. Moist cure for minimum of 3 days after compaction to required density.

2. Add lime at rate of 25 percent of specified rate at no additional cost to City.

3. Moisture density test of reworked material must be completed by laboratory before field compaction testing can be completed.

3.11 PROTECTION

A. Maintain stabilized subgrade to lines and grades and in good condition until placement of base or surface course. Protect asphalt membrane from being picked up by traffic.

B. Repair defects immediately by replacing material to full depth.

END OF SECTION

Std. 5/19/87
Revised 5/10/16

ITEM 2555

WATER PIPING

I. GENERAL

A. Scope: This section specifies furnishing and installing new water mains including valves, valve boxes, flush valves, blocking, fittings, and other appurtenances.

B. Related Work (if utilized in this project)

1. Item 2221 - Excavation, Trenching and Backfilling for Utilities

2. Item 9901 - Painting and Coating

II. MATERIALS

A. Ductile Iron Pipe

1. Furnish ductile iron pipe manufactured in accordance with AWWA C-151/A21.50. Pipe to be of American manufacture. Ductile iron pipe to be of thickness class per Plans and/or Exhibits in accordance with AWWA C-150/A21.51. Manufacturer to furnish Certification of Compliance.

2. Unless shown otherwise on Plans and/or Exhibits or required herein, push-on joints to be considered standard.

3. Where Plans and/or Exhibits or specifications indicate cast iron fittings or ductile-iron fittings, the terms are to be considered interchangeable. Such fittings are to conform to AWWA C-110 for 200 psi working pressure. Joints shall be consistent with intended use as shown on drawing. Where no joint type is indicated in cast iron pipe runs, push-on is to be considered standard. Manufacturer to provide Certification of Compliance, "restrained" mechanical joints, to have welded ring on spigot, or other approved design.

4. "Flanged and flanged" and "flanged and plain end" pipe shall be in conformity with AWWA C-115.

5. All C.I. and D.I. pipe and fittings shall be furnished with cement-mortar

lining conforming to AWWA C-104-08, standard thickness.

6. All material to be approved by Underwriters' Laboratory and accepted without penalty by the Texas Fire Insurance Commission.

B. Steel Pipe

1. Provide steel pipe intended for use as underground carrier pipe, sizes 4-inches through 24-inches, conforming with AWWA C-200-12; 150 psi working pressure; cement-mortar lining per AWWA C-205-12.

2. Minimum wall thicknesses for carrier pipe must meet the following criteria:

Nominal Pipe Size (Inches)	**Outside Diameter (Inches)**	**Minimum Wall Thickness (Inches)**	**LBS Per Lineal Foot, Uncoated**
4	4.500	0.250	11.35
6	6.625	0.280	18.97
8	9.625	0.322	28.55
10	10.750	0.365	40.48
12	12.750	0.375	59.56
16	16.000	0.375	62.58
18	18.000	0.375	70.59
20	20.000	0.375	78.60
24	24.000	0.375	94.62

3. Furnish pipe with beveled ends for field butt welding.

4. Coat the pipe exterior in accordance with Item 9901 - Painting and Coating.

5. Furnish new and unused pipe manufactured in compliance with Underwriters' Laboratories, Inc. specifications, Steel Pipe Lines for Underground Water Service. Pipe must be acceptable, without penalty, to the Texas Fire Insurance Commission for use in water works distribution systems.

6. Where small diameter steel pipe is required, it is to be ASTM A-53 or 120, Schedule 40, galvanized.

C. Pre-tensioned Concrete Cylinder Pipe

1. Pipe scheduled for underground water main unless another material

specifically named, is to be reinforced concrete water pipe-steel cylinder type, pre-tensioned, conforming to AWWA C-303-08, unless shown otherwise on Plans and/or Exhibits. The concrete cylinder pipe is to also be approved by Underwriters' Laboratory and accepted by the State Fire Insurance Commission without penalty.

2. The manufacturer will be supplied all necessary data per Sec. 1.4 of said specification. He shall promptly submit, per Sec. 1.6 (C-303-08) detailed Plans and/or Exhibits and schedules and tabulated layout schedule. Each piece shall be marked thereon with an identification number, and each piece subsequently manufactured shall be so marked per Sec. 1.7 (C303-08).

3. Quality control test reports on steel, cylinder assembly, and concrete shall be submitted to the Owner through the Engineer. An Affidavit of Compliance shall be similarly provided.

4. The design working pressure of the pipe is to be 150 psi, the design transient pressure is to be 100 psi. The external loading condition is to be; Live Load-AASHO H20, Dead Load-30" cover to 15-feet saturated clay backfill; bedding as shown on details and described herein. Pipe to be considered rigid.

5. Joints, except where specifically otherwise designated to be compressed rubber "O" Ring" type. In general, thrust is to be transferred to earth by skin friction through tack-welded joints. All vertical fittings to be welded, as well as horizontal bends not noted on Plans and/or Exhibits as requiring blocking. Manufacturer to submit detail and incorporate in layout.

6. Flanges on steel cylinder pipe to conform to AWWA C-207-07, Class E, or ASA Series 150, flat-faced.

7. Spigot ends to match C.I. fittings to have O.D. matching cast iron.

8. All joints to be externally mortared in accordance with manufacturer's recommendations. All joints on 18-inch and larger to be internally mortared in accordance with manufacturer's recommendations.

9. Tapped or special connections to be mortared, no exposed metal pipe.

D. Polyvinyl-Chloride Pipe

1. PVC pressure pipe, 4-inch and larger diameter, to conform to AWWA C-900-07, or AWWA C-905-10, minimum 150 psi rated, elastomeric ring joints unless otherwise required.

2. PVC Pressure Pipe, 3-inch and smaller, is to conform to ASTM D-1785, and ASTM D-2241, Class 160. Class 160 in 1½-inch, 2-inch, and 3-inch diameters to have elastomeric seal joints, ASTM D- 3139. Smaller pipe to be solvent welded.

E. Copper Tubing

1. Provide Type K copper tubing for underground service where required in ¾-inch, 1-inch, 1½- inch, and 2-inch sizes. The tubing to be Type K, soft-annealed, with proper bending temper.

2. Tubing must meet requirements of ASTM B-88 and Federal Specification WW-T-799.

F. Polyethylene Pipe

1. Polyethylene pipe and tubing, hereinafter called PE pipe or tubing, shall conform to AWWA C-901-08, PE 3408 material, Class 160.

2. All coils of PE tubing shall be spirally wrapped in heavy water resistant paper or packaged in cardboard boxes. Each coil shall be labeled clearly to show the size, coil length and pressure rating of the tubing.

G. Fittings for Service Connections: Provide brass fittings in conformance with AWWA C-800-12.

H. Gate Valves: Resilient Wedge, NRS gate valves with iron body, fully encapsulated resilient wedge seats conforming to AWWA C-515-09. Valve ends to be of type indicated on Plans and/or Exhibits, or if not indicated, mechanical joint or hub or gasketed appropriate for the connecting piping. M.J. bolt holes to straddle centerline. Underground valves to be provided with 2-inch square operating nut, aboveground with handwheels. Stem seals to be "O" ring. Stem to turn counterclockwise to open. M.J. bolts to be cadmium plated.

I. Butterfly Valves: Furnish butterfly valves for locations shown on Plans and/or Exhibits conforming to AWWA C-504-10. Valve ends to be short body flanged or mechanical joint as indicated on Plans and/or Exhibits. Valve to have stainless steel body seat and 360 degrees rubber seat on vane. Seat to be site replaceable. "O" ring shaft seal. Valves for underground locations to be fitted with manual underground operator, 2-inch square nut, opening counterclockwise. Above ground valves to be fitted with crank operator, opening counterclockwise. M.J. bolts to be cadmium plated. Manufacturer to furnish Certificate of Compliance.

J. Flexible Component

1. Flanged Adapters: Up to 12-inches, to be Rockwell Type 912 or approved equal, larger than 12-inch diameter, to be Rockwell Type 913 or approved equal. For "lock" type furnish with locking studs for 12-inches and smaller; furnish harness assembly for larger adapters.

2. "Dresser" Couplings: Cast couplings for cast iron pipe; Dresser Style 38, 53, 153 or Rockwell Type 43D series.

K. Fire Hydrants: Fire hydrants shall meet or exceed the requirements specified in AWWA C502, latest revision, and shall comply with Factory Mutual Research Corporation and Underwriters' Laboratories UL Standard 246. The minimum rated working pressure shall be 200 psi with a minimum test pressure of 400 psi. Hydrants shall comply with the following specific design criteria:

1. Main valve closure shall be compression type, opening against the pressure and closing with the pressure.

2. Fire hydrants shall be traffic models, with breakable stem coupling. Traffic feature to be designed so the nozzle section of the hydrant can be rotated (by degree) to full 360 degree circle to face the nozzles in any direction. The internal hydrant rod shall be two piece, held together by a breakable coupling designed to snap upon vehicular impact. The hydrant barrel shall have a two piece breakable flange at the bottom of the upper barrel.

3. The main valve opening shall not be less than 5¼-inch. Unit to be designed so removable hard rubber seat, drain valve mechanism, internal rod, and all working parts can be removed through the top of the hydrant. These parts shall be removable without disturbing the ground line joint or the nozzle section of the hydrant. The bronze seat shall be threaded into matching threads of bronze for ease of field removal.

4. Hydrants shall be equipped with positive operating, non corrodible drain valves. The draining system shall be bronze and activated by the main stem without the use of an axillary rod, toggles, pins, etc. The drain mechanism shall be completely closed after no more than three turns of the operating nut in the opening direction. There shall be a minimum of two (2) inside ports and four (4) drain port outlets to the exterior of the hydrant. Drain shut-off to be direct compression closure. Sliding drain seals are not acceptable.

5. Hydrant shall be a dry-top type. There shall be an internal top housing with triple O-rings to seal operating threads from the waterway and accommodate an anti-friction washer.

6. The operating nut and stem shall be capable of withstanding an input torque of 200 ft-lbs in opening or closing directions.

7. Hydrant shall be equipped with sealed grease lubrication.

8. Hydrant shall have two (2) 2½-inch hose nozzles and one (1) 4½-inch 4½TPI pumper nozzle. All nozzles to be NST 2½ 7.5 TPI. Nozzle section of hydrant to be designed to permit field replacement of damaged threads without special tools, excavation, or disturbing the ground joint. Bronze nozzles are to be locked into hydrant barrel with locking lugs and sealed by heavy duty O-ring. Each nozzle to be equipped with weather cap with 1½-inch operating nut. Hydrant shall be a minimum of 18-inches from ground line to center of hose nozzle.

9. Hydrant to be equipped with 1½-inch operating nut. Direction of opening shall be counterclockwise, with appropriate markings plainly visible to so indicate.

10. Hydrants shall have 6-inch M.J. shoe connection.

11. Unless otherwise shown, depth of bury shall be 4-feet with a minimum weight of 500 pounds at this bury. Hydrants shall be designed to permit extension without excavation.

12. Friction loss through hydrant shall not exceed 3.0 psi at 1000 gpm through pumper nozzle. Flow testing and certification of this feature shall be conducted by an independent testing laboratory and be in accordance with AWWA C502-05.

13. Fire hydrants are to be Mueller or American Darling.

L. Valve Boxes: Furnish 3-piece cast iron valve boxes, with base sizes to fit valve bonnet. Shaft shall be 5¼-inch diameter. Lids marked "WATER." All pieces shall be asphalt-dipped. For valves located outside of roadway, Tyler Series 6860 screw type or 6" (PVC SDR-26) with cast iron section A and LID, to be furnished. For valves located within roadway, Tyler Series 6865 slip type, or equal. Extensions of proper length to be supplied.

III. EXECUTION

A. General: Except as required otherwise by these specifications or by Plans and/or Exhibits, piping is to be installed in accordance with the applicable provisions of the following:

1. Ductile cast iron water mains and appurtenances - AWWA C-600-10.

2. ASTM D-2321 - Recommended practice for underground installation of flexible thermoplastic pipe.

B. Pipe Handling

1. Pipe shipped to the job shall be properly protected against normal forces during transit from manufacturing site to project site.

2. Contractor shall provide and employ slings, lifting cables, strong backs, etc. as recommended by manufacturer in handling pipe, fittings and appurtenances on the job. Proper care against damage from rough handling shall be exercised at all times. Under no circumstances will pipe for fittings be dropped, nor will pipe be allowed to slam together.

3. Pipe is to be strung only on street right-of-way and easements; water pipe is never to be strung in drainage ditches. Strung pipe shall not be placed so as to prevent or unreasonably obstruct access of people or vehicles to residences or to businesses. Loose items such as joint assembly material are not to be left in street right-of-way. Delivery of piping materials is to be scheduled so that pipe is strung a maximum of 2 weeks prior to pipe laying.

4. Particular care is to be taken to avoid damage to pipe that is cement mortar lined.

5. Pipe will be strung so bells or belled couplings face in the direction of laying advancement.

C. Pipe Laying General

1. Use specified piping materials corresponding to the material, size, type, etc. indicated on Plans and/or Exhibits.

2. Do not lay pipe in water, or when trench or weather are unsuitable for work, except with permission of the Engineer. Keep water out of trench until jointing is complete. When work is not in progress, close ends of pipe and fittings securely so that no trench water, earth or other substance will enter pipes or fittings.

3. Keep the inside of the pipe free from foreign matter during operations by plugging or other approved method.

4. Place pipe so that the full length of each section rests solidly upon the pipe

bed, with recesses excavated to accommodate bells and joints. Take up and relay pipe when the grade or joint is disturbed after laying.

5. Locate no joints closer than 9-feet from sanitary sewers. Where possible, lay water lines 9-feet above sewers at crossings.

6. Where pipe ends are left for future connections, install valves, plugs or caps, as shown. Provide thrust blocking or joint restraint as necessary to prevent pipe or fitting movement.

7. Handle pipe and accessories so that all pipe placed in the trench is sound and undamaged. Take particular care not to injure pipe coating.

8. Cut cast iron neatly, using approved type mechanical cutter without damaging pipe. Cutting by cutting torch is strictly prohibited. Use wheel cutters when practical. Saw asbestos-cement and PVC with sharp saw with properly set teeth.

9. Before installation, inspect pipe for defects. Replace sections of pipe found to be defective, damaged or unsound.

10. Pipe barrels to be clean at time of joining. Swab as required to remove dirt, mud and other foreign matter.

D. Bedding and Pipe Placement: Refer to Item 2221 - Excavation, Trenching and Backfilling for Utilities

E. Joints

1. Make of joints generally to be in accordance with manufacturer's directions and referenced standards.

2. For pipes using a compressed elastomeric gasket joints, bell and spigot surfaces and gasket shall be clean. Area adjacent to gasket and gasket groove to be free of foreign particles. Spigot beveled as required. Gasket or spigot end lubricated per manufacturers directions. The two pieces to be joined are to be in axial alignment and restrained from rotating around the axis, until the pipe is "home." The position of the gasket is to be checked all around with a feeler gauge when so recommended, or other recommended checks made to insure proper gasket positioning, and/or pipe and end gap. Pipe ends are not to be butted. The force necessary to push the pipe "home" shall be closely controlled, applied in such a manner as not to displace nor damage piping being joined.

3. Mechanical joints and flexible couplings to be made up similar to "push"

joints. Pipe alignment to be within tolerance of joint. Gasket to positioned all bolts made up evenly using a torque wrench of the recommended rating, bolts and nuts positioned and tightened in every hole.

4. Flange Joints

a. Flange faces to be clean. Pieces to be joined are to be in precise alignment and fit up to be snug without springing. Gasket to be carefully positioned and bolts pulled up evenly. Bolts or studs to be properly tightened in every hole. Closures shall not require pull up by bolting for fit. Special care to be taken at equipment, valve or fitting so that fit is good and flange makeup does not distort equipment.

b. Use flat face companion flanges only with flat faced fittings, valves or equipment. Otherwise use raised face flanges.

c. Install 1/16-inch asbestos gasket full-face excepting ring for raised face, suitable for intended service and factory cut to proper dimensions. Secure ring gaskets with a suitable gasket cement.

d. Use ANSI nuts and bolts, galvanized or black to match flange material. Use cadmium plated nuts and bolts underground. Tighten bolts progressively to prevent unbalanced stress. Draw bolts tight to ensure proper seating of gaskets. Joints to be water tight.

e. Keep flange covers on equipment and shop-fabricated piping until ready to install in system.

5. Plastic

a. When using threaded joints provide sharp, clean pipe dies and Teflon thread tape. Make joints in strict accordance with manufacturer's recommendation.

b. When gluing PVC, use solvent cement method in strict accordance with manufacturer's recommendations, and ASTM D- 2241. Allow proper drying time.

c. Compressed elastomeric joints to be made up in accordance to manufacturer's recommendations.

F. Joint Deflection: Joint deflection shall in no case exceed the manufacturer's

recommendations. Push-on type joints shall have deflections taken only after pipe is "home." Mechanical type joints to be deflected prior to final tightening.

G. Thrust Resistance

1. Responsibility of thrust resistance shall be the responsibility of the Contractors.

2. Thrust blocking shall be provided at all fittings. The concrete shall bear on undisturbed firm soil. If unavailable at a particular installation, the absence shall be promptly brought to the Engineer's attention. Place concrete so that joints are left accessible.

3. Restrained Joints: Where flexible joints are shown as "lock" or "restrained," resistive restraint devices capable of being dismantled and with ample ability to transfer the thrust shall be engaged so as to positively prevent pipe separation.

H. Underground Protection, Cast and Ductile Iron

1. Where indicated on the Plans and/or Exhibits underground ductile and cast iron shall be wrapped in polyethylene film in accordance with AWWA C-105.

2. Where indicated on the Plans and/or Exhibits underground metal piping shall be cathodically protected.

I. Setting Underground Valves, Valve Boxes, and Flushing Valves

1. Prior to installing valves or flushing valves, remove foreign matter from within the valves. Inspect the valves in open and closed positions to verify that all parts are in satisfactory working condition. Refurbish existing valves to be used again, installing new seats and seals and generally repair the valves. Install fully closed.

2. Install valves, valve boxes, and flushing valves where shown or as located by the Owner. The gate valves and flushing valves plumb and as detailed on Plans and/or Exhibits. Set butterfly valve with shaft true horizontal. Center valve boxes on valves. Locate valves away from roads or streets. Carefully tamp earth around each valve box for a minimum radius of 4-feet or to undisturbed trench face if less than 4-feet. Set flushing valve 2-feet from the edge of the right-of-way, such that connecting pipe will not have less cover than distributing mains.

3. Place a concrete thrust block opposite pipe connections, set against the

vertical face of the trench to prevent the valve from moving. If the character of the soil is such that the flushing valve cannot be securely wedged in this manner, provide bridle rods and rod callars of not less than ¾-inch stock protected by a coat of acid- resisting paint.

4. Place pea gravel around the base of flushing valves to ensure drainage. Compact backfill thoroughly around the valve to grade line.

5. Valve boxes to be set vertical, with bases of proper size fitted over valve bonnets, slip type boxes to be used where box exposed to traffic. Boxes to be set with tops flush with finish grade. Slip type box top-piece shall not be on step. Backfill to be tamped around box to ensure stability of its placement.

J. Service Connections: Tubing to be made up slack in trench, free of kinks and crimps. Minimum radius for bends to be 12D. No connectors permitted under pavement. Connections to meter not to disturb or distort meter setting. Service piping to generally slope toward meter. Minimum cover under drainage ditches to be 18-inches. Where direct taps to the main are made, the tapping machine is to be secured on the main so that it does not wobble during drilling and tapping. Dies are to be sharp, and for tapered thread (Mueller). Where a service saddle is required; the saddle is to be securely tightened and a clean hole drilled in the main. Position the tap as indicated in the Plans and/or Exhibits. Corporation stops are to be made up tight and leakproof. The service line shall be kept clean at all times. Flaring shall be accomplished by the use of suitable flaring tools. Remove all burrs. All fittings shall have the proper "bite" on the tubing and be made tight. Tap to be perpendicular from main to meter box, or as near thereto as permitted by the joint. In general, taps to be made on new main at time of laying, (i.e. dry). Main to be flushed, disinfected and hydrostatically tested, then service tubing run. Prior to final connection to existing service or to meter or to existing service or to stop for future meter installation, service is to be thoroughly flushed. This is to be done through a large hose or pipe to drain into ditch or gutter, and including the stop, if any. Service tubing to be bedded and backfilled as per Item 2221 - Excavation, Trenching and Backfilling for Utilities.

K. Hydrostatic Testing and Disinfection Sequence: New sections of main being installed in many cases will be tied in one or more places to valves separating the new main from the operating system. In all instances, unless approved in writing by Engineer prior to testing, a zone of atmospheric pressure will be maintained between existing main and newly constructed main until new main has been disinfected and accepted. In most instances, use of temporary valve assemblies will permit hydrostatic testing to promptly follow main line completion of section, without the danger of pumping contaminated water back into the operating system through a leaking valve. In case that the particular circumstances do not permit effective isolation, the Contractor shall be obliged to reverse the usual order and

disinfect the new mains first, then hydrostatically test, redisinfect after any rejoins.

L. Hydrostatic Test: After each section of main is complete and can be isolated so high pressure cannot force test water into the operating system, it shall be hydrostatically tested. Such testing shall be in conformance with Section 4 of AWWA C-600, as modified herein:

1. Test section to be first flushed with open bleeds with flow controlled at feed from operating system so that flushing pressure is always well below operating system.

2. Pressure Testing: Pressure testing should be done when the trench is only partially backfilled to allow for repairs if necessary. The operator should follow this procedure:

   a. The pressure test should be performed after the main has been full of water for 24 hours. When filling the main, water should be admitted slowly to expel all air.

   b. Pressure should be obtained and maintained by pumping water into the line through a meter. Test pressure should be 1½ times as great as the normal operating pressure or 150 psi, whichever is greater.

   c. After two hours at test pressure, the leakage should be within limits for that type of line.

3. A test, to be successful, must be witnessed by the Engineer's field representative, minimum 2 hours in duration and conducted during reasonable hours.

4. The Contractor is to furnish all necessary equipment and calibrate to approved standards.

5. Allowable Leakage: No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD\,(P^{1/2})}{133{,}200}$$

in which L is the allowable leakage, in gallons per hour; in feet S is length of pipe line tested; D is the nominal diameter of the pipe in inches; and P is the average test pressure during leakage test, in pounds per square inch gauge. Allowable leakage is determined from Table 6A, AWWA C-600.

6. In case of failure, the Contractor shall find and repair the leaks until the

test section meets the minimum requirements.

7. When temporary inserts for hydrostatic testing are installed, upon removal the replacement piping shall be left exposed for visual inspection for leakage under normal pressure (after disinfection), before being backfilled.

8. The Owner will provide flushing and testing water only one time at no cost to Contractor. All retest costs, where additional water is required, will be borne by the Contractor. The Owner will, at Contractor's option, allow reimbursement or deduct these costs from the final estimate.

M. Disinfection: Disinfection for each section of the work shall be performed in accordance with AWWA C-651, as supplemented and modified below:

1. The Contractor shall provide taps within a few feet of the ends of the disinfection section and bleed so as to insure high strength solution to all parts of the section.

2. Unless otherwise approved, hypochlorite shall be used to supply the available chlorine.

3. Continuous feed methods to be used. The Owner will furnish the water one time only at no cost. The Contractor shall provide the chlorine solution tank and means of approximately proportioning its flow. Piping from hydrants of the dilutant water and all other piping and appurtenances to be furnished by the Contractor. Contractor to perform the disinfection and subsequent flushing.

   All retest costs, where additional water for biological testing is required, will be borne by Contractor. Owner will, at Contractor's option, allow reimbursement or deduct from final estimate these costs.

4. The strong chlorine solution must be flushed from the test section. The Contractor shall provide means to discharge into an open drainage ditch or, into a mixing box discharging to storm sewer. The flushed chlorine solution must not be a potential cause for environmental damage. Contractor must neutralize thoroughly any remaining chlorine residual within the water. Where applicable, Federal, State, and Local Regulatory Agencies must be contacted to determine special requirements for disposal of heavily chlorinated water.

5. The Owner will cause bacteriological samples to be taken and tested. If negative for coliform organisms, the Contractor may proceed with the next step of the work; otherwise the disinfection procedure is to be repeated.

6. The Contractor may place tablets in the main for his benefit, but such is not to be a substitute for the above procedure.

N. Wet Connection

1. Wet connections are to be made under the direction of the Engineer and in such a manner and at such hours as to least inconvenience the public. Notify Project Manager at least 72 hours in advance of making connections. Conduct connection operations when inspector is at job site. When the existing mains have been cut or a plug removed for a connection, then the work or making the connection shall progress without interruption until complete. The compensation for making wet connections will be based on the unit bid prices and no additional compensation will be granted for making connections at night or for having to complete a connection under unfavorable working conditions.

2. No compensation will be given for extra work or for damages occurring as result of incomplete shutoff.

3. Wet connections consist of isolating sections of pipe to be connected with existing valves, draining isolated sections, and completing connections. Tapping sleeve and valves, and service connections are **not** wet connections.

Std. 1/22/96
Revised 10/1/02

ITEM 2565

FORCE MAINS

I. GENERAL

A. Scope: This section specifies furnishing and installing new force mains including air release valves, valve manholes, blocking, fittings, and other appurtenances.

B. Related Work (if utilized in this project)

1. Item 2221 - Excavation, Trenching and Backfilling for Utilities

2. Item 2560 - Sanitary Sewers

II. MATERIALS

A. Cast Iron Pipe

1. Furnish cast iron pipe manufactured in accordance with AWWA C101 or AWWA C108 or ductile iron pipe manufactured in accordance with AWWA C151 at Contractor's option. Pipe to be of American manufacture. Cast iron to be of thickness class per AWWA C101, 150 psi working pressure. Ductile iron pipe to be of thickness class per AWWA C150. Manufacturer to furnish certification of compliance.

2. Unless shown otherwise on Plans and/or Exhibits or required herein, push-on joints to be considered standard.

3. Where Plans and/or Exhibits or specifications indicate cast iron fittings or ductile-iron fittings, the terms are to be considered interchangeable. Such fittings are to conform to AWWA C110 for 200 psi working pressure. Joints shall be consistent with intended use as shown on drawing. Where no joint type is indicated in cast iron pipe runs, push-on is to be considered standard. Manufacturer to provide certification of compliance, "Restrained" mechanical joints, to have welded ring on spigot, or other approved design.

4. "Flanged and flanged" and "flanged and plain end" pipe shall be in conformity with AWWA C-115.

5. All C.I. and D.I. pipe and fittings shall be furnished with cement-motor

lining conforming to AWWA C-104, standard thickness.

6. All material to be approved by Underwriters' Laboratory and accepted without penalty by the Texas Fire Insurance Commission.

B. Asbestos-Cement Pipe

1. Furnish Class 150 asbestos-cement pipe and couplings for sizes shown in accordance with AWWA C400. Asbestos-cement pressure pipe, to be of American manufacture. Manufacturer to furnish certificate of compliance.

2. Fittings shall be Grey Iron conforming to AWWA C-110.

3. Push on joints to be considered standard.

C. Steel Pipe

1. Provide steel pipe intended for use as underground carrier pipe, sizes 4-inches through 24-inches, conforming AWWA C-200, 150 psi working pressure; cement-mortar lining per AWWA C-205.

2. Minimum wall thicknesses for carrier pipe must meet the following criteria:

Nominal Pipe Size-Inches	**Outside Diameter Inches**	**Minimum Wall Thickness Inches**	**Lbs. Per Lineal Foot Uncoated**
4	4.50	0.250	11.35
6	6.625	0.280	18.97
8	9.625	0.322	28.55
10	10.750	0.365	40.48
12	12.750	0.375	59.56
16	16.00	0.375	62.58
20	20.00	0.375	78.60
24	24.00	0.375	94.62

3. Furnish pipe with beveled ends for field butt welding.

4. Coat the pipe exterior in accordance with Division 9, Finishes.

5. Furnish new and unused pipe manufactured in compliance with Underwriters' Laboratories, Inc. specifications, Steel Pipelines for Underground Water Service. Pipe must be acceptable, without penalty, to the Texas Fire Insurance Commission for use in water works distribution

systems.

6. Where small diameter steel pipe is required, it is to be ASTM A-53 or 120, Schedule 40, galvanized.

D. Pre-tensioned Concrete Cylinder Pipe

1. Pipe scheduled for underground water main unless another material specifically named, is to be reinforced concrete water pipe-steel cylinder type, pre-tensioned, conforming to AWWA C-303, unless shown otherwise on Plans and/or Exhibits. The concrete cylinder pipe is to also be approved by Underwriters' Laboratory and accepted by the State Fire Insurance Commission, without penalty.

2. The manufacturer will be supplied all necessary data per Section 1.4 of said specification. He shall promptly submit, per Section 1.6 (C-303) detailed Plans and/or Exhibits and schedules and tabulated layout schedules. Each piece shall be marked thereon with an identification number, and each piece subsequently manufactured shall be so marked per Section 1.7 (C-303).

3. Quality control test reports on steel, cylinder assembly, and concrete shall be submitted to the Owner through the Engineer. An Affidavit of Compliance shall be similarly provided.

4. The design working pressure of the pipe is to be 150 psi, the design transient pressure is to be 100 psi. The external loading condition is to be; Live Load-AASHO H20, Dead Load-30" cover to 15' saturated clay backfill; bedding as shown on details and described herein. Pipe to be considered rigid.

5. Joints, except where specifically otherwise designated to be compressed rubber "o-ring" type. In general, thrust is to be transferred to earth by skin friction through tack-welded joints. All vertical fittings to be welded, as well as horizontal bends not noted on Plans and/or Exhibits as requiring blocking. Manufacture to submit details and incorporate in layout.

6. Flanges on steel cylinder pipe to conform to AWWA C-207, Class E, or ASA Series 150, flat faced.

7. Spigot ends to match C.I. fittings to have O.D. matching cast iron.

E. Polyvinyl-Chloride Pipe

1. PVC pressure pipe, 4" and larger diameters to conform to ASTM D-2241,

S.D.R.-21, elastomeric ring joints unless otherwise required.

2. Fitting shall be grey iron conforming to AWWA C-110.

3. Push on joints to be considered standard.

F. Air Release Valves: Furnish APCO air release valves, Model 400 with accessories. Valves to be provided with 2-inch isolating gate valve. Mount valve assembly on force main with brass double strap service saddle.

G. Air Release Manhole: Air release manholes to be as shown on the plan but not less than 36-inch in diameter with 8-inch of No. 7 crushed stone for drain in bottom. Casting to be traffic model 32½-inch minimum ring and cover.

III. EXECUTION

A. General - Except as required otherwise by these specifications or by Plans and/or Exhibits. Piping is to be installed in concordance with the applicable provisions of the following:

1. Grey and ductile cast iron water mains and appurtenances AWWA C-600.

2. AWWA standard for installation of asbestos-cement pressure pipe, AWWA C-603.-10

3. ASTM D 2321 - Recommended practice for underground installation of flexible thermoplastic pipe.

B. Pipe Handling

1. Pipe shipped to the job shall be properly protected against normal forces during transit from manufacturing site to project site.

2. Contractor shall provide and employ slings, lifting cables, strong backs, etc. as recommended by manufacturer in handling pipe, fittings, and appurtenances on the job. Proper care against damage from rough handling shall be exercised at all times. Under no circumstances will pipe or fittings be dropped, nor will pipe be allowed to slam together.

3. Pipe is to be strung only on street right-of-way and easements; pipe is never to be strung in drainage ditches. Strung pipe shall not be placed so as to prevent or unreasonably obstruct access of people or vehicles to residences or to businesses. Loose items such as joint assembly material are not to be left in street right-of- way. Delivery of piping materials is to

be scheduled so that pipe is strung a maximum of 2 weeks prior to pipe laying.

4. Pipe will be strung so bells or belled couplings face in the direction of laying advancement.

C. Pipe Laying General

1. Use specified piping materials corresponding to the material, size, type, etc. indicated on Plans and/or Exhibits.

2. Do not lay pipe in water, or when trench or weather are unsuitable for work, except with permission of the engineer. Keep water out of trench until jointing is complete. When work is not in progress, close ends of pipe and fittings securely so that no trench water, earth, or other substance will enter pipes or fittings.

3. Keep the inside of the pipe free from foreign matter during operations by plugging or other approved method.

4. Place pipe so that the full length of each section rests solidly upon the pipe bed, with recesses excavated to accommodate bells and joints. Take up and relay pipe when the grade or joint is disturbed after laying.

5. Locate no joints closer than 9-feet from water lines.

6. Where pipe ends are left for future connections, install valves, plugs, or caps as shown. Provide thrust blocking or joint restraint as necessary to prevent pipe or fitting movement.

7. Handle pipe and accessories so that all pipe placed in the trench is sound and undamaged. Take particular care not to injure pipe coating.

8. Cut cast iron neatly, using approved type mechanical cutter without damaging pipe. Cutting by cutting torch is strictly prohibited. Use wheel cutters when practicable. Saw asbestos- cement and PVC with sharp saw with properly set teeth.

9. Before installation, inspect pipe for defects. Replace sections of pipe found to be defective, damaged or unsound.

10. Pipe barrels to be clean at time of joining. Swab as required to remove dirt, mud and other foreign matter.

D. Bedding and Pipe Placement: Refer to Item 2221 - Excavation, Trenching and Backfilling for Utilities

E. Joints

1. Make of joints generally to be in accordance with manufacturer's directions and reference standards.

2. For pipes using a compressed elastomeric gasket joints, bell and spigot surfaces and gasket shall be clean. Area adjacent to gasket and gasket groove to be free of foreign particles. Spigot beveled as required. Gasket or spigot end lubricated per manufacturer's directions. The two pieces to be joined are to be in axial alignment and restrained from rotating around the axis, until the pipe is "home." The position of the gasket is to be checked all around with a feeler gauge when so recommended, or their recommended checks made to insure proper gasket positioning, and/or pipe end gap. Pipe ends are not to be butted. The force necessary to push the pipe "home" shall be closely controlled, applied in such a manner a not to displace nor damage piping being joined.

3. Mechanical joints and flexible couplings to be made up similar to "push" joints. Pipe alignment to be within tolerance of joint. Gasket to position all bolts made up evenly using a torque wrench of the recommended rating, bolts, and nuts positioned and tightened in every hole.

F. Flange Joints

1. Flange faces to be clean. Pieces to be joined are to be in precise alignment and fit up to be snug without springing. Gasket to be carefully positioned and bolts pulled up evenly. Bolts or studs to be properly tightened in every hole. Closures shall not require pull up by bolting for fit. Special care to be taken at equipment, valve, or fitting so that fit is good and flange makeup does not distort equipment.

2. Use flat face companion flanges only with flat faced fittings, valves, or equipment. Otherwise, use raised face flanges.

3. Install 1/16-inch asbestos gasket full face excepting ring for raised face, suitable for intended service and factory cut to proper dimensions. Secure ring gaskets with a suitable gasket cement.

4. Use ANSI nuts and bolts, galvanized or black to match flange material. Use cadmium plated nuts and bolts underground. Tighten bolts progressively to prevent unbalanced stress. Draw bolts tight to ensure proper seating of gaskets. Joints to be water tight.

5. Keep flange covers on equipment and shop-fabricated piping until ready to install in system.

G. Joint Deflection: Joint deflection shall in no case exceed the manufacturer's recommendations. Push-on type joints shall have defections taken only after pipe is "home." Mechanical-type joints to be deflected prior to final tightening.

H. Thrust Resistance

1. Responsibility of thrust resistance shall be the responsibility of the Contractors.

2. Thrust blocking shall be provided at all fittings. The concrete shall bear on undisturbed firm soil. If unavailable at a particular installation, the absence shall be promptly brought to the Engineer's attention. Place concrete so that joints are left accessible.

I. Restrained Joints: Where flexible joints are shown as "lock" or "restrained," resistive restraint devices capable of being dismantled and with ample ability to transfer the thrust shall be engaged so as to positively prevent pipe separation.

J. Underground Protection - Cast and Ductile Iron

1. Where indicated on the Plans and/or Exhibits underground ductile and cast iron shall be wrapped in polyethylene film in accordance with AWWA C-105.

2. Where indicated on the Plans and/or Exhibits underground metal piping shall be cathodically protected.

K. Hydrostatic Test

1. After each section of main is complete it shall be hydrostatically tested. Such testing shall be in conformance with Section 4 of AWWA C-600-93, as modified herein.

a. Test section to be first flushed with open bleeds with flow controlled at feed.

b. Pipe to be momentarily pressured to 3 times operating pressure (not less than 140 psi) as a "burst" test. Leak test to be conducted at 2½ times operating pressure (not less than 125 psi).

c. A test, to be successful, must be witnessed by the Engineers field representative and conducted during reasonable hours.

d. The Contractor is to furnish all necessary equipment and calibrate to approved standards.

e. Allowable Leakage. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD\,(P^{1/2})}{133{,}200}$$

in which L is the allowable leakage in gallons per hour; S is the length of pipeline tested; D is the nominal diameter of the pipe in inches; and P is the average test pressure during leakage test in pounds per square inch gage.

f. In case of failure, the Contractor shall find and repair the leaks until the test section meets the minimum requirements.

g. When temporary inserts for hydrostatic testing are installed, upon removal, the replacement piping shall be left exposed for visual inspection for leakage under normal pressure before being backfilled.

h. The Owner will provide flushing and testing water at no cost to Contractor.

LJA Project No. E135-0320 & 0340

ITEM 15122

AIR RELEASE VALVES

I. GENERAL

A. Scope: Furnish and install air release valves as shown on Plans and/or Exhibits and as specified herein.

B. Quality Assurance

1. Test all valves hydrostatically at factory prior to shipment. (200 percent of rating) Furnish certified copy of test data to Engineer.

2. Valve and accessories to be furnished as a complete unit by valve manufacturer.

3. Manufacturer: Apco Valve & Primer Corp., or approved equal.

C. Submittals

Submit the following in accordance with Contract Documents.

Shop Drawings: For valves 2-inch and larger. Include size, class, valve dimensions, and materials by ASTM designations.

II. MATERIALS

A. Body and Cover - cast iron

B. Float - stainless steel

C. Seat - Buna-N

D. Needle - stainless steel

E. Linkage - stainless steel

F. Lever Pins, Retaining Rings and Screws - stainless steel

III. EXECUTION

A. Installation

1. Mount as shown or for maximum operator convenience.

2. Pressure test with piping system. Operate satisfactorily through at least three cycles.

CITY OF KEMAH

STREET NAME SIGN

(PHOTO)

KEMAR
Harris
KEMAR
8TH ST
STOP

GEOTECHNICAL INVESTIGATION
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
KEMAH, TEXAS

LJA JOB No. E135-0320

REPORT NO. 1140228601

Reported to:

LJA ENGINEERING, INC.

Houston, Texas

Reported by:

GEOTEST ENGINEERING, INC.

Houston, Texas

Key Map Nos. 620 Y, 660 B, C

GEOTEST ENGINEERING, INC.

Geotechnical Engineers & Materials Testing

5600 Bintliff Drive Houston, Texas 77036 Telephone: (713) 266-0588
Fax: (713) 266-2977

Report No. 1140228601
April 23, 2018

Mr. Mark Havran, P.E.
LJA Engineering, Inc.
11821 East Freeway, Suite 360
Houston, Texas 77029

Re: Geotechnical Investigation
Bel Road Extension and Linear Detention Ditch
Kemah, Texas
LJA Job No. E135-320

Dear Mr. Havran:

Presented herein is our final geotechnical investigation report for the above referenced project. A draft report was submitted to you on November 17, 2017. This investigation was authorized by your notice-to-proceed email dated July 17, 2017 and Subconsultant Services Agreement dated July 19, 2017 by acceptance of our Proposal No. 1140410699, dated July 13, 2017.

We appreciate this opportunity to be of service to you. If you have any questions regarding the report, or if we can be of further service to you, please call us.

Sincerely,
GEOTEST ENGINEERING, INC.
TBPE Registration No. F-410

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EXECUTIVE SUMMARY

A geotechnical investigation was conducted for Bel Road Extension and Linear Detention Ditch west of Interstate Highway 146 in the City of Kemah, Texas. The proposed extension of Bel Road consists of design and construction of approximately 1,450 linear feet of new concrete pavement with curb-and-gutter. The invert depth of the proposed storm sewer will be ranging approximately from 4 to 7 feet below the existing grade. The storm sewer will be installed by open cut methods.

This investigation included drilling and sampling of three (3) soil borings each to a depth of 15 feet for a total drilling footage of 45 feet and performing laboratory tests on recovered soil samples, performing engineering analyses and preparing a geotechnical report.

The principal findings and conclusions developed from this investigation are summarized below:

- The subsurface soils below the existing grade, as revealed by borings GB-1 through GB-3 drilled along the proposed alignment of Bel Road Extension, consist of medium stiff to very stiff gray, dark gray, brown and yellowish-brown fat clay and lean clay to the explored depth of 15 feet. In boring GB-2, a thin layer of clayey sand was encountered between the depths of 14 feet and 15 feet. Fill material consisting of stiff gray, dark gray and yellowish-brown fat clay with sand seams, grass roots, calcareous and ferrous nodules and ferrous stains was encountered below existing grade to a depth of 2 feet in all the borings.
- During drilling operations, no groundwater was encountered in the borings drilled for this investigation.
- Details of recommendations for open cut installation of the storm sewers is presented in Section 5.2 “Open-Cut Excavations.”
- Details of allowable (net) bearing pressure values for the design of storm sewer manhole structures are presented in Section 5.3 “Structures.”

- The recommended pavement sections are given below:

Street	**Course**	**Thickness, inches**
Bel Road Extension	Jointed Reinforced Concrete	7
	6% Lime Stabilized Subgrade	8

1.0 INTRODUCTION

1.1 Description of Project

The project involves extension of Bel Road to the west from Intestate Highway 146 in Kemah, Texas. The proposed extension consists of design and construction of approximately 1,450 linear feet of new concrete pavement with curb-and-gutter. As part of the extension, the project also includes installation of storm sewer pipes and a linear detention. The invert depth of the proposed storm sewer will be ranging from approximately 4 feet to 7 feet below the existing grade. The storm sewer pipes will be installed by open cut methods. The linear detention ditch is not part of the scope of this investigation. The vicinity map is shown on Figure 1.

1.2 Scope of Work

The purposes of this investigation were to evaluate the soil and water (if any) conditions along the proposed alignment of Bel Road extension in the City of Kemah, Texas and to provide geotechnical recommendations for the design and construction of the proposed roadway and storm sewer installation. The scope of this investigation consisted of the following tasks:

- drilling and sampling three (3) soil borings each to a depth of 15 feet for a total drilling footage of 45 feet;
- grouting all boreholes with non-shrink cement bentonite grout after completion of the drilling and water level measurements;
- performing minimum laboratory tests to evaluate the physical properties and strength characteristics of the subsurface soil;
- performing engineering analyses to develop geotechnical recommendations for bedding and backfill of storm sewers, water level control for open cut construction and rigid pavement construction including subgrade stabilization; and
- preparing a geotechnical investigation report including field and laboratory data and engineering recommendations as outlined above.

2.0 FIELD EXPLORATION

2.1 General

After obtaining the utilities clearance at the location of the three (3) borings in the field, the borings were drilled to the explored depths utilizing a truck mounted drilling rig. All the drilling and sampling were performed in accordance with appropriate ASTM procedures.

2.2 Geotechnical Borings

Subsurface conditions at the site were investigated by drilling and sampling a total of three (3) soil borings (GB-1 through GB-3), each to a depth of 15 feet below the existing grade. All borings were drilled with a truck-mounted rotary drilling rig using dry-auger technique. All the boring locations are shown on Figure 2, Plan of Borings. Survey information (Northing and Easting coordinates and ground surface elevation) of the completed borings were not provided to us at the time of preparation of this report.

Samples were taken at continuous 2-foot intervals to a depth of 15 feet, the termination depth of borings. In general, samples of cohesive soils were obtained with a 3-inch thin-walled tube sampler in general accordance with ASTM Method D1587 and cohesionless soils were sampled with a 2-inch split-barrel sampler in accordance with ASTM Method D1586. Each sample was removed from the sampler in the field, carefully examined and logged by an experienced soils technician. Suitable portions of each sample were then sealed and packaged for transportation to Geotest's laboratory. The shear strength of cohesive soil samples was estimated using a calibrated hand penetrometer in the field. Driving resistances for the split-barrel sampler in cohesionless soils, recorded in the field as "blows-per-foot" are indicated on the boring logs. After taking water level measurements, all borings were grouted with cement bentonite grout.

Detailed descriptions of the soils encountered in the borings are given on the boring logs GB-1 through GB-3 and are presented on Figures A-1 through A-3 in Appendix A. A key to symbols and terms used on the boring logs is given on Figure A-4 in Appendix A.

3.0 LABORATORY TESTING PROGRAM

The laboratory testing program was designed to evaluate the pertinent physical properties and shear strength characteristics of the subsurface soils. Classification tests were performed on selected samples to aid in soil classification. All the tests were performed in accordance with ASTM Standards.

Undrained shear strengths of selected cohesive samples were measured by unconsolidated undrained (UU) triaxial compression tests (ASTM D2850). The results of the UU triaxial compression tests are plotted on the boring logs as solid squares. The shear strength of cohesive samples was measured in the field with a calibrated pocket penetrometer and also in the laboratory with a Torvane. The shear strength values obtained from the penetrometer and Torvane are plotted on the boring logs as open circles and triangles, respectively.

Measurements of moisture content and dry unit weight were taken for each UU triaxial compression test sample. Moisture content (ASTM D2216) measurements were also made on other samples to define the moisture profile at each boring location. The liquid and plastic limit tests (ASTM D4318) and percent passing No. 200 sieves (ASTM D1140) were performed on appropriate samples. The result of all these tests are plotted or summarized on the boring logs GB-1 through GB-3 and are presented on Figures A-1 through A-3 in Appendix A.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 Site Geology

The project alignment for Bel Road extension lies in the Beaumont Formation. The clays and sands of the Beaumont Formation are over-consolidated as a result of desiccation from frequent rising and lowering of the sea level and the water table. Consequently, clays of this formation have moderate to high shear strength and relatively low compressibility. The sands of the Beaumont Formation are typically very fine and often silty. Further, there is occasional evidence in the Houston area of the occurrence of cemented material (sandstone and siltstone) deposits within the Beaumont Formation.

4.2 Subsurface Soil

The subsurface soils below the existing grade, as revealed by borings GB-1 through GB-3 drilled along the proposed alignment of Bel Road Extension, consist of medium stiff to very stiff gray, dark gray, brown and yellowish-brown fat clay and lean clay to the explored depth of 15 feet. In boring GB-2, a thin layer of clayey sand was encountered between the depths of 14 feet and 15 feet. Fill material consisting of stiff gray, dark gray and yellowish-brown fat clay with sand seams, grass roots, calcareous and ferrous nodules and ferrous stains was encountered below existing grade to a depth of 2 feet in all the borings.

The fat clay soils and fat clay fill soils are of high to very high plasticity with liquid limits ranging from 55 to 74 and plasticity indices ranging from 34 to 49. The lean clay soils are of medium plasticity with a liquid limit of about 35 and a plasticity index of 16. The fines content (passing No. 200 sieve) of the fat clay and lean clay range from 87.6 to 96.0 percent. A complete description of the soils encountered are presented on the boring logs GB-1 through GB-3 as shown on Figures A-1 through A-3, in Appendix A.

4.3 Water Levels

During drilling operations, no groundwater was encountered in the borings drilled for this investigation. However, it should be noted that various environmental and man-made factors such as amount of precipitation, nearby subsurface construction activities, and change in area drainage can substantially influence the groundwater level.

5.0 GEOTECHNICAL ENGINEERING RECOMMENDATIONS

5.1 General

The project involves extension of Bel Road to the west from Intestate Highway 146 in Kemah, Texas. The proposed extension of consists of design and construction of approximately 1,450 linear feet of new concrete pavement with curb-and-gutter. As part of the extension, the project also includes installation of storm sewer pipes and a linear detention. The invert depth of the proposed storm sewer will be ranging from approximately 4 feet to 7 feet below the existing grade. The storm sewer pipes will be installed by open cut methods. The linear detention ditch is not part of the scope of this investigation.

5.2 Open-Cut Excavation

5.2.1 Geotechnical Parameters. Based on the soil conditions revealed by the borings, geotechnical parameters were developed for the design of open cut excavations for the installation of the proposed storm sewer. The geotechnical design parameters are provided in Table 1. For design, the water level in the ground should be assumed to be at the ground surface, since this condition may exist after a heavy rain or flooding.

5.2.2 Excavation Stability. Open excavation may be shored, laid back to a stable slope or some other equivalent means used to provide safety for workers and adjacent structures. The excavating and trenching operations should be in accordance with OSHA Standards, OSHA 2207, Subpart P, latest revision and the City of Houston requirements in absence of City of Kemah requirements.

- Excavation Shallower Than 5 Feet – For excavations that are less than 5 feet, the need for protection should be evaluated by a competent person to examine the ground for any indication of potential cave-in. When any indication of hazardous ground movement or potential cave-in is anticipated during construction, adequate, protective system should be provided for all excavation even though excavations are shallower than 5 feet.

- Excavation Deeper Than 5 Feet - Excavations that are deeper than 5 feet should be sloped, shored, sheeted, braced or laid back to a stable slope or supported by some other equivalent means or protection such that workers are not exposed to moving ground or cave-ins. The slopes and shoring should be in accordance with the trench safety requirements per OSHA Standards. The following items provide design criteria for trench stability.

  (i) OSHA's Soil Type. Based on the soil conditions revealed by the borings and the assumed groundwater level to be at the surface, OSHA's soil type "C" should be used for the determination of allowable maximum slope and/or the design of a shoring system. For shoring deeper than 20 feet, an engineering evaluation is required.

  (ii) Excavation Support Earth Pressure. Based on the subsurface conditions indicated by this investigation and laboratory testing results, excavation support earth pressure diagram was developed and is presented on Figure 5. This pressure diagram can be used for the design of temporary excavation bracing. For a trench box, a lateral earth pressure resulting from an equivalent fluid with a unit weight of 93 pcf is recommended. The above value of equivalent fluid unit weight is based upon an assumption that the water level is near the ground surface, since these conditions may prevail after a heavy rain or flooding. Effect of surcharge loads at the ground surface should be added to the computed lateral earth pressure. A surcharge load, q, will typically result in a lateral load equal to 0.5 q.

  (iii) Bottom Stability. In braced cuts, if tight sheeting is terminated at the base of the cut, the bottom of the excavation can become unstable under certain conditions. This condition is governed by the shear strength of the soils and by the differential hydrostatic head between the water level within the retained soils and the groundwater level at the interior of the trench excavation. For cuts in cohesive soils, as encountered in all the borings GB-1 through GB-3, the stability of the bottom can be evaluated in accordance with the procedure outlined on Figure 6.

5.2.3 Water Level Control. Excavations for the proposed storm sewer may encounter water seepage to varying degrees depending upon water level conditions in the ground and rain event at the time of construction and the location and depth of excavation. For cuts in cohesive soils, as encountered in all the borings GB-1 through GB-3, water (if encountered) may be managed by collection in excavation bottom sumps for pumped disposal.

It is recommended that the water level conditions be verified at the time of construction and that water level control be performed in general accordance with the City of Houston Specification, Section 01578 in the absence of City of Kemah Specifications.

5.2.4 Live Loads on Pipe Due to Traffic. Loads on pipe due to traffic should be considered. A graph providing calculated vertical stress on pipe due to traffic loads is given on Figure 7.

5.2.5 Pipe Bedding and Backfill. In general, bedding and backfill for the storm sewer should be designed and constructed in accordance with the City of Houston Standard Specification Item No. 02317 "Excavation and Backfill for Utilities" in absence of City of Kemah specifications.

5.3 Structures

5.3.1 Description. The structures associated with this project will be storm sewer manholes and inlet structures. Based on the information provided to us the storm sewer manholes and inlet structures will be placed at depths ranging from approximately 4 feet to 7 feet below the existing grade.

5.3.2 Foundation Conditions. Foundation conditions were explored by borings GB-1 through GB-3. Based on the soil conditions revealed by the borings, the storm sewer manholes will be bearing in medium stiff to very stiff fat clay and lean clay soils.

5.3.3 Foundation Design Recommendations. The following items provide design criteria and recommendations for the design and construction of the manholes.

- Allowable Bearing Pressures. The mat foundation for supporting the manholes placed at approximately 4 to 7 feet depth (into medium stiff to very stiff fat clay and lean soils) should be designed for an allowable (net) bearing pressure of 2,000 psf.

  The allowable net bearing pressures include a safety factor of 3.0. The above recommendations assume that the final bearing surfaces consist of undisturbed natural soils and that underlying semi-transmissive zones are properly pressure-relieved and stable undisturbed bearing surfaces are attained.

- Bottom Stability. In braced cut, if sheeting is terminated at the base of the cut, the bottom of the excavation can become unstable under certain conditions. These conditions are governed by the shear strength of the soils and by the differential hydrostatic head. For cuts in cohesive soils, as encountered in all the borings, stability of the bottom can be evaluated in accordance with the procedure outlined in Figure 6.

- Lateral Earth Pressure. The pressure diagram presented on Figure 5 can be used for the design of braced excavation. The lateral earth pressure diagram presented on Figure 8 is applicable for the design of the permanent walls.

- Hydrostatic Uplift Resistance. Structures extending below the groundwater level should be designed to resist uplift pressure resulting from excess piezometric head. Design uplift pressures should be computed based on the assumption that the water table is at the ground surface. To resist the hydrostatic uplift at the bottom of the structure, one of the following sources of resistance can be utilized in each of the designs.

  a. Dead weight of structure,
  b. Weight of soil above base extensions plus weight of structure, or
  c. Soil-wall friction plus dead weight of structure.

The uplift force and resistance to uplift should be computed as detailed on Figure 9. In determining the configuration and dimensions of the structure using one of the approaches presented on Figure 9, the following factors of safety are recommended.

a. Dead weight of concrete structure, $S_{f1} = 1.10$,
b. Weight of soil (backfill) above base extension, $S_{f2} = 1.5$, and
c. Soil-wall friction, $S_{f3} = 3.0$.

Friction resistance should be discounted for the upper 5 feet, since this zone is affected by seasonal moisture changes.

5.3.4 Water Level Control During Construction. Excavations for the proposed structures may encounter water seepage to varying degrees depending upon water level conditions in the ground at the time of construction and the location and depth of excavation. In cohesive soils, as encountered in all of the borings for the excavation depths, water level (if encountered) may be managed by collection in trench bottom sumps for pumped disposal.

It is recommended that the water level conditions be verified at the time of construction and that water level control be performed in general accordance with the City of Houston Specification, Section 01578 in the absence of City of Kemah Specifications.

5.3.5 Structure Backfill. In general, bedding and backfill for the storm sewer manholes should be designed and constructed in accordance with the City of Houston Standard Specification Item No. 02316 "Excavation and Backfill for Structures" in absence of City of Kemah specifications.

5.4 Pavement Structure Design

It is understood that the extension of Bel Road will be constructed with a new concrete pavement with curb-and-gutter streets. The pavement design presented below was developed in accordance with "AASHTO Guide for Design of Pavement Structures," 1993 Edition.

5.4.1 Design Parameters

Subgrade Soil Properties. California Bearing Ratio (CBR) tests were not within the scope of this project. Therefore, the roadbed soil resilient modulus is estimated based on physical properties and strength characteristics of the natural subgrade soils. Based on the physical properties and strength characteristics of the natural subgrade soils obtained from laboratory tests, the effective roadbed soil resilient modulus (M_R) was estimated to be about 1,941 psi from an assumed CBR value of 1.0. Based on an estimated resilient modulus of the 8-inch lime-stabilized subgrade, the effective modulus of subgrade reaction (k) is estimated to be about 49 pci.

Traffic Data. No traffic count and vehicle classification data was provided to us at the time of preparation of this report. Therefore, traffic loading for pavement design was estimated based on an assumed average daily traffic volume. A traffic loading of 0.933 x 10^6 18-kip (W_{18}) ESALs over a 30-year design period was utilized for pavement design. The ESALs are estimated based on average daily traffic (ADT) volume of 1000 vehicles at an assumed growth rate of 2%. A vehicle type distribution of 940 passenger cars, 50 single unit trucks and buses, and 10 heavy trucks was assumed.

Other Design Parameters. Other design parameters used in the development of rigid pavement thickness are given below:

Material Properties of Concrete:

Modulus of Elasticity of Concrete (E_c): 3,372,166 psi

Mean value of Modulus of Rupture of Concrete after 28 days (S'_c): 600 psi (Compressive strength 3,500 psi)

Load Transfer coefficient (J): 2.7

Drainage coefficient (C_d): 1.1

Overall Standard Deviation (S_o): 0.35

Reliability Level (R): 95%

Serviceability Index

Initial (P_o): 4.5

Terminal (P_t): 2.25

Reinforcement Variables

Allowable Working Stress (f_s): 45,000 psi (grade 60 steel)

Friction Factor (F): 1.8

5.4.2 Recommended Pavement Section

Based on the design parameters described above and the AASHTO design procedures, the thickness of rigid pavement was determined. The recommended pavement sections are given below:

Street	**Course**	**Thickness, inches**
Bel Road Extension	Jointed Reinforced Concrete	7
	6% Lime Stabilized Subgrade	8

For the 7-inch concrete pavement, the required longitudinal reinforcing steel for an expansion joint spacing of 80 feet and transverse reinforcement steel for a pavement width of 25 feet back to back are given below for the grade 40 steel.

Pavement Thickness (Inches)	**Longitudinal Steel**	**Transverse Steel**
	Center to Center Spacing (in)	**Center to Center Spacing (in)**
	# 4 bars	# 4 bars
7	18	18

5.4.3 Preparation of Pavement Subgrade

Based on the field and laboratory test data, the surficial subgrade soils at this site consist predominantly of fat clays of high to very high plasticity. The high to very high plasticity fat clay soils have a high to very high-volume change potential. Hence, lime stabilization of the cohesive subgrade soils will be required to reduce the swelling potential of the very high plasticity fat clay soils, to accelerate the construction and to provide a stable subgrade on which to construct the pavement section. The cohesive subgrade soils should be stabilized with approximately 6 percent

lime (by dry weight of soil) to a depth of at least 8 inches. This corresponds to approximately 36 pounds of lime per square yard based on 100 pcf of dry unit weight of soil. The actual percentage of lime should be confirmed by laboratory tests at the time of construction.

Subgrade preparation for filling the existing ditch and other areas for the proposed pavement after removing the existing vegetation, trees, shrubs should consist of stripping, proof-rolling, and stabilization. The following procedures for subgrade preparation are recommended:

1. Strip the surficial soils to a suitable depth to remove all surficial vegetation, sedimentation (in the existing ditches), roots, etc. and achieve grade. Because of the potential for excess accumulated organic matter and sediments within the ditch bottom, deeper stripping depths may be required. In isolated areas where soft, compressible, or very loose soils are encountered, additional stripping may be required. In these areas, soft soils should be removed and replaced with select fill material prior to stabilization. Stripping should extend to a minimum of 2 feet beyond the edge of the proposed pavement.

2. After stripping, the exposed surface should be proof-rolled with a minimum of 3 passes of a 30-ton pneumatic-tired roller or a partially loaded truck utilizing a tire contact pressure of approximately 90 psi. The purpose of the proof-rolling operation is to identify if any rutting develops or if any underlying zones or pockets of soft soils exist, so these weak materials can be removed and replaced prior to the placement of the select fill material or proceeding with the construction.

3. Based on the plan and profile sheets provided to us, we understand that the proposed alignment of the extension is over and along the existing ditch alignment. At these locations, the existing ditch will need to be filled with select fill to construct the subgrade for the proposed pavement. Select fill material should be placed in accordance with and meet the requirements specified in Section 5.4.4 "Select Fill."

During the placement of the select fill material to raise the grade at the existing ditch to construct the pavement subgrade, precautions should be exercised to avoid wet and pumping soils. If the soil is too wet, pumping will occur. In areas where wet and pumping soils are observed, the approaches recommended below may be followed to improve the ground:

a. Excavate and expose the surficial wet soils for drying and/or construct temporary ditches leading to a sump pit with pumps.
b. Apply chemical stabilization on wet subgrade to replace the wet soils with structural fill.

4. Lime stabilization of cohesive natural subgrade and select fill should be performed in accordance with City of Houston Standard Specifications Section 02336, "Lime-Stabilized Subgrade."

5.4.4 Select Fill

Should any select fill material be required to raise the grade, it should consist of lean clay or sandy lean clay with a liquid limit less than 40 and a plasticity index between 10 and 20. The select fill material should be compacted at moisture content within three percent above optimum to reduce swelling potential of the compacted fill. The fill material should be placed in loose lifts not exceeding eight inches in thickness and should be compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D698. The select fill pad should extend to at least two feet outside the paving area. The onsite fat clay is not suitable for select fill unless stabilized with sufficient lime.

6.0 PROVISIONS

The description of subsurface conditions and the design information contained in this report are based on the test borings made at the time of drilling at specific locations. However, some variations in soil conditions may occur between test borings. Should any subsurface conditions other than those described in our boring logs be encountered, Geotest should be immediately notified so that further investigation and supplemental recommendations can be provided. The depth of the groundwater level may vary with changes in environmental conditions such as frequency and magnitude of rainfall. The stratification lines on the log of borings represent the approximate boundaries between soil types, however, the transition between soil types may be more gradual than depicted.

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Vertical Stress on Pipes Due to Traffic Loads	7
Lateral Earth Pressure Diagram for Permanent Wall	8
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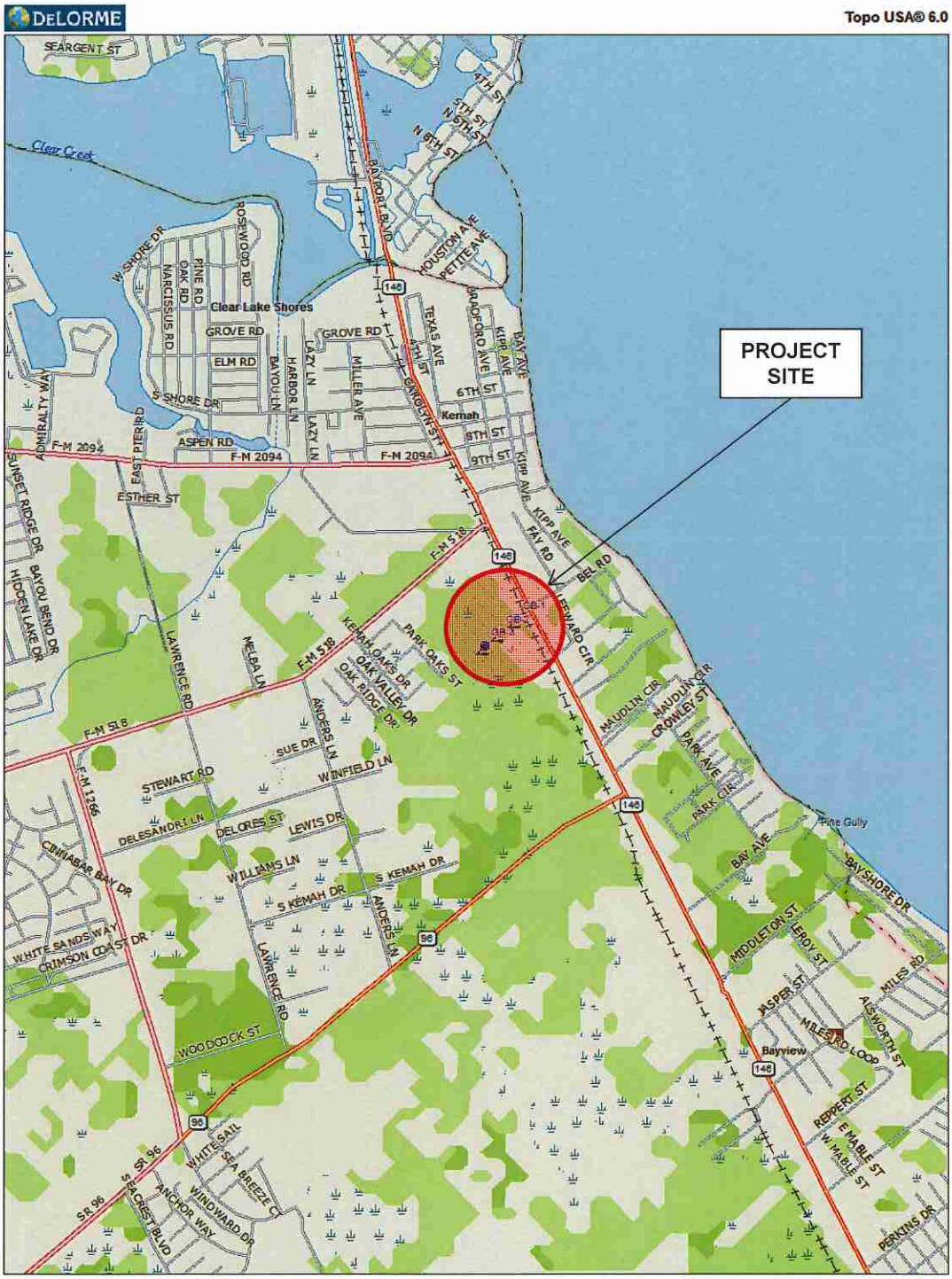
Job No. 1140228601



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MN (2.3° E)

0 800 1600 2400 3200 4000 ft

Data Zoom 13-0

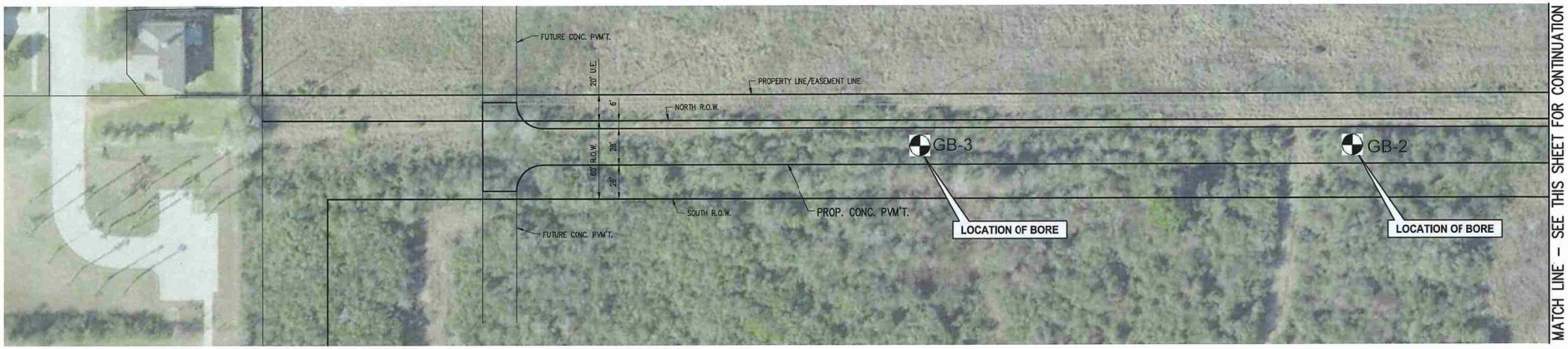
BEL ROAD EXTENSION AND LINEAR DETENTION DITCH
KEMAH, TEXAS

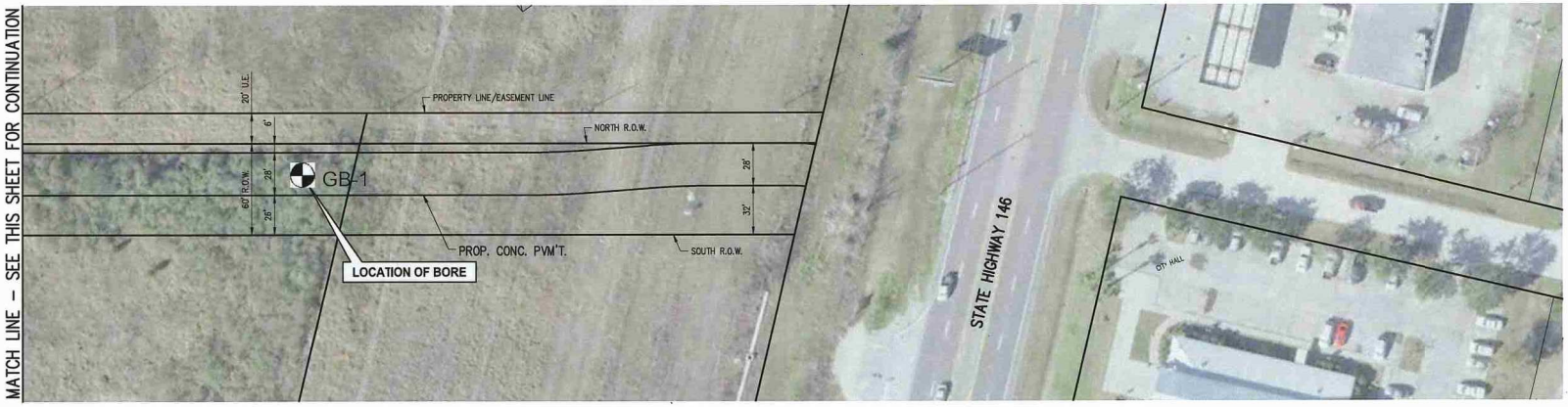
VICINITY MAP

Geotest Engineering, Inc.

FIGURE 1

Job No. 1140228601





LEGEND

Boring

40 0 40 80

SCALE IN FEET

CITY OF KEMAH
BELL ROAD EXTENSION

GEOTECHNICAL REQUEST

LJA Engineering, Inc.
1821 East Freeway
Suite 360
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

SCALE: AS SHOWN | JOB No. E135-0320 | EXHIBIT No. 01

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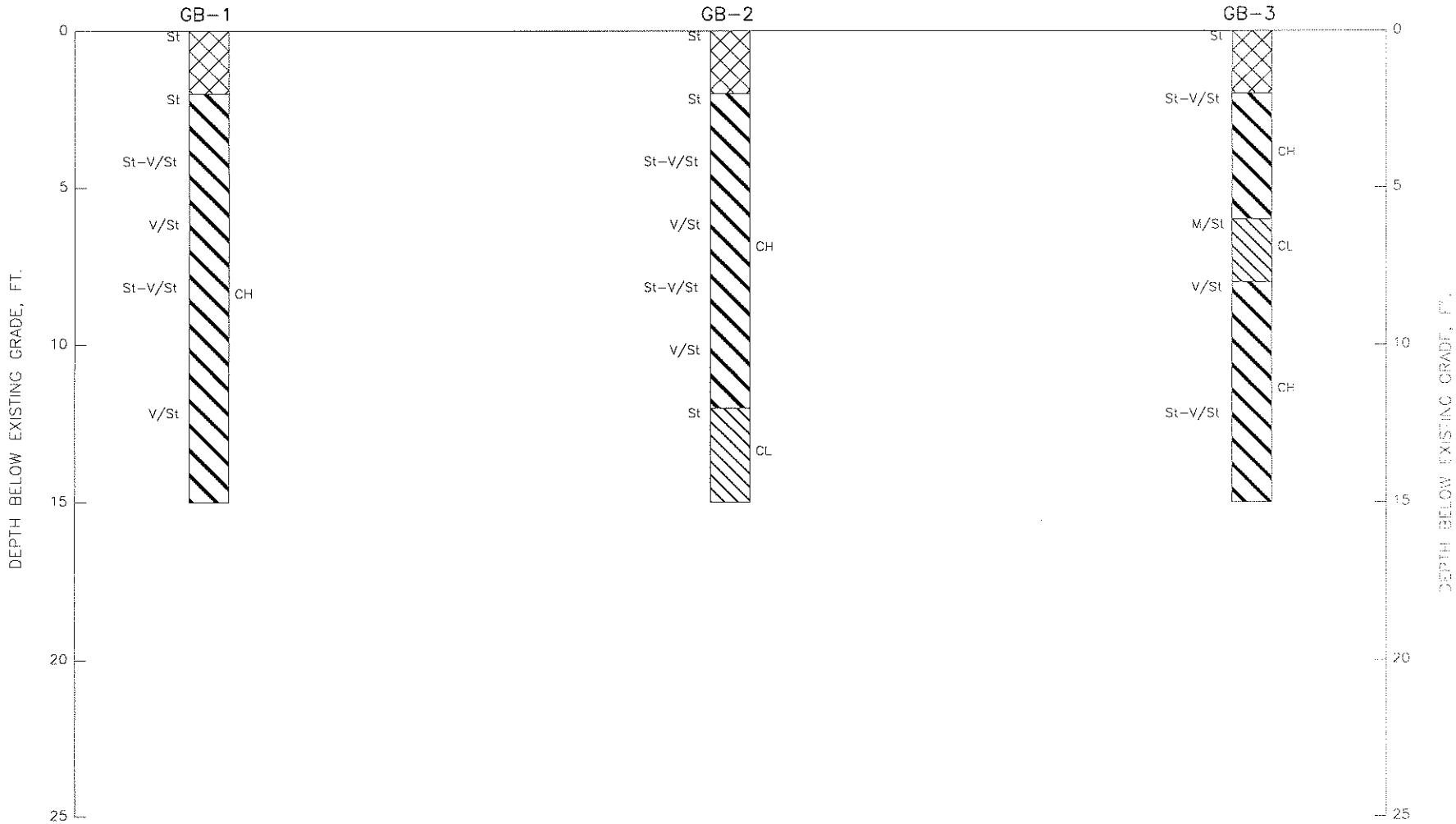
05/30/17

FIGURE 2



GENERAL NOTES:

1. See Figure 2 for approximate location of borings.
2. Data concerning subsurface conditions have been obtained at boring locations only. Actual conditions between borings may differ from the profile shown here.
3. See logs of boring for detailed description of soils encountered in each borehole.
4. See Figure 4 for symbols and abbreviations used on this profile.

BORING LOG PROFILE

Bel Road Extension
Borings GB-1 thru GB-3

0 50 100 150 200

HORIZONTAL SCALE IN FEET

Job No. 114022B601

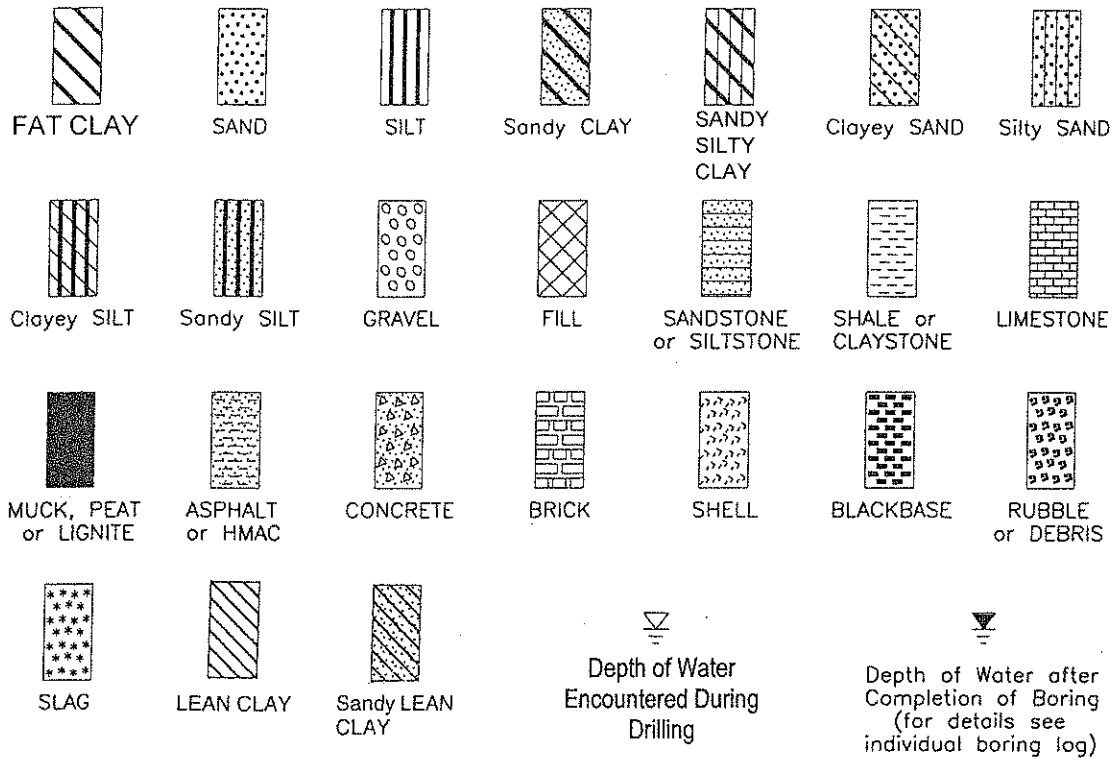
Geotest Engineering, Inc.

FIGURE 3

Job No. 1140228601

SYMBOLS AND ABBREVIATIONS USED ON BORING LOG PROFILE

LEGEND



ABBREVIATIONS USED FOR CONSISTENCY/DENSITY

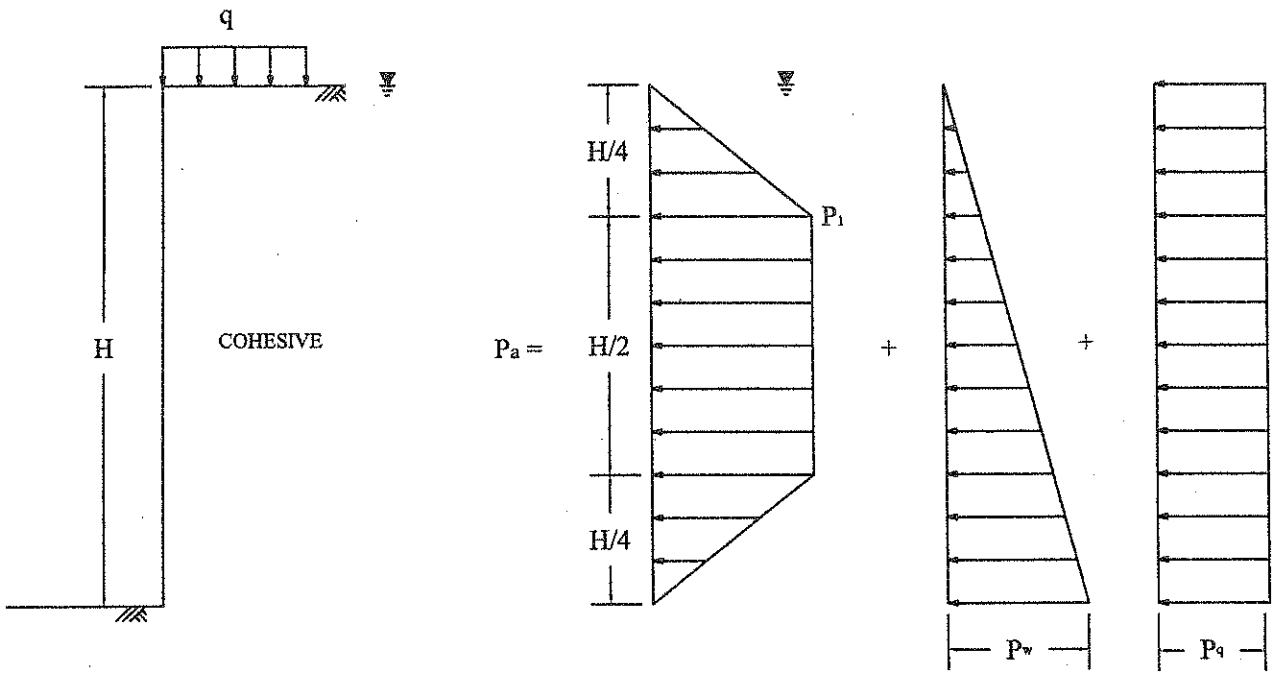
COHESIVE SOILS

V/So : Very Soft
So : Soft
Fm : Firm
M/St : Medium Stiff
St : Stiff
V/St : Very Stiff
Hd : Hard
V/Hd : Very Hard

COHESIONLESS SOILS

V/Lo : Very Loose
Lo : Loose
S/Co : Slightly Compact
Co : Compact
M/De : Medium Dense
De : Dense
V/De : Very Dense

Job No. 1140228601



TYPICAL SOIL PARAMETERS

See Table 1 for typical values of soil parameters

BRACED WALL

For $\gamma H/c \leq 4$

$P_1 = 0.3\ \gamma_c' H$
$P_w = \gamma_w H = 62.4\ H$
$P_q = 0.5\ q$

Where:

γ_c' = Submerged unit weight of cohesive soil, pcf;
γ_w = Unit weight of water, pcf;
q = Surcharge load at surface, psf;
P_a = Lateral pressure, psf;
P_1 = Active earth pressure, psf;
P_q = Horizontal pressure due to surcharge, psf;
P_w = Hydrostatic pressure due to groundwater, psf;
H = Depth of braced excavation, feet
c = Shear strength of cohesion soil, psf;

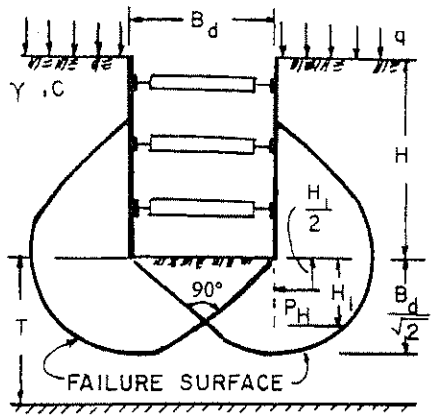
TRENCH SUPPORT EARTH PRESSURE

SUBMERGED COHESIVE SOIL

Geotest Engineering, Inc.

FIGURE 5

CUT IN COHESIVE SOIL,
DEPTH OF COHESIVE SOIL UNLIMITED ($T > 0.7\ B_d$)
L = LENGTH OF CUT



If sheeting terminates at base of cut:

$$\text{Safety factor, } F_S = \frac{N_C C}{\gamma H + q}$$

N_C = Bearing capacity factor, which depends on dimensions of the excavation : B_d , L and H (use N_C from graph below)

C = Undrained shear strength of clay in failure zone beneath and surrounding base of cut

γ = Unit weight of soil (see Table 1)

q = Surface surcharge (assumed q = 500 psf)

If safety factor is less than 1.5, sheeting or soldier piles must be carried below the base of cut to insure stability - (see note)

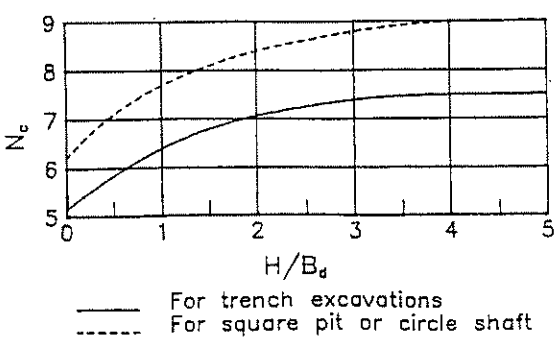
$$H_1 = \text{Buried length} = \frac{B_d}{2} \geq 5 \text{ feet}$$

Note : If soldier piles are used, the center to center spacing should not exceed 3 times the width or diameter of soldier pile .

Force on buried length, P_H:

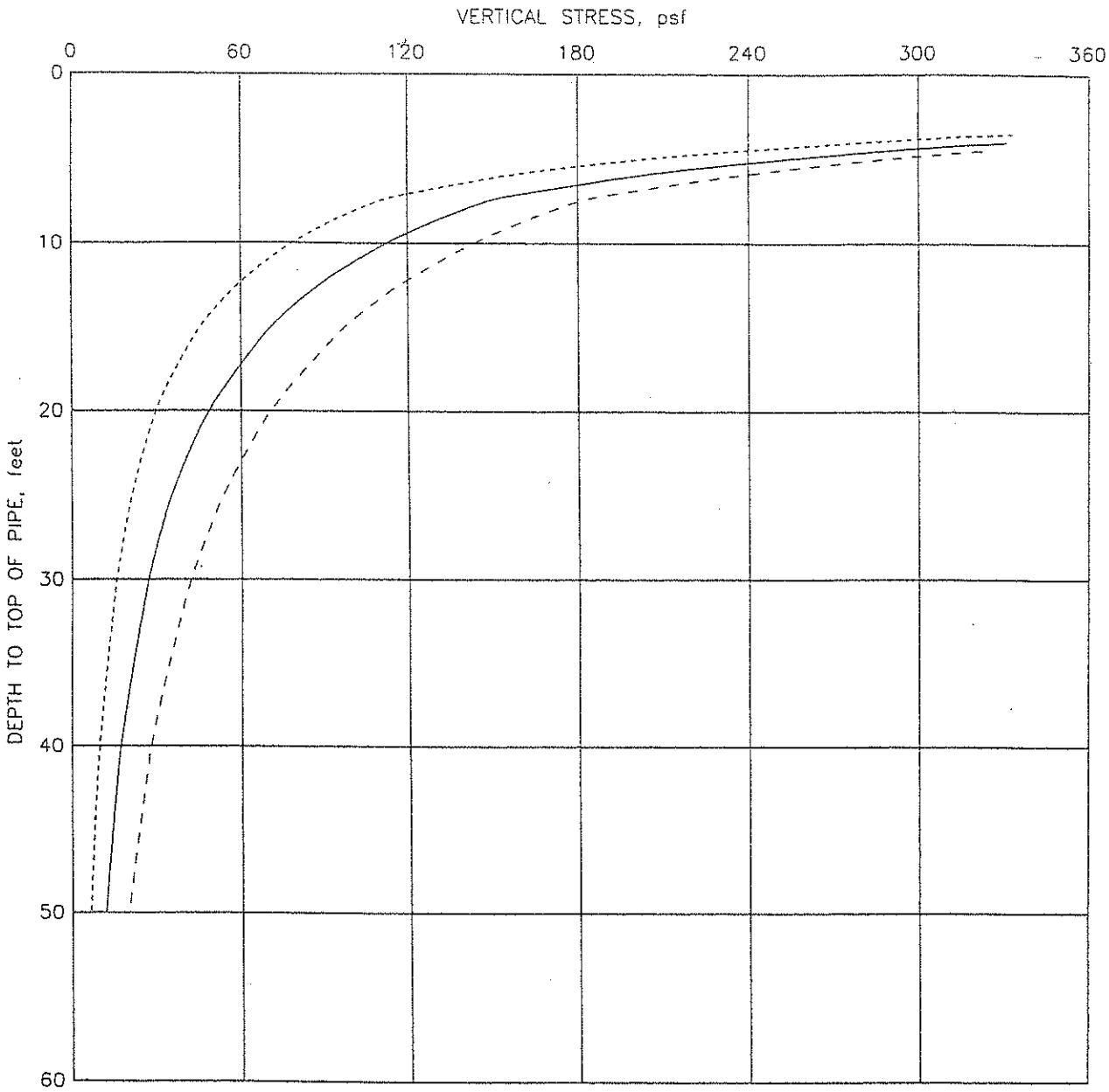
$$\text{If } H_1 > \frac{2}{3}\frac{B_d}{\sqrt{2}}, \quad P_H = 0.7\,(\gamma\, HB_d - 1.4CH - \pi CB_d) \text{ in lbs/ linear foot}$$

$$\text{If } H_1 < \frac{2}{3}\frac{B_d}{\sqrt{2}}, \quad P_H = 1.5H_1\,(\gamma\, H - \frac{1.4CH}{B_d} - \pi C) \text{ in lbs/ linear foot}$$



STABILITY OF BOTTOM FOR BRACED CUT

Job No. 1140228601



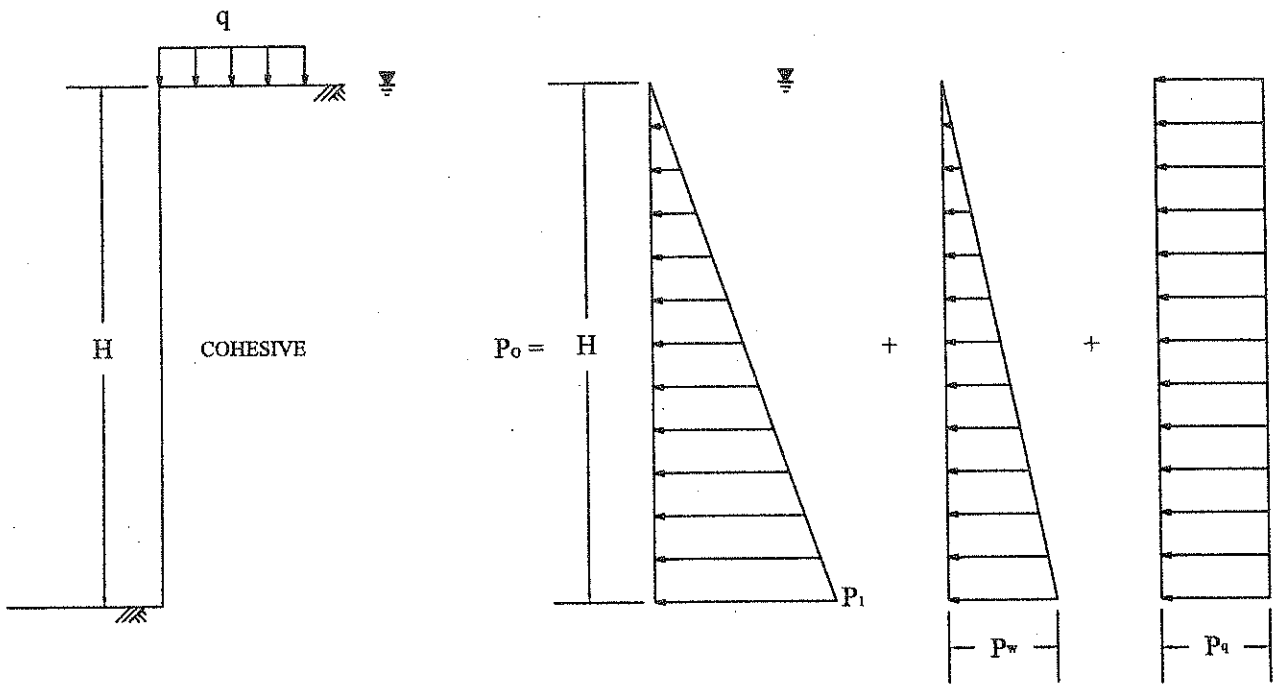
Legend:

------ One passing truck
——— Two passing trucks
– – – Four passing trucks

Notes: 1. The vertical stress was estimated using AASHTO H20 or HS20 truck axle loadings on paved surfaces.
2. Impact factor was included in the vertical stress.

VERTICAL STRESS ON PIPES
DUE TO TRAFFIC LOADS

Job No. 1140228601



TYPICAL SOIL PARAMETERS

See Table 1 for typical values of soil parameters

$K_{oc} = 1.0$

PERMANENT WALL

$P_1 = K_{oc}\,\gamma_c'\,H$
$P_w = \gamma_w\,H = 62.4\,H$
$P_q = 0.5\,q$

Where:

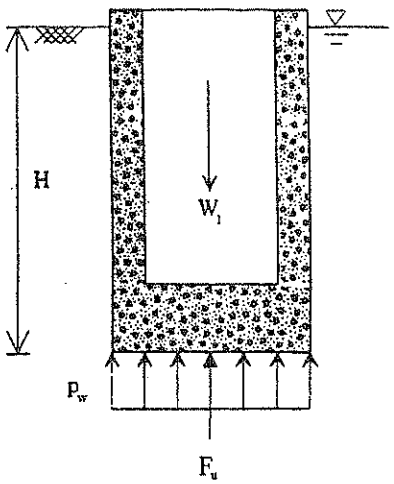
γ_c' = Submerged unit weight of cohesive soil, pcf;
K_{oc} = Coefficient of at-rest earth pressure in cohesive soil;
γ_w = Unit weight of water, pcf;
q = Surcharge load at surface, psf;
P_o = Lateral pressure, psf;
P_1 = At-rest earth pressure, psf;
P_q = Horizontal pressure due to surcharge, psf;
P_w = Hydrostatic pressure due to groundwater, psf;
H = Depth of excavation, feet

LATERAL EARTH PRESSURE DIAGRAM FOR PERMANENT WALL

SUBMERGED COHESIVE SOIL

Job No. 1140228601

(a) DEAD WEIGHT OF STRUCTURE

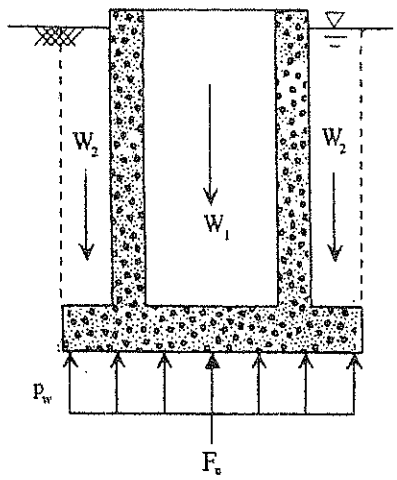


$p_w = H\gamma_w$

$F_u = A_b p_w$

$\frac{W_1}{Sf_1} = F_u$

(b) WEIGHT OF SOIL ABOVE BASE EXTENSION PLUS DEAD WEIGHT OF STRUCTURE

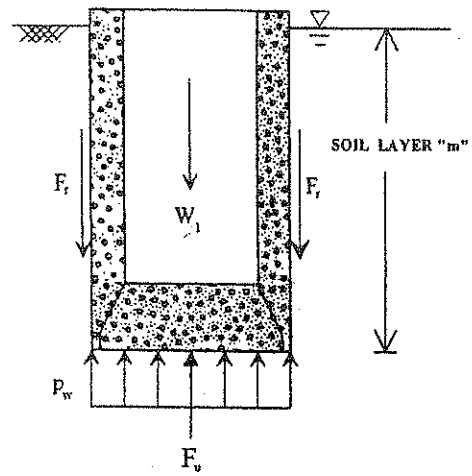


$p_w = H\gamma_w$

$F_u = A_b p_w$

$\frac{W_1}{Sf_1} + \frac{W_2}{Sf_2} = F_u$

(c) SOIL-WALL FRICTION PLUS DEAD WEIGHT OF STRUCTURE



$p_w = H\gamma_w$

$F_u = A_b p_w$

$\frac{W_1}{Sf_1} + \frac{F_r}{Sf_3} = F_u$

Predominantly Cohesive Soils, $F_r = \alpha c_m A_m$

Predominantly Cohesionless Soils, $F_r = p_m A_m K \tan \delta_m$

See Table 1 for typical values of soil parameters

Where:

A_b	=	area of base, sq. ft.
A_m	=	cylindrical surface area of layer "m", sq. ft.
c_m	=	undrained cohesion of soil layer "m", psf.
F_u	=	hydrostatic uplift force, lbs.
F_r	=	frictional resistance, lbs.
H	=	height of buried structure, ft.
K	=	coefficient of lateral pressure = 0.5.
p_m	=	average overburden pressure for layer "m," psf.
p_w	=	hydrostatic uplift pressure, psf.
$Sf_{1,2,3}$	=	factor of safety.
W_1	=	dead weight of concrete structure, lbs.
W_2	=	weight of backfill above base extension, lbs.
α	=	cohesion reduction factor = 0.5.
δ_m	=	friction angle between soil layer "m" and concrete wall, degrees = 0.75 ϕ_m
ϕ_m	=	internal angle of friction of soil layer "m", degrees.
γ_w	=	unit weight of water = 62.4 pcf.

UPLIFT PRESSURE AND RESISTANCE

TABLE

Table

Geotechnical Design Parameter Summary: Open-Cut Excavation 1

TABLE 1

GEOTECHNICAL DESIGN PARAMETER SUMMARY
OPEN-CUT EXCAVATION

Street	Boring Nos.	Stratigraphic Unit	Range of Depths, ft	Wet Unit Weight, γ, pcf	Submerged Unit Weight, γ', pcf	Undrained Cohesion, psf	Internal Friction Angle, φ, degree
Bel Road Extension	GB-1	Cohesive	0-4	120	58	1,000	--
			4-10	125	63	1,500	--
			10-15	125	63	2,000	--
	GB-2	Cohesive	0-10	127	64	1,500	--
			10-12	127	64	2,500	--
			12-15	127	64	1,500	--
	GB-3	Cohesive	0-6	125	63	1,200	--
			6-8	129	64	600	--
			8-15	128	64	1,200	--

APPENDIX A

	Figure
Log of Borings	A-1 thru A-3
Symbols and Terms used on Boring Logs	A-4

LOG OF BORING NO. GB-1

PROJECT : Bel Road Extension and Linear Detention Ditch
Kemah, Texas

PROJECT NO. : 1140228601

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 15.0 FT.

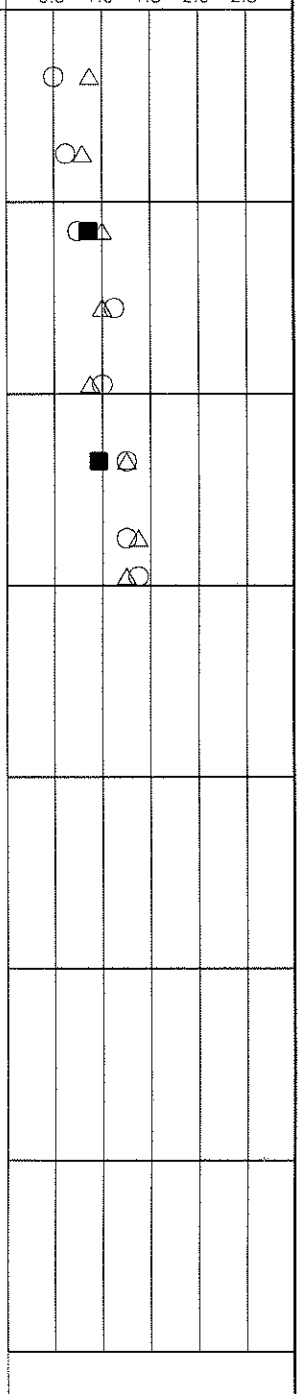
SURFACE ELEVATION : Existing Grade

DATE : 09-25-17

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : 0.0 TO 15.0 FT.
WET ROTARY : -- TO -- FT.

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE

ELEVATION, FEET	DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	NATURAL MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			FILL: stiff gray and dark gray fat clay w/ferrous nodules and ferrous stains		88.6	97	24.2	61	21	40
				Stiff gray and dark gray FAT CLAY (CH) w/ferrous stains and ferrous nodules				23.1			
	5			-stiff to very stiff gray and yellowish brown 4'-6'		87.6	102	22.4	57	19	38
				-w/calcareous nodules 4'-15'							
				-very stiff 6'-8'				26.9			
				-reddish brown and gray 6'-10'							
				-w/silty clay layer 8'-8.5'							
	10			-w/silt seams 8'-10'				25.6			
				-stiff to very stiff 8'-12'							
				-very stiff 12'-15'		92.7	101	24.9	63	24	39
								22.6			
	15							24.5			
	20										
	25										
	30										
	35										



DEPTH TO WATER IN BORING :
NO GROUNDWATER ENCOUNTERED DURING DRILLING.
HOLE OPEN TO 15.0 FT. AT END OF DRILLING.

Geotest Engineering, Inc.

LOG OF BORING NO. GB-2

PROJECT : Bel Road Extension and Linear Detention Ditch
Kemah, Texas

PROJECT NO. : 1140228601

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 15.0 FT.

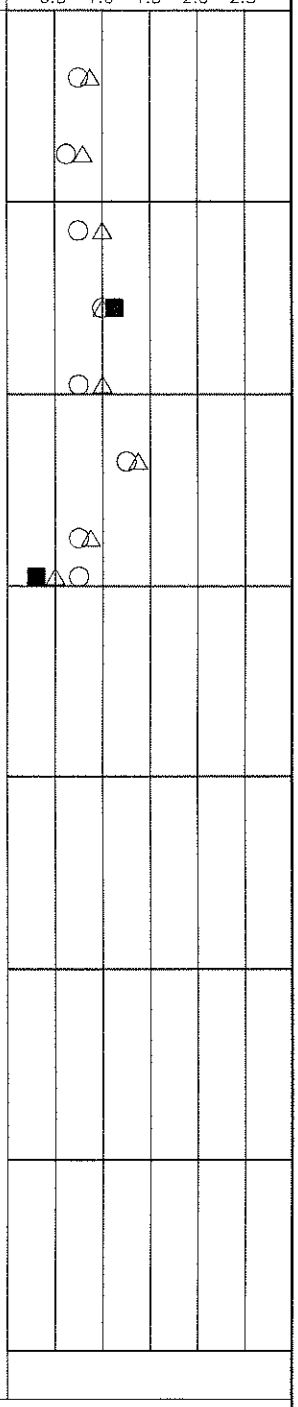
SURFACE ELEVATION : Existing Grade

DATE : 09-25-17

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : 0.0 TO 15.0 FT.
WET ROTARY : -- TO -- FT.

ELEVATION, FEET	DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	NATURAL MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			FILL: stiff yellowish brown and gray fat clay w/ferrous nodules, ferrous stains and grass roots			99	26.6			
				Stiff yellowish brown and gray and dark gray FAT CLAY (CH) w/ferrous stains and ferrous nodules		89.8		27.9	74	25	49
	5			-w/calcareous nodules 2'-10'				22.4			
				-stiff to very stiff 4'-6'							
				-very stiff 6'-8'		88.9	106	21.7	55	19	36
				-w/silt seams 6'-12'							
				-stiff to very stiff 8'-10'							
	10			-very stiff 10'-12'				19.4			
				-w/sand pockets 10'-14'							
								20.7			
				Stiff gray and brown LEAN CLAY (CL) w/sand and sand seams				17.6			
	15			-w/clayey sand layer 14'-15'		36.8	117	18.2	30	16	14
	20										
	25										
	30										
	35										

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE



DEPTH TO WATER IN BORING :
NO GROUNDWATER ENCOUNTERED DURING DRILLING.
HOLE OPEN TO 15.0 FT. AT END OF DRILLING.

Geotest Engineering, Inc.

FIGURE A-2

LOG OF BORING NO. GB-3

PROJECT : Bel Road Extension and Linear Detention Ditch
Kemah, Texas

PROJECT NO. : 1140228601

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 15.0 FT.

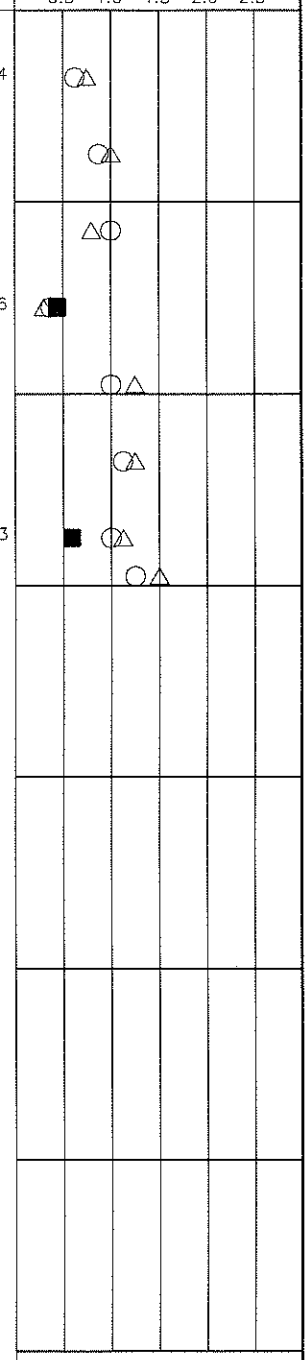
SURFACE ELEVATION : Existing Grade

DATE : 09-25-17

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : 0.0 TO 15.0 FT.
WET ROTARY : -- TO -- FT.

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE

ELEVATION, FEET	DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	NATURAL MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			FILL: stiff gray and yellowish brown fat clay w/grass roots, calcareous nodules, and sand seams		90.0	103	23.7	57	23	34
				Stiff to very stiff gray and dark gray FAT CLAY (CH) w/sand seams				20.5			
	5			-w/calcareous and ferrous nodules and ferrous stains 4'-6'				22.0			
						94.3	102	26.4	35	19	16
				Medium stiff brown LEAN CLAY (CL) w/silt and sand seams				30.2			
	10			Very stiff yellowish brown and gray FAT CLAY (CH) w/calcareous and ferrous nodules and ferrous stains				29.2			
				-stiff to very stiff 12'-14'		96.0	99	28.5	70	27	43
	15							22.8			
	20										
	25										
	30										
	35										



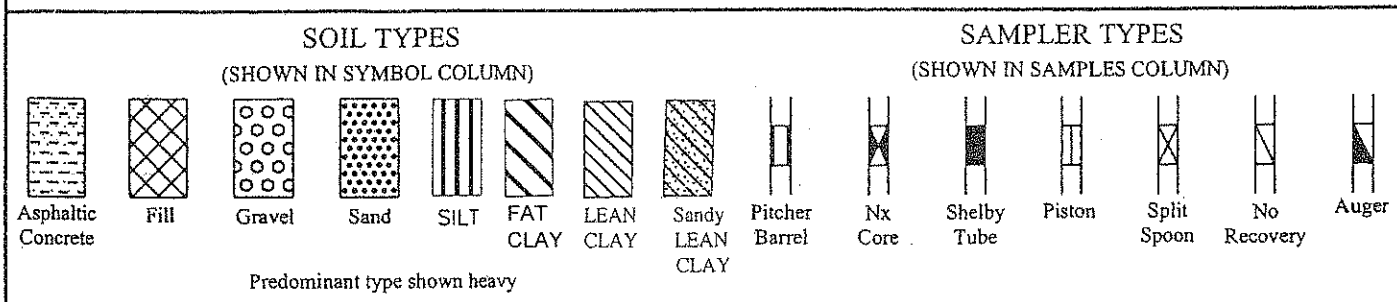
DEPTH TO WATER IN BORING :
NO GROUNDWATER ENCOUNTERED DURING DRILLING.
HOLE OPEN TO 15.0 FT. AT END OF DRILLING.

Geotest Engineering, Inc.

FIGURE A-3

Job No. 1140228601

SYMBOLS AND TERMS USED ON BORING LOGS



TERMS DESCRIBING CONSISTENCY OR CONDITION

Basic Soil Type	Density or Consistency	Standard Penetration Resistance, (1) Blows/ft.	Unconfined Compressive Strength (q_u), (2) Tons/sq. ft.
Cohesionless	Very loose	Less than 4	Not applicable
	Loose	4 to <10	Not applicable
	Medium dense	10 to <30	Not applicable
	Dense	30 to <50	Not applicable
	Very dense	50 or greater	Not applicable
Cohesive	Very soft	Less than 2	Less than 0.25
	Soft	2 to <4	0.25 to <0.5
	Firm/Medium stiff	4 to <8	0.5 to <1.0
	Stiff	8 to <15	1.0 to <2.0
	Very stiff	15 to <30	2.0 to <4.0
	Hard	30 or greater	4 or greater

(1) Number of blows from 140-lb. weight falling 30-in. to drive 2-in. OD, 1-3/8-in. ID, split barrel sampler (ASTM D1586)

(2) q_u may also be approximated using a pocket penetrometer

TERMS CHARACTERIZING SOIL STRUCTURE

Parting: -paper thin in size Seam: -1/8" to 3" thick Layer: -greater than 3"

Slickensided	- having inclined planes of weakness that are slick and glossy in appearance.
Fissured	- containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.
Laminated	- composed of thin layers of varying color and texture.
Interbedded	- composed of alternate layers of different soil types.
Calcareous	- containing appreciable quantities of calcium carbonate.
Well graded	- having wide range in grain sizes and substantial amounts of all intermediate particle sizes.
Poorly graded	- predominantly of one grain size, or having a range of sizes with some intermediate size missing.
Flocculated	- pertaining to cohesive soils that exhibit a loose knit or flakey structure.

GEOTEST ENGINEERING, INC.

Geotechnical Engineers & Materials Testing

5600 Bintliff Drive Houston, Texas 77036 Telephone: (713) 266-0588
Fax: (713) 266-2977

Report No. 1140228601
Addendum No. 1
July 30, 2018

Mr. Mark Havran, P.E.
LJA Engineering, Inc.
11821 East Freeway, Suite 360
Houston, Texas 77029

Re: Geotechnical Investigation
Proposed Addition to Bel Road Extension
Kemah, Texas
LJA Job No. E135-340

Dear Mr. Havran:

We are pleased to provide the following additional geotechnical recommendations as an addendum to the final geotechnical report, Geotest Report No. 1140228601 dated April 23, 2018 for the referenced project.

This addendum report addresses geotechnical recommendations for the proposed storm sewer installation and roadway construction for the proposed addition to Bel Road Extension. The proposed addition to Bel Road Extension involves design and construction of approximately 600 linear feet of new concrete pavement roadway with curb-and-gutter running northwesterly from the west terminus of the originally proposed Bel Road Extension. The proposed addition involves installation of storm sewer with a maximum invert depth of 5 feet below existing grade. The vicinity map is presented on Figure 1.

Field Investigation

Subsurface conditions along the proposed alignment of the proposed addition to Bel Road Extension were investigated by drilling one (1) soil boring (GB-4) to a depth of 15 feet below the existing grade. The boring was drilled with a truck-mounted rotary drilling rig using dry-auger. The boring location is shown on Figure 2, Plan of Boring. The survey data (Sta. No. offset and

ground surface elevation) of completed boring was not provided to us at the time of preparation of this report.

Laboratory Testing Programs

The laboratory testing program was designed to evaluate the pertinent physical properties and shear strength characteristics of the subsurface soils. Classification tests were performed on selected samples to aid in soil classification.

The shear strength of cohesive samples was measured in the field with a calibrated pocket penetrometer and in the laboratory with a Torvane. The shear strength values obtained from the penetrometer and Torvane are plotted on the boring log as open circles and triangles, respectively.

Moisture content and dry unit weight were measured for selected cohesive soil samples for each boring. Moisture content measurements (ASTM D2216) were also made on other samples to establish the moisture profile at each boring location. Atterberg limit tests (ASTM D4318) were performed on soil samples to measure plasticity characteristics. The results of all these tests are plotted or summarized on the boring log GB-4 and presented on Figure A-1 in Appendix A.

Subsurface Soil

The subsurface soils below the existing grade, as revealed by boring GB-4 drilled along the proposed alignment of the proposed addition, consist of soft to very stiff dark gray, gray, grayish brown, yellowish brown and brown fat clay, fat clay with sand and lean clay with sand with ferrous and calcareous nodules and ferrous stains to the explored depth of 15 feet. Fill material consisting of stiff dark gray and brown fat clay with sand seams, calcareous nodules and ferrous stains and grass roots was encountered to a depth 2.0 feet below existing grade.

The fat clay soils are of high plasticity with liquid limits ranging from 52 to 62 and plasticity indices ranging from 31 to 39. The lean clay soils are of high plasticity with a liquid limit of about 39 and a plasticity index of about 22.

The percent fines content (passing No. 200 sieve) of the fat clay was about 85.8 percent. The percent fines content of the fat clay with sand and lean clay with sand soils ranged from 70.1 to 84.8 percent. A complete description of the soils encountered is presented on the boring log GB-4 shown on Figure A-1, in Appendix A.

No free water was observed during drilling.

Geotechnical Recommendations

Open-cut Excavations. Based on the soil conditions revealed by the boring, geotechnical parameters were developed for the design of open-cut excavations for the installation of the proposed storm sewer. The geotechnical design parameters are provided in Table 1. For design, the water level in the ground should be assumed to be at the ground surface, since this condition may exist after a heavy rain or flooding. Open-cut excavations should be performed in accordance with Section 5.2 of the original geotechnical investigation report (Report No. 1140228601 dated April 23, 2018).

Structures. Structures associated with this project will be storm sewer manholes and inlet structures. Based on the information provided to us the storm sewer manholes and inlet structures will be placed at a maximum depth of approximately 5 feet below the existing grade. The design criteria and recommendations provided in Section 5.3 of the original geotechnical investigation report (Report No. 1140228601 dated April 23, 2018) should be followed for the design and construction of the manholes.

Pavement Structure Design. It is understood that the proposed addition to the Bel Road Extension will be constructed with a new concrete pavement with curb-and-gutter streets. The pavement design presented below was developed in accordance with "AASHTO Guide for Design of Pavement Structures," 1993 Edition.

Subgrade Soil Properties. California Bearing Ratio (CBR) tests were not within the scope of this project. Therefore, the roadbed soil resilient modulus is estimated based on physical properties and strength characteristics of the natural subgrade soils. Based on the

physical properties and strength characteristics of the natural subgrade soils obtained from laboratory tests, the effective roadbed soil resilient modulus (M_R) was estimated to be about 1,941 psi from an assumed CBR value of 1.0. Based on an estimated resilient modulus of the 8-inch lime-stabilized subgrade, the effective modulus of subgrade reaction (k) is estimated to be about 49 pci.

Same Traffic Data and Other Design Parameters used in the design of the original Bel Road Extension project are (Report No. 1140228601 dated April 23, 2018) utilized in the development of the recommended pavement thickness for this proposed addition.

Recommended Pavement Section. Based on the design parameters described above and the AASHTO design procedures, the thickness of rigid pavement was determined. The recommended pavement section is given below:

Street	**Course**	**Thickness, inches**
Addition to Bel Road Extension	Jointed Reinforced Concrete	7
	6% Lime Stabilized Subgrade	8

For the 7-inch concrete pavement, the required longitudinal reinforcing steel for an expansion joint spacing of 80 feet and transverse reinforcement steel for a pavement width of 25 feet back to back are given below for the grade 40 steel.

Pavement Thickness (Inches)	**Longitudinal Steel**	**Transverse Steel**
	Center to Center Spacing (in)	**Center to Center Spacing (in)**
	# 4 bars	# 4 bars
7	18	18

The expansion joint spacing will be 80 feet and the contraction joint/sawcut spacing will be about 20 feet.

Preparation of Pavement Subgrade

The pavement subgrade should be prepared in accordance with Section 5.4.3 of Geotest Report No. 1140228601 dated April 23, 2018.

Select Fill

Select fill material (if any) should be in accordance with Section 5.4.4 of Geotest Report No. 1140228601 dated April 23, 2018.

This report has been prepared for the exclusive use of City of Kemah and LJA Engineering, Inc. for the addition to Bel Road Extension – LJA Job No. E135-0340 in the City of Kemah, Texas.

This report shall not be reproduced without the written permission of Geotest Engineering, Inc., LJA Engineering, Inc. or the City of Kemah, Texas.

* * * * * * * * * * * *

The following illustrations are attached and complete this addendum report.

ILLUSTRATIONS

	Figure
Vicinity Map	1
Plan of Boring	2

APPENDIX A

	Figure
Log of Borings	A-1
Symbols and Terms used on Boring Logs	A-2

* * * * * * * * * * * *

We appreciate this opportunity to be of service to you. Please call us, when we can be of further assistance.

Very truly yours,
GEOTEST ENGINEERING, INC.
TBPE Registration No. F-410

7/30/18

Worku Y. Mergia, P.E.
Project Engineer

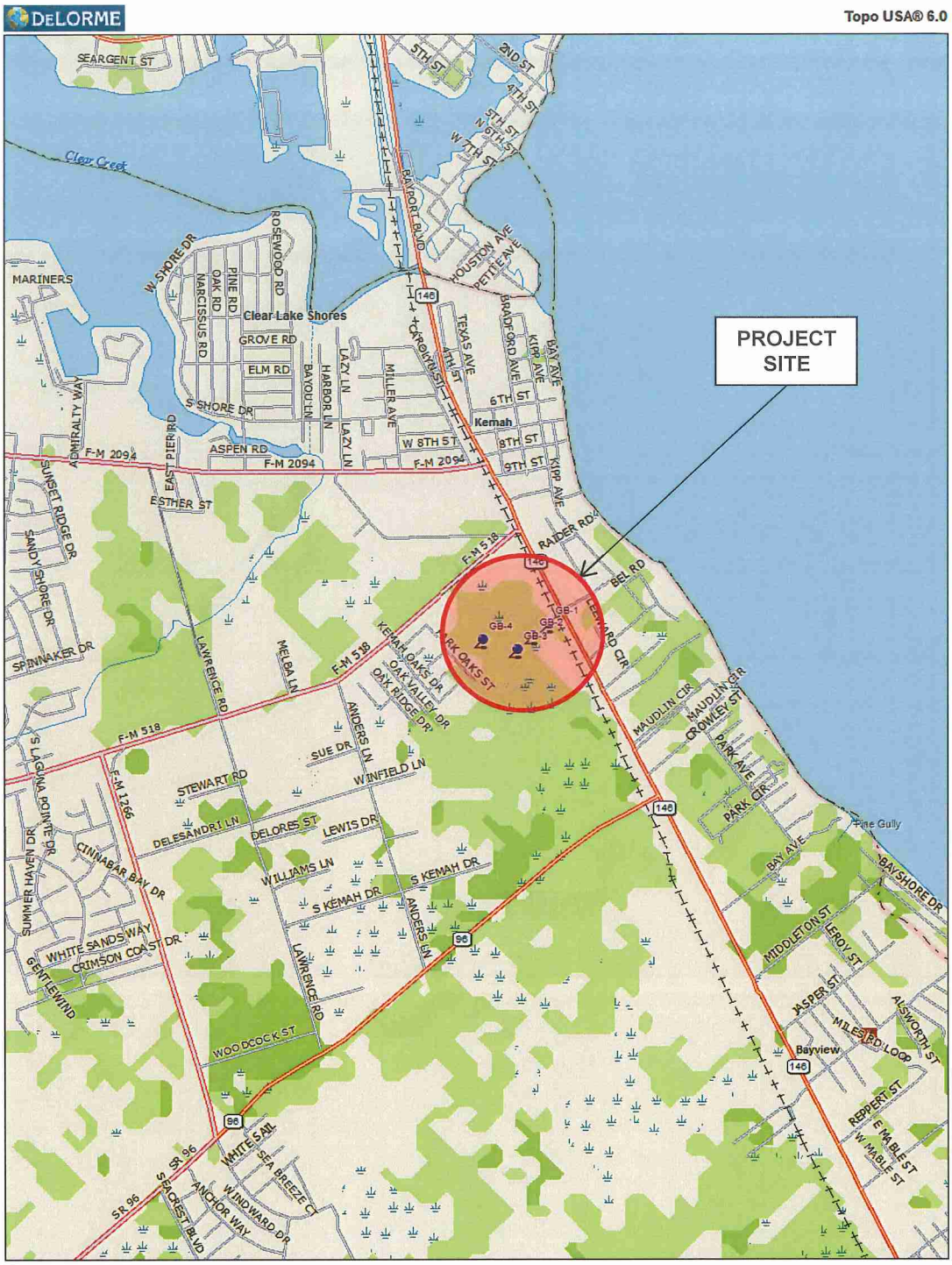
STATE OF TEXAS
WORKU Y. MERGIA
115879
LICENSED
PROFESSIONAL ENGINEER

Copies Submitted: (1-PDF)
PC38\Geotechnical\40228601_Addendum1.doc

ILLUSTRATIONS

	Figure
Vicinity Map	1
Plan of Borings	2

Job No. 1140228601



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MN (2.2° E)

0 800 1600 2400 3200 4000 ft

Data Zoom 13-0

PROPOSED ADDITION TO BEL ROAD EXTENSION
KEMAH, TEXAS

VICINITY MAP

Geotest Engineering, Inc.

FIGURE 1

Job No. 1140228601

PLAN OF BORINGS

FIGURE 2

Revision	By	Chk.	Appr.	Date

CITY OF KEMAH
BEL ROAD EXTENSION
& LINEAR DETENTION DITCH

KEMAH MARKET PLACE
BEL ROAD EXTENSION

LJA Engineering, Inc.
11821 East Freeway
Suite 360
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

DESIGN: M.E.H.	JOB No. E135-0320 Cont. No.
DRAWN: P.R	DATE: MAY, 2018
CHECKED:	SCALE:
APPROVED:	SHEET No. Of 24

H:\ACAD\Clients\135\0320\Exhibits\Kemah Marketplace - Bel Road Extension.dwg (XREF: 135-0320 Border)

05/24/18

APPENDIX A

	Figure
Log of Borings	A-1
Symbols and Terms used on Boring Logs	A-2

LOG OF BORING NO. GB-4

PROJECT : Bel Road Extension and Linear Detention Ditch
Kemah, Texas

PROJECT NO. : 1140228601

LOCATION : See Plan of Borings (Figure 2)

COMPLETION DEPTH : 15.0 FT.

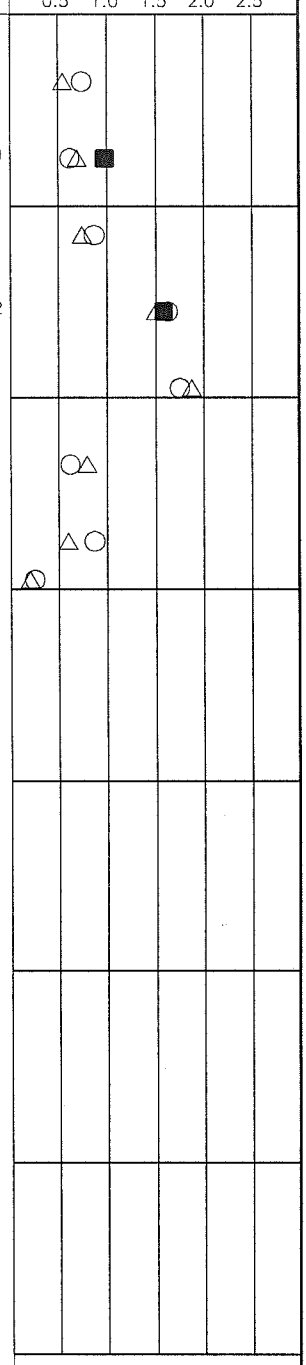
SURFACE ELEVATION : Existing Grade

DATE : 06-22-18

SAMPLER : Shelby Tube/Split Spoon
DRY AUGER : 0.0 TO 15.0 FT.
WET ROTARY : -- TO -- FT.

UNDRAINED SHEAR STRENGTH, TSF
○ HAND PENETROMETER
● UNCONFINED COMPRESSION
■ UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION
△ TORVANE

ELEVATION, FEET	DEPTH, FEET	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	STANDARD PENETRATION TEST, BLOWS PER FOOT	PERCENT PASSING NO. 200 SIEVE	DRY UNIT WEIGHT, PCF	NATURAL MOISTURE CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	PLASTICITY INDEX, %
	0			FILL: stiff dark gray and brown fat clay w/sand seams, calcareous nodules, ferrous stains and grass roots			105	21.6			
						84.8	103	21.9	62	23	39
	5			Stiff to very stiff dark gray and brown FAT CLAY (CH) w/sand, ferrous and calcareous nodules, and ferrous stains -w/grass roots 2'-4' -stiff grayish brown 4'-6'				22.3			
						70.1	113	18.7	39	17	22
	10			Very stiff grayish brown and yellowish brown LEAN CLAY (CL) w/sand, ferrous and calcareous nodules, and ferrous stains				20.5			
								33.4			
				Very stiff grayish brown and yellowish brown FAT CLAY (CH) w/sand seams -w/ferrous nodules and ferrous stains 8'-10' -stiff reddish brown and gray 10'-14' -w/sand on bottom 12'-14' -soft to medium stiff 14'-15'		85.8		27.6	52	21	31
	15							26.4			
	20										
	25										
	30										
	35										



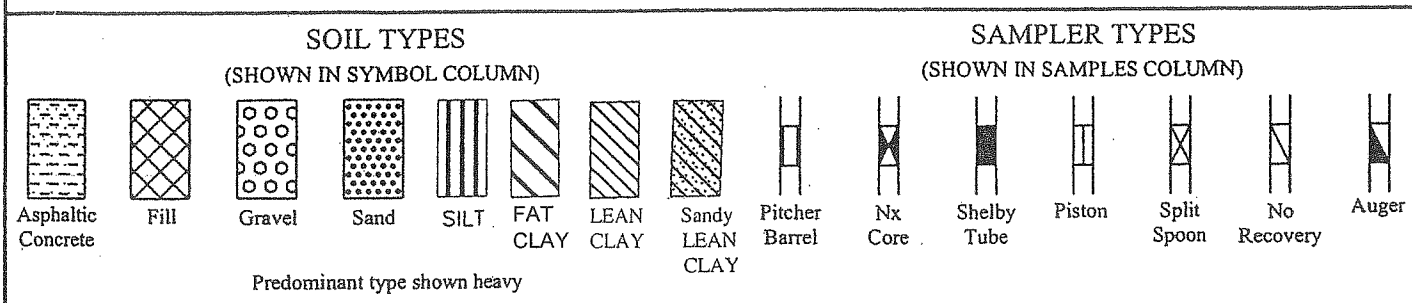
DEPTH TO WATER IN BORING :
NO GROUNDWATER ENCOUNTERED DURING DRILLING.
HOLE OPEN TO 15.0 FT. AT END OF DRILLING.

Geotest Engineering, Inc.

FIGURE A-1

Job No. 1140228601

SYMBOLS AND TERMS USED ON BORING LOGS



TERMS DESCRIBING CONSISTENCY OR CONDITION

Basic Soil Type	Density or Consistency	Standard Penetration Resistance, (1) Blows/ft.	Unconfined Compressive Strength (q_u), (2) Tons/sq. ft.
Cohesionless	Very loose	Less than 4	Not applicable
	Loose	4 to <10	Not applicable
	Medium dense	10 to <30	Not applicable
	Dense	30 to <50	Not applicable
	Very dense	50 or greater	Not applicable
Cohesive	Very soft	Less than 2	Less than 0.25
	Soft	2 to <4	0.25 to <0.5
	Firm/Medium stiff	4 to <8	0.5 to <1.0
	Stiff	8 to <15	1.0 to <2.0
	Very stiff	15 to <30	2.0 to <4.0
	Hard	30 or greater	4 or greater

(1) Number of blows from 140-lb. weight falling 30-in. to drive 2-in. OD, 1-3/8-in. ID, split barrel sampler (ASTM D1586)

(2) q_u may also be approximated using a pocket penetrometer

TERMS CHARACTERIZING SOIL STRUCTURE

Parting: -paper thin in size Seam: -1/8" to 3" thick Layer: -greater than 3"

Slickensided	- having inclined planes of weakness that are slick and glossy in appearance.
Fissured	- containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.
Laminated	- composed of thin layers of varying color and texture.
Interbedded	- composed of alternate layers of different soil types.
Calcareous	- containing appreciable quantities of calcium carbonate.
Well graded	- having wide range in grain sizes and substantial amounts of all intermediate particle sizes.
Poorly graded	- predominantly of one grain size, or having a range of sizes with some intermediate size missing.
Flocculated	- pertaining to cohesive soils that exhibit a loose knit or flakey structure.

PIPELINE - LETTERS OF NO OBJECTION

CELANESE

Kyle Vincent

From: Erb, Vaughn D., Celanese <Dan.Erb@celanese.com>
Sent: Thursday, February 1, 2018 4:22 PM
To: Kyle Vincent
Subject: FW: Celanese Pipeline Analysis for Bel Road Work by City of Kemah
Attachments: 1102 - 6 feet deep-no pavement-1480 psi.pdf; 1102 - 6 feet deep-rigid pavement-1480 psi.pdf; 1102 - 3 feet deep-no pavement-1480 psi.pdf; 1102 - 3 feet deep-no pavement-0 psi.pdf; WLA - 6 feet deep-no pavement-1480 psi.pdf; WLA - 6 feet deep-no pavement-0 psi.pdf; WLA - 3 feet deep-no pavement-1480 psi.pdf; WLA - 3 feet deep-no pavement-1480 psi - 80,000 lb load.pdf; Cases-Assumptions.docx

Kyle,

Here is our response to your road.

Thanks

Dan Erb
Celanese
Senior Specialist II
Ph 281-474-6419
Cell 832-651-8542
Dan.erb@celanese.com

The information contained in this e-mail, and any attachments thereto, is confidential and is intended only for use by the individual(s) and/or entity named above. If you are not the intended recipient of this e-mail, you are hereby notified that any dissemination, distribution or copying of this communication or any disclosure of the contents of this communication to others is strictly prohibited. If you have received this communication in error, please notify the sender immediately by replying to this e-mail. Please then delete the original including all attachments and any copy of any e-mail and printout thereof.

From: Clements, Casey S., Celanese
Sent: Thursday, February 01, 2018 3:53 PM
To: Erb, Vaughn D., Celanese <Dan.Erb@celanese.com>
Cc: Sarager, Lincoln M., Celanese <lincoln.sarager@celanese.com>; Smith, Jeremy, Celanese <jeremy.smith@celanese.com>; Cox, Ronald, Celanese <Ronald.Cox@celanese.com>; Gattis, Tiffany, Celanese <tiffany.gattis@celanese.com>; Gottlieb, Adam, Celanese <adam.gottlieb@celanese.com>
Subject: Celanese Pipeline Analysis for Bel Road Work by City of Kemah

Dan,

All the analysis done shows the proposal by Kemah is safe for the vehicle traffic as proposed. Please note the precautions that Kemah should take in the email below highlighted in yellow from the engineering firm. All of the calcs are attached for reference.

Thanks,
Casey Clements
Project Manager
Celanese, Major Projects
O: +1 281-474-6385

C: +1 281-786-6852

From: Kramer, Dale (WG Mustang)
Sent: Wednesday, January 31, 2018 2:16 PM
To: Price, Sterling (WG Mustang)
Cc: Sweat, Allyn (WG Mustang); McLeod, Brett (WG Mustang)
Subject: RE: Celanese Pipeline Analysis for Road Work

Sterling:

I have run 8 different cases (4-API 1102 and 4-Wheel Load Analyses) on Pipeline Toolbox, and the pipeline seems relatively safe during construction, assuming that my assumptions are valid. I tried to pick the least conservative assumptions, and yet it passed every trial.

From my past experiences with construction over pipelines, I would recommend the following precautions to the road construction contractor:

- Require 48-hour notice before construction begins;
- Notice is required before crossing the pipeline with heavy equipment;
- Reserve the right to have a pipeline representative stationed along pipeline right-of-way when work is being done;
- Require at least 4 feet of cover above the pipeline at locations where construction activities will take place over the pipeline;
- Require physical verification of the pipeline prior to open cut near the Celanese pipeline;
- Require the use of matting over the pipeline at locations where construction activities will take place over the Celanese pipeline, at the discretion of Celanese's field representative;
- Require at least 5 feet of clearance from the top of the access road surface to the top of the Celanese pipeline;
- All mechanical digging equipment approved to work within the Celanese easement must have the teeth removed or barred with a plate welded across the teeth;
- No placement of excavated material over the pipeline;
- No large vibratory compaction equipment is allowed within the pipeline right-of-way, only walk-behind vibratory roller/compactor is allowed when working over the Celanese pipeline;
- Any excavation completed within 2 feet of the pipeline will be done by hand;
- No power poles in the pipeline ROW;
- Fence posts will not be allowed within 5 feet of the centerline of the Celanese pipeline;
- No large landscaping or permanent structures in Celanese easement;
- Landowner will be responsible for all future damage to the fence in the event that Celanese or its designee must access the pipeline and/or associated right-of-way to perform routine or emergency maintenance;
- Celanese Operations will install locks and have full access through gate at all times to perform routine and emergency maintenance;
- As-built drawings should be provided to Celanese.

If you want to discuss this further, please let me know. Thanks,

Dale Kramer
Sr. Principal Technical Professional
Wood.

CHEVRON

Acknowledgement of Line Crossing/Excavation Specifications Procedure

CALL TWO (2) WORKING DAYS BEFORE YOU DIG

Date _____ One Call Ticket #: _____

Applicant Representative: _____

Address _____

City, State, Zip _____

Phone _____ Fax _____ Email _____

Crossing/Excavation Location		Crossing/Excavation Description
State/County		
Section/Township/Range		
Lat/Long		
Route Code/Mile Post		

Applicant hereby acknowledges that it has reviewed the requirements set forth on the reverse and agrees to the following said requirements accordingly, specifically item(s): _____

1. It is understood that Applicant will construct the Line Crossing/Excavation at no expense to Chevron Pipeline Company (CPL), or its affiliates.
2. Applicant is cautioned that the area around the pipeline may be impacted by petroleum hydrocarbons, which may affect excavation and disposal techniques, increase costs, require appropriate construction materials, and cause crossing delay.
3. This Acknowledgement does not change or modify any provision of CPL's right-of-way contracts or easements.
4. Concerning One-Calls, CHEVRON PIPE LINE COMPANY is a sole operator separate from CHEVRON USA.
5. Applicant agrees to supply plans and drawings to CPL, if requested.
6. So that CPL may schedule its personnel - and not delay your work - please notify CPL 48 hours (excluding weekends and holidays) before work commences on or near its right-of-way.
7. Your local CPL representative is: _____ Cell Phone: _____

Site Drawing:

Special Provisions:

I acknowledge that I have received and reviewed with a CPL representative the specifications and requirements detailed in this document.

Applicant

By_____

Chevron Pipe Line Company Representative

By_____

Line Crossing/Excavation Specifications

Note: A Chevron Pipe Line Company representative must be present when any work is to occur on a Chevron Right Of Way.

1. BURIED LINE CROSSINGS

A. GENERAL REQUIREMENTS

1. An Authorized CPL representative must be on-site at CPL's discretion during excavation and clean-up work performed on the right-of-way.
2. All buried lines crossing the right-of-way must cross such that the angle measured between the proposed buried line and the right-of-way is not less than 45 degrees.
3. All buried lines should cross under the pipeline(s). If infeasible because of underground structures, heavy rock, or extreme depth of CPL's pipeline(s), approval must be granted by the Field Team Leader or designee.
4. All buried lines crossing the pipeline must maintain a recommended separation of 24 inches but not less than 12 inches between the two lines, with the same grade depth carried across the entire right-of-way.
5. Backfill at crossing must be selected material (without rocks). Bedding material must be compacted to 95% of standard proctor density by hand methods (vibratory plate or hand whacker) between the CPL's and the Applicant's pipeline. Bedding material above the pipelines must be compacted to 90% of standard proctor density when not under a road where a compaction to 95% of standard proctor density is needed.
6. Backfilling must meet requirements of DOT 49 CFR 195.252.
7. Existing lines not in compliance with these requirements must be brought into compliance when any work or repair is done on the line.
8. Signs must be placed at each edge of the right-of-way to mark the underground line and its angle of crossing. These signs are to be furnished and installed by the Applicant.
9. Any exceptions will be considered on an individual basis by the Field Team Leader or designee.
10. A vinyl direct buried warning tape must be placed 24 to 36 inches above the buried line and extended across the entire width of the right-of-way. The warning tape may be provided by CPL should the encroaching party not have access to such tape.

B. COMMUNICATION LINES (PHONE, TV, OTHER DATA LINES)

1. Must be installed in accordance with guidelines of the National Electrical Safety Codes.
2. Must be encased in a rigid nonmetallic conduit cross the full width of the right-of-way
3. Additional requirements for fiber optic installation - To prevent severing of the fiber optic lines during pipeline maintenance or construction, a burial depth of no less than 24 inches below CPL's pipelines or the placing of a 4-inch slab of concrete above and below the fiber optic across the entire with of the right-of-way is required. Discretion is given to Company field personnel for any additional requirements or variances.

C. POWER LINES

1. Must be installed in accordance with guidelines of the National Electrical Safety Code (public utility power and light companies) or the National Electrical Code (private power and light companies).
2. Must be encased in rigid nonmetallic conduit, and where voltage exceeds 600 volts must have 6 inches of red concrete over the top of the conduit for the full width of the right-of-way.
3. Must have minimum ground cover as follows: 24 inches for 0 to 600 volts; 30 inches for 601 to 22,000 volts; 36 inches for 22,001 to 40,000 volts and 42 inches for 40,000 volts and above.
4. If the power cable has a concentric neutral, a test point from the ground wire must be installed by the power company.

D. SEWER AND WATER LINES

1. Non-metallic pipes should be used.
2. Consult with engineering and Field Cathodic Protection (CP) Specialist when reinforced concrete storm drainpipe will be installed
3. Sewer line crossings are limited to tight lines only. Distribution lines for drain fields, perforated, or non-gasketed lines are not permitted within the right-of-way.

E. SUBSURFACE (PLASTIC) DRAIN TILE

These lines must have the express purpose of removing subsurface water and may not be used to infuse any type of water or product into the soil.

F. METALLIC PIPE CROSSINGS

1. A CPL Field CP Specialist must evaluate all metallic pipe crossings. The evaluation must include installation drawings review, field inspection, and interference testing. After evaluation the Field CP Specialist communicates coating and metallic bonding requirements to Applicant.
2. All metallic pipe crossings must have two (2) corrosion feet leads installed on CPL's pipeline and two on the crossing pipe at the point of intersection.
3. CPL personnel must install the leads on CPL's pipeline, and if requested, will also install the leads on the crossing pipe.
4. Metallic pipe crossings must have an electrical insulation coating for the full width of the right-of-way and extend at least 200 feet on either side of CPL's pipeline.
5. The pipeline coating and method of application is subject to CPL's approval.

2. ABOVE GROUND LINE CROSSINGS

1. Must meet the requirements of DOT 49 CFR 195.254.
2. For high voltage power transmission lines, every effort shall be made to cross the company pipeline at or as close to 90 degrees as possible.
3. Must maintain a minimum of 30 feet of clearance across the right-of-way.
4. Must have no poles or appurtenances located on the right-of-way if the width of the right-of-way is less than 90 feet. Wider right-of-ways may have poles located clear of the pipelines as determined by CPL.
5. Above ground crossings must not be above or closer than 25 feet horizontally to any gas escape vent (e.g., relief valve vent, station blowdown vent).

3. UNDERWATER LINE CROSSINGS

1. All underwater lines must cross the right-or-way such that the angle measured between the proposed buried line and the right-of-way is not less than 45 degrees.
2. All lines should cross over CPL's existing pipelines if practical, as it is the customary practice in the Gulf of Mexico.
3. Applicant must locate and mark the existing CPL pipeline using current industry practices prior to commencing pipeline construction in the vicinity of CPL's pipeline. Applicant agrees to mark the location of the pipeline by buoys or by electronic location methods as approved by CPL's representative during all construction activity in the vicinity of CPL's pipeline.
4. Applicant must place at CPL's disposal any diving inspectors Applicant may have retained for free and unobstructed use by CPL at this crossing. The divers will inspect the coating of CPL's line and evaluate the integrity of the line.
5. Applicant must place sacks filled with sand and cement or install articulated concrete mats to provide and maintain a minimum separation of 18 inches between the outer edges of the two (2) lines. The elevation of CPL's pipeline must not be adjusted.
6. Applicant must be responsible for any coating repair, pipe replacement, or product loss caused by any action by Applicant, its agents or employees during the construction, operation, or maintenance of the proposed pipeline.
7. Applicant's pipeline must comply with the minimum cover requirements as set out in DOT 49 CFR 195.248 for the transportation of hazardous liquids by pipeline and DOT 49 CFR 192.327 for the transportation of natural and other gas by pipeline.
8. Applicant must abide by all requirements set forth by the relevant pipeline crossing agreement.

4. EQUIPMENT

Normal loads acceptable to the State Highway Department may cross the pipeline where a minimum of 5.5 feet of cover is provided. Heavy equipment such as construction logging, etc., must cross pipeline only at approved crossing locations where the cover has been checked and determined adequate to meet bearing load requirements.

5. EXCAVATION

1. All excavation work within 2 feet of the pipeline must be approached with due caution regarding the safety and integrity of CPL's pipelines and related facilities. The soil surrounding the pipeline must be loosened with hand tools before it is removed by mechanical equipment as specified by the damage prevention laws of the State. Any heavy equipment used for excavation must be positioned so that no damage occurs to the pipeline.
2. Bend areas and other changes in direction must be marked to clearly delineate the CPL's pipe location. Set markers on straight pipeline sections at appropriate intervals not to exceed 100 feet (closer in areas of heavy congestion)
3. Facility marking should extend a reasonable distance beyond the bounds of the requested area.
4. Company pipelines in the close proximity must be individually marked and identified.
5. For CPL originated excavations please refer to CPL Excavation Procedure HES-202
6. Any plowing or ripping of soil on the right-of-way, including agriculture, at depths greater than 1 foot will be handled on an individual basis.

6. PIPELINE COVER

Any change in the amount of existing material (soil) on and over the right-of-way must be approved in advance.

DOW

The Dow Chemical Company

Tommy Jackson
Land & Right of Way
281-966-2498 Phone
281-966-4050 Fax
TMJackson@dow.com

P O Box 4286
Houston, TX 77210-4286
1254 Enclave Parkway
Houston, TX 77077-1607

September 27, 2018

City of Kemah
c/o LJA Engineering
11821 East Freeway, Suite 360
Houston, Texas 77029
Attention: Kyle Vincent

Sent via E-mail: kvincent@lja.com

RE: City of Kemah's Construction Plans for Bel Road Extension & Linear Detention Ditch Which Will Cross Dow Hydrocarbons and Resources LLC's 12" MSR, Seadrift Pipeline Company's 10" MB and 12" Lavaca 2000 and UCAR Pipeline Incorporated's 6" TX City to Groves Pipelines in Galveston County, Texas.

Dear Grant:

Dow Hydrocarbons and Resources LLC, Seadrift Pipeline Company and UCAR Pipeline Incorporated (collectively referred to as "Company") has no objection to the construction plans for Bel Road extension and linear detention ditch ("Facility") by City of Kemah ("Facility Owner") which will cross Company's existing easements containing the 12" MSR, 10" MB, 12" Lavaca 2000 and 6" TX City to Groves pipelines near Bel Road and Hwy 146 in Kemah, Galveston County, Texas, as shown in drawings provided, LJA Project No. E135-0320, Sheet 1 – 25 of 25, dated May 2018 and received via email January 23, 2018; provided that Facility Owner agrees and adheres to the following conditions:

1. **Design Plans and Specification**. Prior to commencing any operations covered by this Letter of No Objection, Facility Owner must submit to Company detailed design plans and specifications, including final plan and profile drawings, equipment and material specifications and construction methods and procedures ("Plans"). Company does not assume any liability for the Facility design or proper location, both of which will be the Facility Owner's sole responsibility. It is Facility Owner's responsibility to design, construct, and operate the Facilities and conduct all other activities under this Letter of No Objection in a safe and prudent manner and in compliance with all applicable governmental and regulatory requirements.

2. **Notice**. Facility Owner must notify Company's Field Technician at least 72 hours prior to any work near Company's pipeline(s). Contact for Company is:

Micah Choate, Field Tech – 713-858-2448 (Mobile)
Chris Perkins, Field Tech – 832-205-5035 (Mobile)

3. **One-Call Notifications**. Facility Owner must perform all "One-Call" damage prevention notifications as may be required by local, state or federal regulations prior to any excavation within Company's right of way.

4. **Crossings Under**. Facility Owner may install proposed Facility <u>under</u> Company's pipeline, provided a 36" solid vertical clearance must be maintained between the top of Facility and the bottom of the Company's pipeline. If the crossing is made by the use of directional drilling or other boring methods, Facility Owner must provide an inspection window or other suitable means to verify that the required clearance is maintained below Company's existing pipeline.

5. **Crossings Over**. Facility Owner may install proposed Facility <u>over</u> Company's pipeline, provided a 36" solid vertical clearance must be maintained between the bottom of Facility and the top of the Company's pipeline. If the crossing is made by the use of directional drilling or other boring methods, Facility Owner must provide an inspection window or other suitable means to verify that the required clearance is maintained above Company's existing pipeline.

6. **Relocation or Adjustments**. It is normal practice for proposed facilities to be installed beneath existing facilities. Facility Owner acknowledges and agrees that by installing the Facilities <u>over</u> Company's existing pipeline(s), Facility Owner will, at any time in the future, perform relocations or adjustments to its Facilities, as considered necessary by Company and will pay for or reimburse Company for additional costs which Company may incur in the operation, maintenance, repair or replacement of its pipeline(s), by virtue of the fact that the proposed Facilities are placed over rather than under Company's existing pipeline(s).

7. **Damages**. Company is not responsible for any damages to Facilities placed in Company's right-of-way resulting from any maintenance, repair or other work that may be required by the Company.

8. **Machine Excavation.** Machine excavation over Company's pipeline(s) may only be done with a bucket that has smooth sides and mouth or has the digging teeth barred. All digging with a bucket must be parallel with the pipeline(s). Digging may not be performed across or perpendicular to Company's pipeline(s). Excavation by mechanical means will only be allowed over and alongside Company's pipeline(s) to within 24" of Company's pipeline(s). Excavation closer than 24" to Company's pipeline(s) must be performed by hand.

9. **Ground Cover**. The ground cover over Dow's pipeline(s) may not be reduced below the existing grade.

10. **Angle of Crossing**. Facility Owner will install the Facility in a manner that any crossing of Company's existing pipeline(s) will cross at a horizontal angle of 90 deg. or as close to it as possible. In no event will the proposed Facilities be installed to cross Company's existing pipeline(s) at a horizontal acute angle less than 70 deg, or a horizontal obtuse angle greater than 110 deg.

11. **Cathodic Protection**. Facility Owner expressly understands and agrees that Company's pipeline(s) are cathodically protected and that (a) Facility Owner will operate and maintain its Facilities in a manner as not to interfere in any way with the cathodic protection of Company's pipeline(s); and (b) Company will have no liability to Facility Owner or to any third party as a result of any damages or other adverse effects which Company's cathodic protection may have on the Facilities or third party properties. Cathodic test lead stations must be installed on the Facilities and on Company's pipeline where it is practical and as required by Company.

12. **Precautions**. Facility Owner will take all necessary precautions, as determined by Company's on-site representative, to prevent stress, movement or damage to Company's existing pipeline(s). Such precautions or procedures may include the placement of mats over Company's right-of-way.

13. **Double Layer Matting**. Double Layer Matting will be required when crossing Company's existing pipeline and Right-of-Way with extreme loads and equipment. Company's on-site representative will determine if load or equipment is extreme.

14. **Road & Driveway Crossings**. Facility Owner may install proposed Facility over Company's pipeline, provided a 5 feet minimum coverage will be maintained between the top of Facility and the top of the Company's pipeline.

15. **Zero Load Slabs**. Zero load Slabs are required for all proposed road crossings over Company's existing pipelines if there is less than 60" of undisturbed soil between the top of Company's pipeline and the bottom of the proposed Facility. Requirements for complete Zero load Slab are listed in Exhibit A, attached and made a part of this Letter of No Objection.

16. **Work and Clean-Up**. All work and clean-up within Company's existing Right-of-Ways will be done to the satisfaction of Company's on-site representative.

17. **Indemnification.** ***To the extent of the law, Facility Owner must indemnify, hold harmless and defend Company, its agents, officers, directors, employees, shareholders, representatives, insurers, subsidiaries, and other affiliated companies ("Dow Group") from and against all claims, losses, costs (including attorney's fees and court costs and other costs of suit), demands, damages, judgments, penalties, liabilities, debts, expenses, and causes of action of whatever nature or character, and whether arising out of contract, tort, negligence, strict liability, breach of warranty, products liability, premises liability, misrepresentation, violation of applicable law, act or omission, or any cause whatsoever, ("Claims"), arising out of Facility Owner's presence on Company's property or this Letter of No Objection in any way. These obligations will apply to any claims asserted by or arising in favor of Facility Owner, its contractors or subcontractors, agents, representatives, employees, invitees, insurers, spouses, relatives, or any third party. Facility Owner's indemnity obligations will not apply to any Dow Group with respect to any Claim resulting from the Dow Group's sole negligence (other than imputed negligence).***

18. **Construction Commencement**. If construction work does not commence within 180 days of the date of acceptance, this Letter of No Objection will automatically expire. This Letter of No Objection, however, may be extended by the parties' mutual written agreement.

19. **Termination**. Company may terminate the Letter of No Objection immediately if there are any deviations from the Plans, or if Facility Owner fails to comply with any of the requirements contained in the Letter of No Objection.

20. **Definition of Facility Owner**. All references to Facility Owner include Facility Owner's employees, contractors and agents.

21. **"Including**." Unless the context requires otherwise, the term "including" means "included, but not limited to."

22. **Headings**. Headings are for convenience only and do not affect this Letter of No Objection's interpretation.

23. **Construction**. This Letter of No Objection will be construed as though both parties participated equally in its drafting. Any rule of construction that a document is to be construed against the drafting party will not apply to this Letter of No Objection.

24. **Choice of Law**. Texas law applies to this Letter of No Objection without regard to any choice-of-law rules that might direct the application of the law of any other jurisdiction. Any dispute regarding this Letter of No Objection will be adjudicated in the United States District Court for the Southern District of Texas or, if that court does not have jurisdiction, in the Judicial District Court for Harris County, Texas.

25. **Entire Agreement**. This Letter of No Objection constitutes the sole agreement of the parties with respect to its subject matter. It supersedes any prior written or oral agreements or communications between the parties. It may not be modified except in a writing signed by the parties.

26. **Severability.** If any part of this Letter of No Objection is for any reason held to be unenforceable, the rest of it remains fully enforceable. If any provision is held unenforceable, the parties will attempt to agree on a valid or enforceable provision that will be a reasonable substitute for the unenforceable provision.

27. **Successors and Representatives.** This Letter of No Objection binds and inures to the benefit of the parties and their respective heirs, personal representatives, and successors.

28. **Survival.** Any of this Letter of No Objection's terms and conditions which by their nature require performance or observance to occur after termination will survive this Letter of No Objection's termination.

29. **Waiver.** If either party fails to require the other to perform any of this Letter of No Objection's terms, that failure does not prevent the party from later enforcing that term. If either party waives the other's breach of a term, that waiver is not treated as waiving a later breach of the term.

Please sign below indicating your acceptance and agreement to the foregoing terms and return to me by e-mail, fax or mail prior to beginning work. Please also provide a copy for your construction inspector to retain on site during performance of the crossing. Please let me know if I can be of further assistance.

Sincerely,

Tommy Jackson

Tommy Jackson
Manager, Land & Right-of-Way

Cc: Micah Choate
Chris Perkins
Mike Joyce

Agreed and Accepted:

City of Kemah

Name: Carl A. Joiner

Signature: CARL A. JOINER

Title: MAYOR

Date: 10/18/18

ENTERPRISE

Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

LETTER OF NO OBJECTION

Expires: March 21, 2019

September 21, 2018

Kyle Vincent
LJA Engineering
11821 East Freeway, Suite 360
Houston, TX, 77029

RE: REQUEST FOR ENCROACHMENT ACROSS THE MCO - TEXAS CITY #26
DIAMOND KOCH; LID #42663; TRACT #G-2 (L1788); DB-11623
LETTER OF NO OBJECTION – [GALVESTON COUNTY, TEXAS

Dear Mr. Vincent:

This letter is to memorialize our understanding regarding your request on behalf of the City of Kemah ("ENTITY") regarding ENTITY'S proposed construction of a proposed roadway and storm water utility as per plans and/or specifications from LJA Engineering, Inc. dated May 2018, a copy of which are attached hereto as Exhibit A (collectively referred to as the "ENCROACHMENT") crossing the "MCO - Texas City #26" pipeline (the "PIPELINE") of Enterprise Products Operating LLC ("COMPANY") located within the license area as depicted on the GIS map attached hereto as Exhibit B and further described in that certain Supplemental Agreement from Union Pacific Railroad Company to Enterprise Products Operating LLC dated October 06, 2017 and further identified as Audit No. S719782. (the "EASEMENT").

COMPANY is committed to protecting the environment and the health and safety of our employees, contractors, customers and the public by conducting its business in a safe and environmentally responsible manner. Activity that may disturb the PIPELINE, its appurtenant assets or its support structure can pose a threat to the environment, persons and public safety. Consequently, we request that ENTITY adhere to this same commitment to the environment and safety when undertaking construction of the ENCROACHMENT in and around the EASEMENT. At this time, COMPANY will not make an objection to the proposed ENCROACHMENT, conditioned upon ENTITY'S understanding of the following:

1. A minimum of 48 hours (excluding weekends and holidays) prior to commencing construction activities relating to the ENCROACHMENT, ENTITY will (i) confirm that the local One-Call has been notified of the construction activities (ENTITY or its agents may contact One-Call by dialing 811) and (ii) contact COMPANY'S Operations representative John Walston at (281) 478-2106, so that Mr. Walston or his designated representative can be present during any approved construction operations.

2. COMPANY'S designated representative in the field ("COMPANY'S REPRESENTATIVE") will have the right to observe the construction of the ENCROACHMENT. ENTITY understands that COMPANY'S REPRESENTATIVE may suspend any work activities on the ENCROACHMENT if COMPANY'S REPRESENTATIVE, in his sole and absolute discretion, determines that such activities are in violation of any applicable law, ordinance or regulation or pose an imminent risk of bodily injury or death to persons, a threat to the environment or damage to the PIPELINE.

3. The following language must be conspicuously displayed on all drawings depicting the PIPELINE:

WARNING! HIGH PRESSURE PIPELINE
Excavation and/or Construction Prohibited without Prior Written Permission From
Enterprise Products Operating LLC

P.O. BOX 4324
HOUSTON, TEXAS 77210-4324
713.381.6500

9420 WEST SAM HOUSTON PARKWAY NORTH
HOUSTON, TEXAS 77064-6317
www.enterpriseproducts.com

4. COMPANY will require physical verification of the PIPELINE depth of cover and alignment, at ENTITY'S expense, prior to work being performed near the PIPELINE. Physical verification may be via hydro-excavation or any other method approved by COMPANY'S REPRESENTATIVE. If the PIPELINE is not at the anticipated alignment or depth, ENTITY shall adjust accordingly at no expense to COMPANY or its affiliates.

5. ENTITY'S road crossing will be as close to ninety (90) degrees as possible to the PIPELINE, but not less than forty-five (45) degrees. ENTITY'S road crossing will be installed in such a way that a minimum vertical separation of seven feet and six inches (7' 6") is maintained between the top of the PIPELINE and the top of the paved surface.

6. ENTITY will install the aforementioned storm sewer culvert via the open excavation construction method. It shall be installed over and parallel to the PIPELINE in such a way that a minimum vertical separation of four feet and seven inched (4' 7") between the top of the PIPELINE and the bottom of ENTITY'S sewer line is maintained. ENTITY will install warning tape in accordance with the American Public works Association (APWA) Uniform Color Code, above the storm sewer line, twelve inches (12") below ground, extending at least twenty feet (20') in each direction measured from the crossing point.

7. ENTITY understands that moving heavy construction equipment across the PIPELINE and/or the EASEMENT can damage the PIPELINE, thereby posing a threat to the environment and the safety of persons in the vicinity and the public. ENTITY will provide COMPANY with a **minimum of 72 hours notice** prior to crossing the PIPELINE with any heavy equipment. Wherever ENTITY is intending to cross the PIPELINE and/or the EASEMENT with heavy equipment, ENTITY will place timber matting, with a minimum thickness of eight inches (8") or other suitable material over the PIPELINE as determined by COMPANY'S REPRESENTATIVE. NOTE: It is the responsibility of ENTITY to confirm that timber matting is constructed in a manner that will sustain proposed heavy equipment. No medium or large vibratory compaction equipment will be permitted to operate within ten feet (10') of the PIPELINE, only walk-behind vibratory rollers/compactors will be permitted to operate within ten feet (10') of the PIPELINE. ENTITY will maintain a minimum of five feet and nine inches (5' 9") of cover over the top of the PIPELINE at locations where construction or maintenance activities will take place over the PIPELINE.

8. ENTITY may place excavated material inside the EASEMENT, but may not place such material over the PIPELINE unless approved by COMPANY'S REPRESENTATIVE. Entity understands that no excavation or removal of cover will be permitted within the pipeline right-of-way without prior approval. No equipment will be allowed to work over the PIPELINE unless approved by COMPANY'S REPRESENTATIVE. COMPANY requires hand excavation to be performed within eighteen inches (18") plus half the diameter of the PIPELINE; however, at no point should mechanical excavation be performed less than two feet (2') from the PIPELINE. All mechanical digging equipment must have the teeth removed or barred with a plate welded across the teeth, no detachable implements will be allowed.

9. ENTITY will not place large landscaping with a mature untrimmed height greater than eighteen inches (18") on the EASEMENT. No trees will be permitted on the EASEMENT and COMPANY reserves the right to trim the canopy of any trees adjacent to the EASEMENT to prevent overhang onto the EASEMENT. Excluding the ENCROACHMENT, no permanent structures will be permitted on the EASEMENT.

10. Any and all use of the EASEMENT for temporary workspace and any and all crossings of the PIPELINE must be approved by COMPANY'S REPRESENTATIVE, provided, however, that such approval shall not be unreasonably withheld. ENTITY agrees to clean up and repair all damages to the EASEMENT resulting from any ENTITY'S use of, or work on or across, the EASEMENT.

Any and all damage repairs and cleanup of the EASEMENT will be subject to COMPANY'S acceptance.

11. The existence of the ENCROACHMENT does not modify or constitute a waiver of COMPANY'S rights under the EASEMENT or any other rights which may be implied by law or equity; and COMPANY expressly reserves all such rights.

12. ENTITY understands that COMPANY'S issuance of this letter of no objection was based on many factors, including the circumstances of the COMPANY, the EASEMENT, the PIPELINE and COMPANY'S business at the time issued and in the future these factors and circumstances can change. COMPANY'S issue of no objection to the construction of the ENCROACHMENT will **expire six (6) months from the date of this letter**, unless ENTITY has commenced and diligently continued construction of the ENCROACHMENT. If ENTITY is unable to commence construction of the ENCROACHMENT within six (6) months after the date of this letter or, if after timely commencement of construction of the ENCROACHMENT, suspends construction thereof for a period greater than six (6) months, and ENTITY still intends to construct and/or complete construction of the ENCROACHMENT, ENTITY must resubmit the construction plans for the ENCROACHMENT, whether or not such plans have changed, for review by COMPANY and COMPANY, in its sole and absolute discretion, will determine whether it will have no objection at that time to such plans as resubmitted.

If you believe anything set forth in this letter misstates our understanding or if you require more information or clarification of any matters set forth herein, please contact the undersigned at your soonest convenience. The undersigned can be reached via e-mail at skabzinski@eprod.com.

Regards,

Stan Kabzinski
Land - Encroachments

cc: John Walston
Ed Sangel
Donail Biggers
Paul Lair

DB 11623

CITY OF KEMAH
CONSTRUCTION PLANS FOR:

MAYOR
CARL JOINER

POSITION 1
TERESA VAZQUEZ-EVANS

POSITION 2
WANDA ZIMMER

POSITION 3
KYLE BURKS

POSITION 4
ROBIN COLLINS

POSITION 5
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THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

MARK E. HAVRAN
TEXAS P.E. NO. 118610
DATE: MAY, 2018

BEL ROAD EXTENSION
& LINEAR DETENTION DITCH

LJA PROJECT NO. E135-0320
MAY, 2018

LJA Engineering, Inc.
11821 East Freeway
Suite 360
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

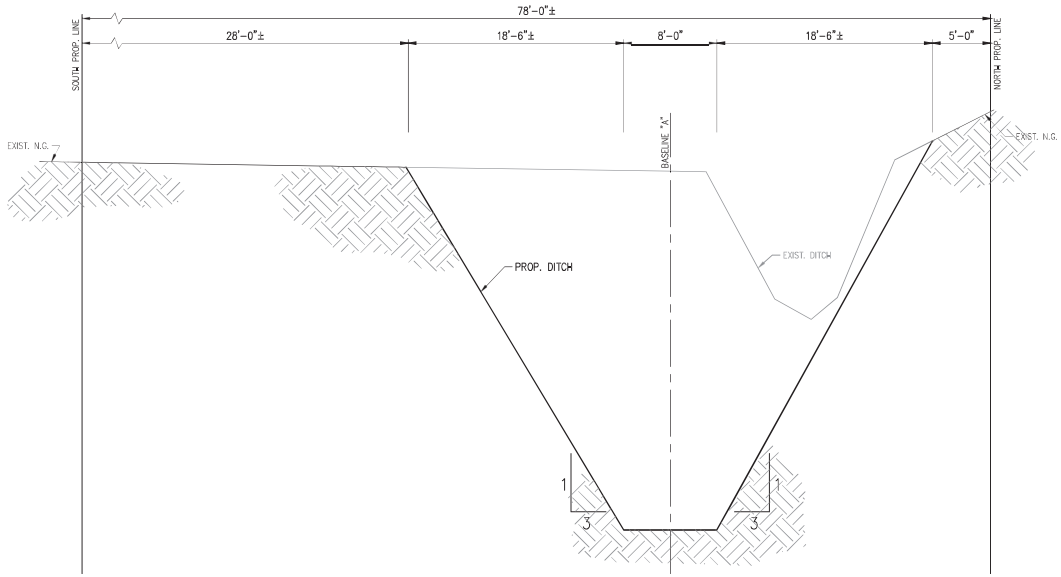
Exhibit A

01/08/18

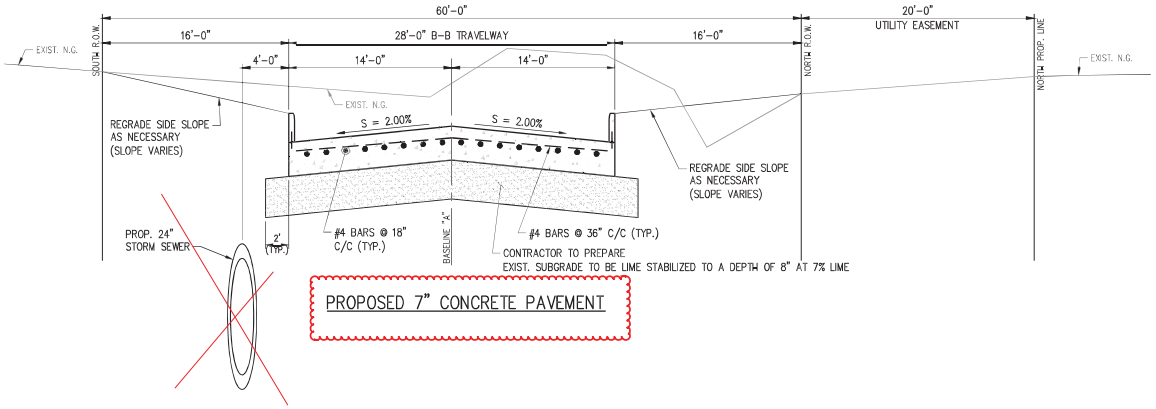
H:\ACAD\Clients\135\0320\Design\135-0320-01 Cover.dwg (XREF)

DB 11623 (Page 2)

Exhibit A



PROPOSED DITCH



PROPOSED 7" CONCRETE PAVEMENT

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MARK E. LAVRAN
TEXAS P.E. NO. 118610
DATE: MAY, 2018

Revision	By	Chk.	Appr.	Date

CITY OF KEMAH
BEL ROAD EXTENSION
& LINEAR DETENTION DITCH

TYPICAL SECTIONS

LJA Engineering, Inc.
11821 East Freeway
Suite 360
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

DESIGN: M.E.H.	JOB No. E135-0320 Cont. No.
DRAWN: P.R	DATE: MAY, 2018
CHECKED:	SCALE: N.T.S.
APPROVED:	SHEET No. 04 Of 25

01/03/18

J:\ACAD\Clients\135\0320\Design\135-0320-04 TYP SEC.dwg (XREF: 135-0320 Border)

DB 11623 (Page 3)

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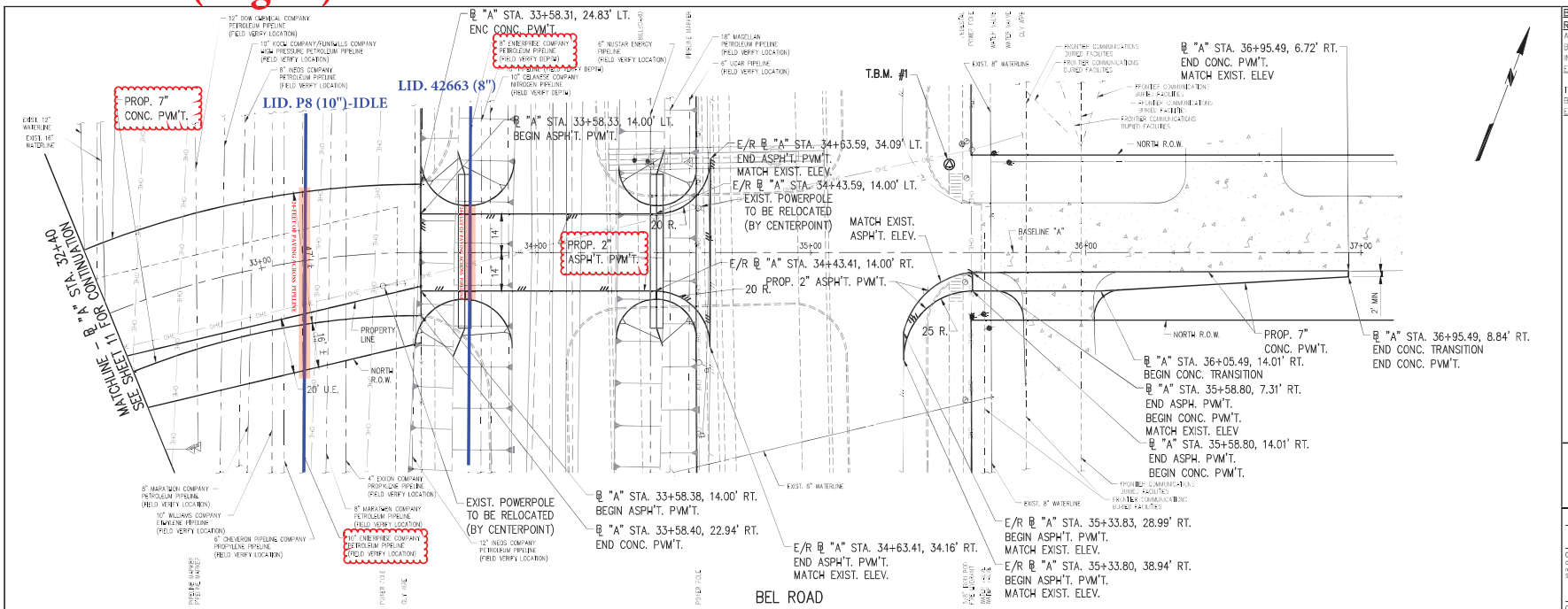

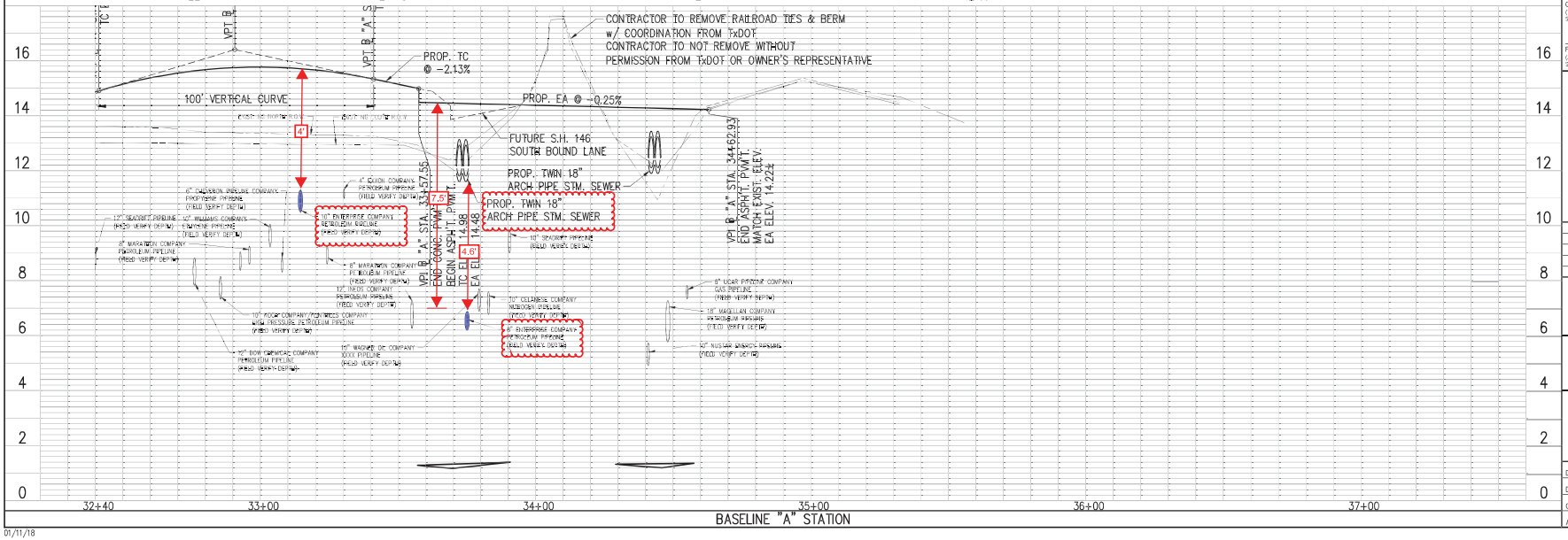

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ELEVATION: 5.89 (NAVD88 2001ADJ)

TBM #1:
BOX CUT ON WINGWALL (AS SHOWN)
ELEVATION: 13.27 (NAVD88 2001ADJ)

TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED, CALL CENTERPOINT AT 713-207-2222

NOTICE:
For your safety, you are required by Texas law to call 811 at least 48 hours before you dig so that underground lines can be marked. This signature does not fulfill you obligation to call 811.

VERIFICATION OF PRIVATE UTILITIES

DATE
CenterPoint Energy/Natural Gas Facilities Verifications ONLY
CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not to be used for conflict verification.
Signature Valid for six months

DATE
CenterPoint Energy/UNDERGROUND Electrical Facilities Verifications ONLY
(This signature verifies existing underground facilities – not to be used for conflict verification)
Signature Valid for six months

DATE 12/19/17
FRONTIER COMMUNICATIONS
(Approved for Underground Facilities only)
Signature Valid for one year

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
MARK E. WAVRAN
TEXAS P.E. NO. 118610
DATE: MAY, 2018

Revision	By	Chk.	Appr.	Date

CITY OF KEMAH
BEL ROAD EXTENSION & LINEAR DETENTION DITCH

BEL ROAD
PLAN & PROFILE
BL "A" STA. 32+40 TO END

LJA Engineering, Inc.
11821 East Freeway
Suite 360
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

DESIGN: M.E.W.	JOB No. E135-0320 Cont. No.
DRAWN: P.R	DATE: MAY, 2018
CHECKED:	SCALE: 1"=20' HORIZ.; 1"=2' VER.
APPROVED:	SHEET No. 12 Of 25

01/11/18

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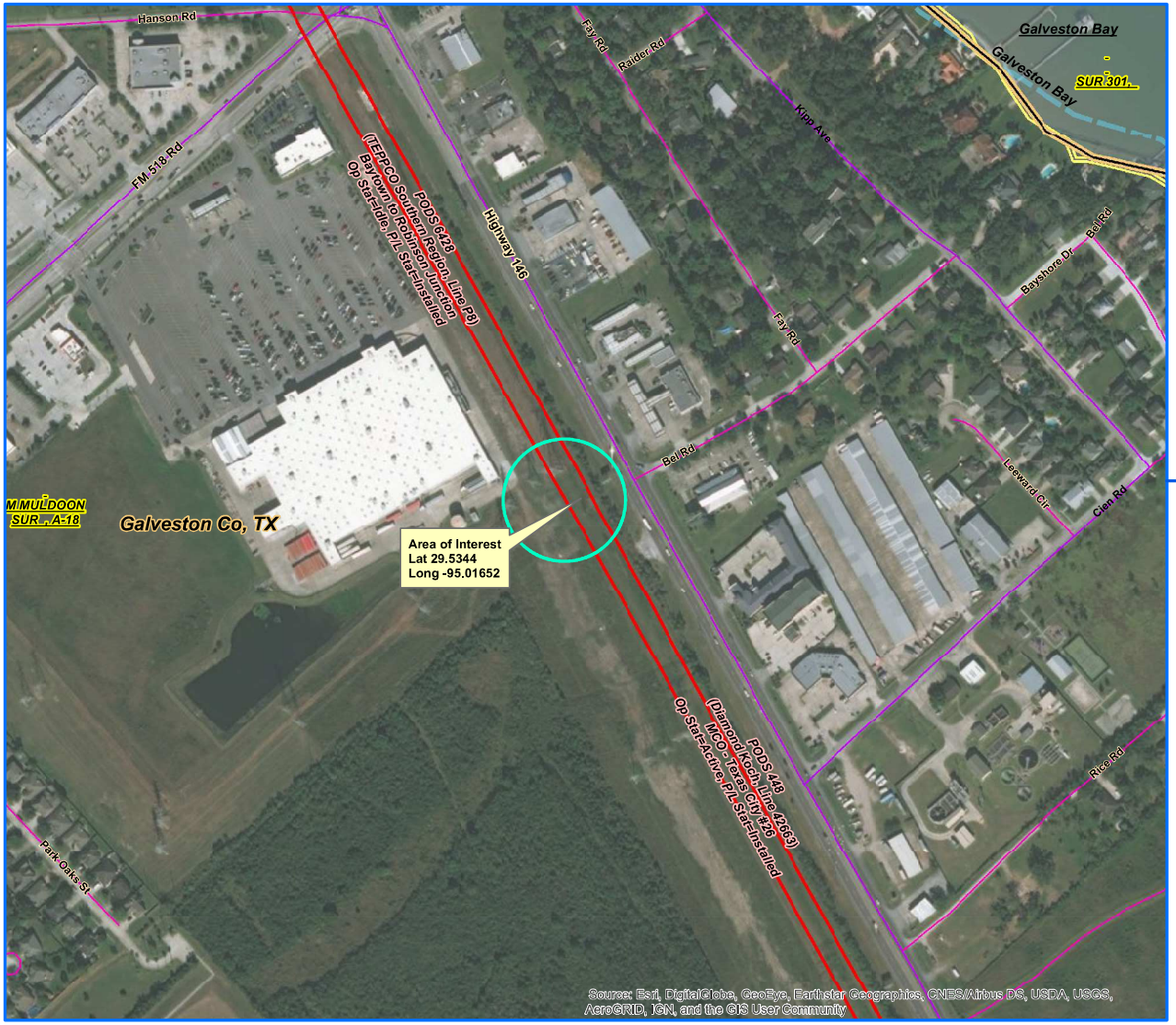
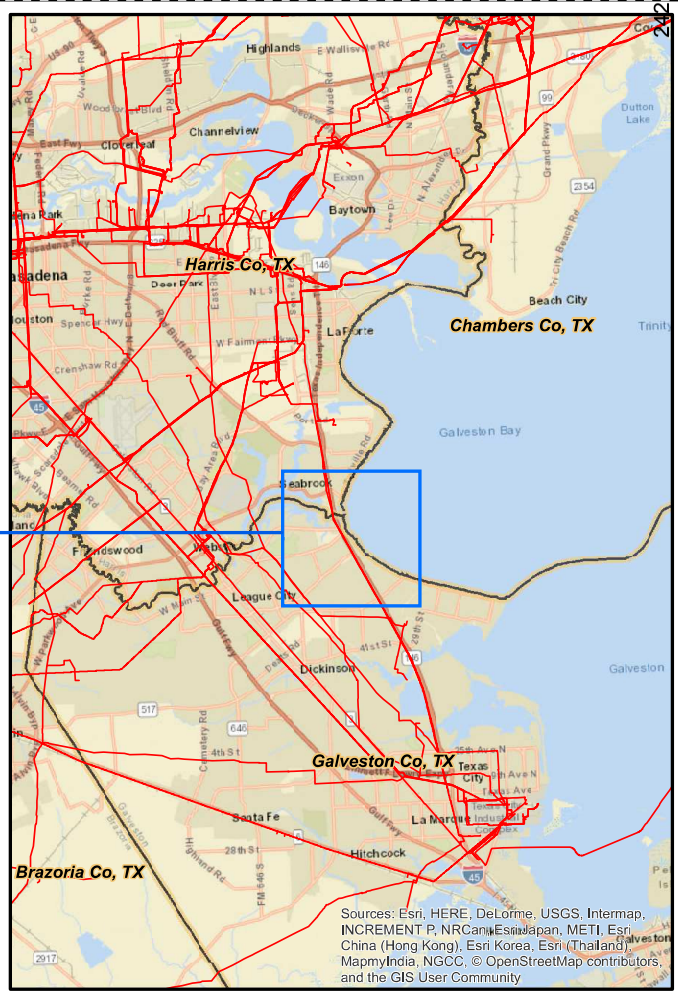
Exhibit B





0 2.5 5
Miles

N W E S

This GIS map has been created from Enterprise Products Operating LLC's proprietary GIS data. Neither Enterprise Products Operating LLC, nor any entity associated therewith, guarantees the accuracy of the data, or assumes any responsibility or liability for any reliance thereon. 11/28/2017 (YS).

0 300 600
Feet

N W E S

COORDINATES SHOWN HEREON MAY NOT REPRESENT PRECISE LOCATIONS. THEY SHOULD BE USED FOR GENERAL LOCATIONAL PURPOSES ONLY.

CITY OF KEMAH-RD EXT-BEL RD
GALVESTON COUNTY, TEXAS
ENCROACHMENT DB-11623

Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

LETTER OF NO OBJECTION

Expires: March 21, 2019

September 21, 2018

Kyle Vincent
LJA Engineering
11821 East Freeway, Suite 360
Houston, TX, 77029

RE: REQUEST FOR ENCROACHMENT ACROSS THE BAYTOWN TO ROBINSON JUNCTION
TEPPCO SOUTHERN REGION; LID #P8; TRACT #99; DB-11623
LETTER OF NO OBJECTION – GALVESTON COUNTY, TEXAS

Dear Mr. Vincent:

This letter is to memorialize our understanding regarding your request on behalf of the City of Kemah ("ENTITY") regarding ENTITY'S proposed construction of a proposed roadway as per plans and/or specifications from LJA Engineering, Inc. dated May 2018, a copy of which are attached hereto as Exhibit A (collectively referred to as the "ENCROACHMENT") crossing the "Baytown to Robinson Junction" pipeline (the "PIPELINE") of Enterprise TE Products Pipeline Company LLC ("COMPANY") located within the license area as depicted on the GIS map attached hereto as Exhibit B and further described in that certain Right-Of-Way Agreement from Emma M. Roberts Defense Plant Corporation dated October 20, 1943 and recorded in Volume 679, Page 92 of the Deed Records of Galveston County, Texas. (the "EASEMENT").

COMPANY is committed to protecting the environment and the health and safety of our employees, contractors, customers and the public by conducting its business in a safe and environmentally responsible manner. Activity that may disturb the PIPELINE, its appurtenant assets or its support structure can pose a threat to the environment, persons and public safety. Consequently, we request that ENTITY adhere to this same commitment to the environment and safety when undertaking construction of the ENCROACHMENT in and around the EASEMENT. At this time, COMPANY will not make an objection to the proposed ENCROACHMENT, conditioned upon ENTITY'S understanding of the following:

1. A minimum of 48 hours (excluding weekends and holidays) prior to commencing construction activities relating to the ENCROACHMENT, ENTITY will (i) confirm that the local One-Call has been notified of the construction activities (ENTITY or its agents may contact One-Call by dialing 811) and (ii) contact COMPANY'S Operations representative Kyle Havard at (281) 424-6821, so that Mr. Havard or his designated representative can be present during any approved construction operations.

2. COMPANY'S designated representative in the field ("COMPANY'S REPRESENTATIVE") will have the right to observe the construction of the ENCROACHMENT. ENTITY understands that COMPANY'S REPRESENTATIVE may suspend any work activities on the ENCROACHMENT if COMPANY'S REPRESENTATIVE, in his sole and absolute discretion, determines that such activities are in violation of any applicable law, ordinance or regulation or pose an imminent risk of bodily injury or death to persons, a threat to the environment or damage to the PIPELINE.

3. The following language must be conspicuously displayed on all drawings depicting the PIPELINE:

WARNING! HIGH PRESSURE PIPELINE
Excavation and/or Construction Prohibited without Prior Written Permission From
Enterprise TE Products Pipeline Company LLC

P.O. BOX 4324
HOUSTON, TEXAS 77210-4324
713.381.6500

9420 WEST SAM HOUSTON PARKWAY NORTH
HOUSTON, TEXAS 77064-6317
www.enterpriseproducts.com

4. COMPANY will require physical verification of the PIPELINE depth of cover and alignment, at ENTITY'S expense, prior to work being performed near the PIPELINE. Physical verification may be via hydro-excavation or any other method approved by COMPANY'S REPRESENTATIVE. If the PIPELINE is not at the anticipated alignment or depth, ENTITY shall adjust accordingly at no expense to COMPANY or its affiliates.

5. ENTITY'S road crossing will be as close to ninety (90) degrees as possible to the PIPELINE, but not less than forty-five (45) degrees. ENTITY'S road crossing will be installed in such a way that a minimum vertical separation of four feet (4') is maintained between the top of the PIPELINE and the top of the paved surface.

6. ENTITY understands that moving heavy construction equipment across the PIPELINE and/or the EASEMENT can damage the PIPELINE, thereby posing a threat to the environment and the safety of persons in the vicinity and the public. ENTITY will provide COMPANY with a **minimum of 72 hours notice** prior to crossing the PIPELINE with any heavy equipment. Wherever ENTITY is intending to cross the PIPELINE and/or the EASEMENT with heavy equipment, ENTITY will place timber matting, with a minimum thickness of eight inches (8") or other suitable material over the PIPELINE as determined by COMPANY'S REPRESENTATIVE. NOTE: It is the responsibility of ENTITY to confirm that timber matting is constructed in a manner that will sustain proposed heavy equipment. No medium or large vibratory compaction equipment will be permitted to operate within ten feet (10') of the PIPELINE, only walk-behind vibratory rollers/compactors will be permitted to operate within ten feet (10') of the PIPELINE. ENTITY will maintain a minimum of three feet (3') of cover over the top of the PIPELINE at locations where construction or maintenance activities will take place over the PIPELINE.

7. ENTITY may place excavated material inside the EASEMENT, but may not place such material over the PIPELINE unless approved by COMPANY'S REPRESENTATIVE. Entity understands that no excavation or removal of cover will be permitted within the pipeline right-of-way without prior approval. No equipment will be allowed to work over the PIPELINE unless approved by COMPANY'S REPRESENTATIVE. COMPANY requires hand excavation to be performed within eighteen inches (18") plus half the diameter of the PIPELINE; however, at no point should mechanical excavation be performed less than two feet (2') from the PIPELINE. All mechanical digging equipment must have the teeth removed or barred with a plate welded across the teeth, no detachable implements will be allowed.

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If you believe anything set forth in this letter misstates our understanding or if you require more information or clarification of any matters set forth herein, please contact the undersigned at your soonest convenience. The undersigned can be reached via e-mail at skabzinski@eprod.com.

Regards,

Stan Kabzinski
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cc: Kyle Havard
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Donail Biggers
Paul Lair

DB 11623

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CARL JOINER

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MARK E. HAVRAN
TEXAS P.E. NO. 118610
DATE: MAY, 2018

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LJA PROJECT NO. E135-0320
MAY, 2018

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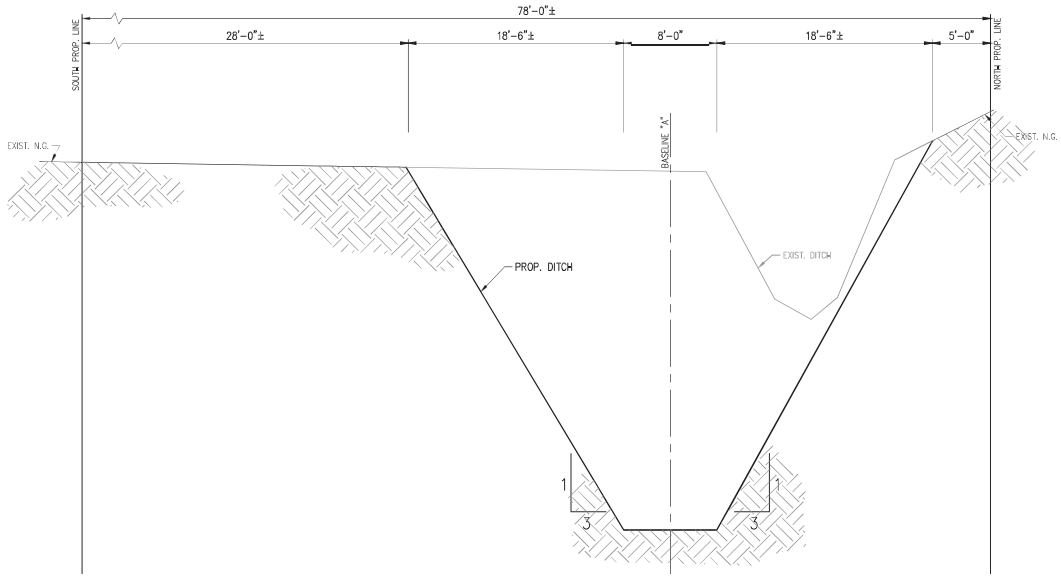

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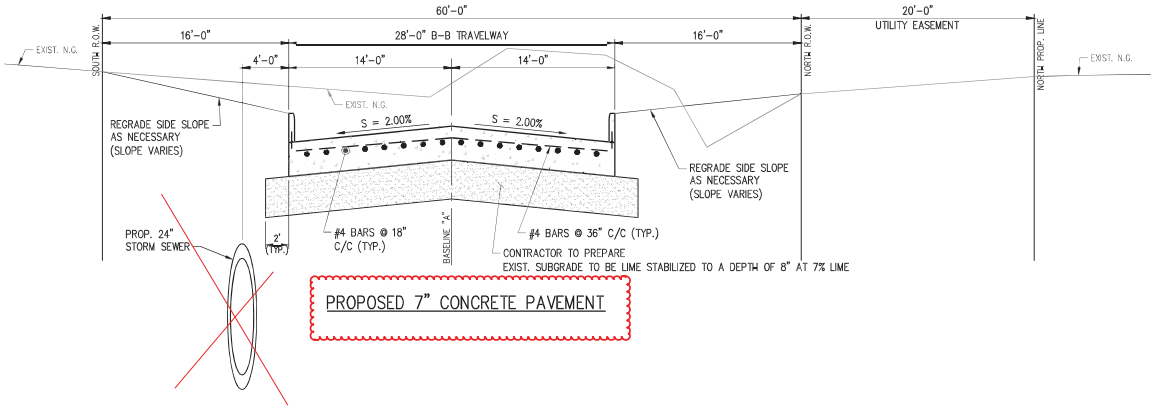

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CITY OF KEMAH
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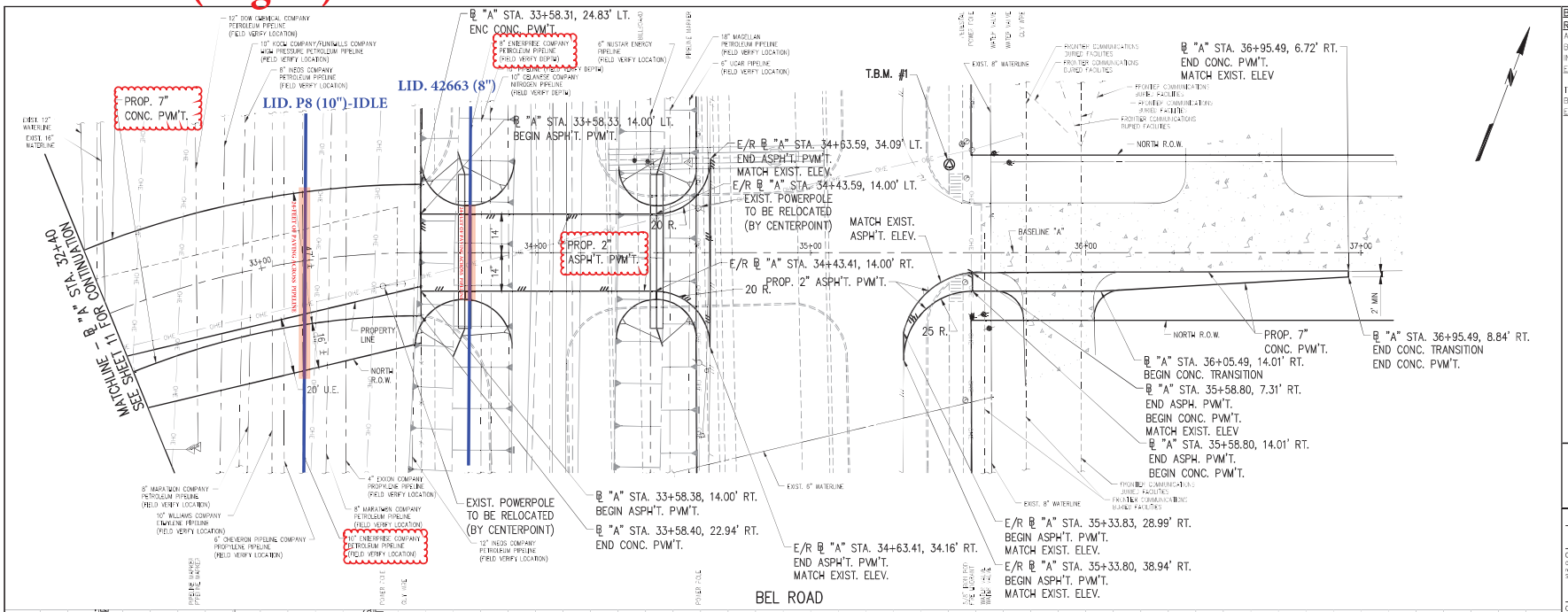

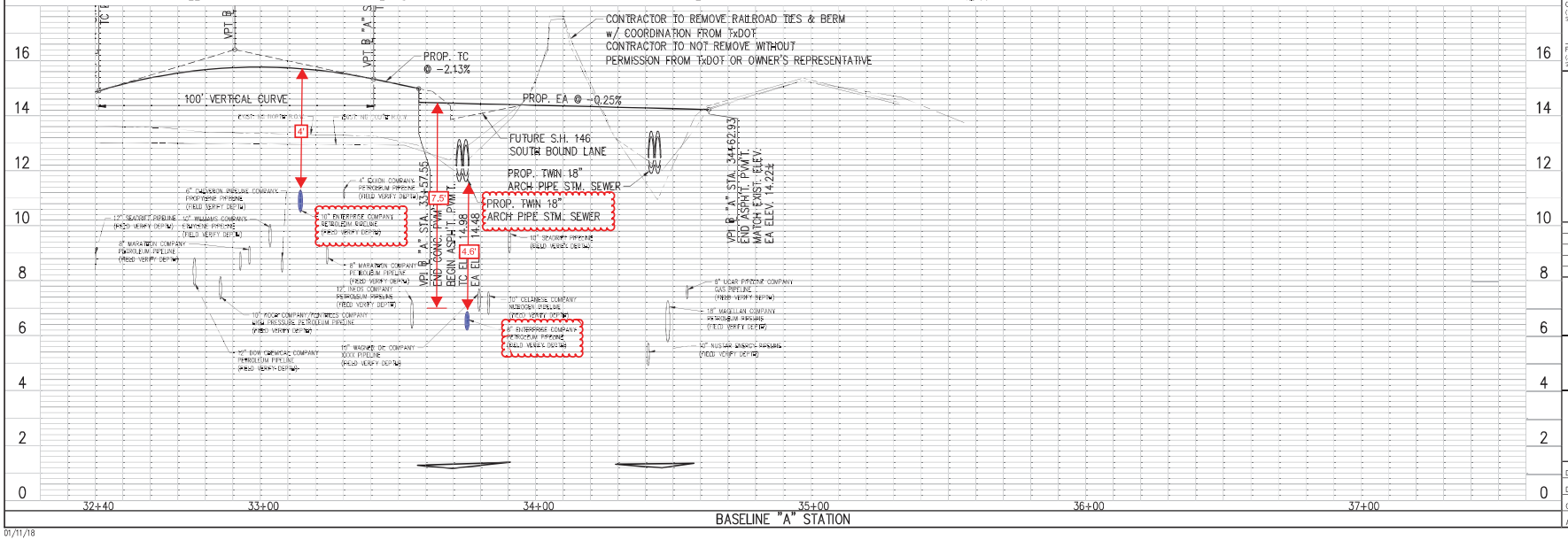

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For your safety, you are required by Texas law to call 811 at least 48 hours before you dig so that underground lines can be marked. This signature does not fulfill you obligation to call 811.

VERIFICATION OF PRIVATE UTILITIES

DATE
CenterPoint Energy/Natural Gas Facilities Verifications ONLY
CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not to be used for conflict verification.
Signature Valid for six months

DATE
CenterPoint Energy/UNDERGROUND Electrical Facilities Verifications ONLY
(This signature verifies existing underground facilities – not to be used for conflict verification)
Signature Valid for six months
DATE 12/19/17

FRONTER COMMUNICATIONS
(Approved for Underground Facilities only)
Signature Valid for one year

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
MARK E. WAVRAN
TEXAS P.E. NO. 118610
DATE: MAY, 2018

Revision	By	Chk.	Appr.	Date

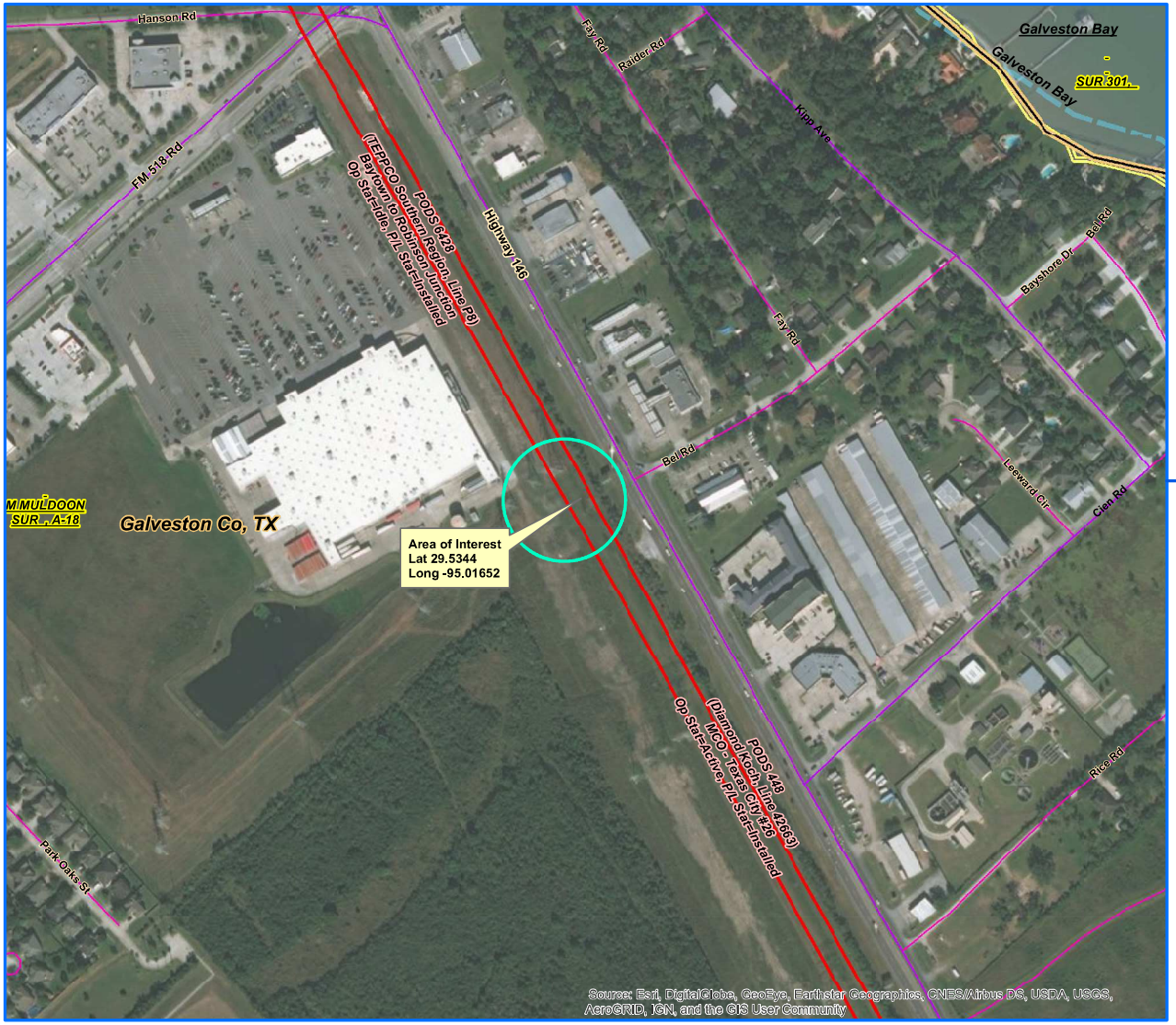
CITY OF KEMAH
BEL ROAD EXTENSION & LINEAR DETENTION DITCH

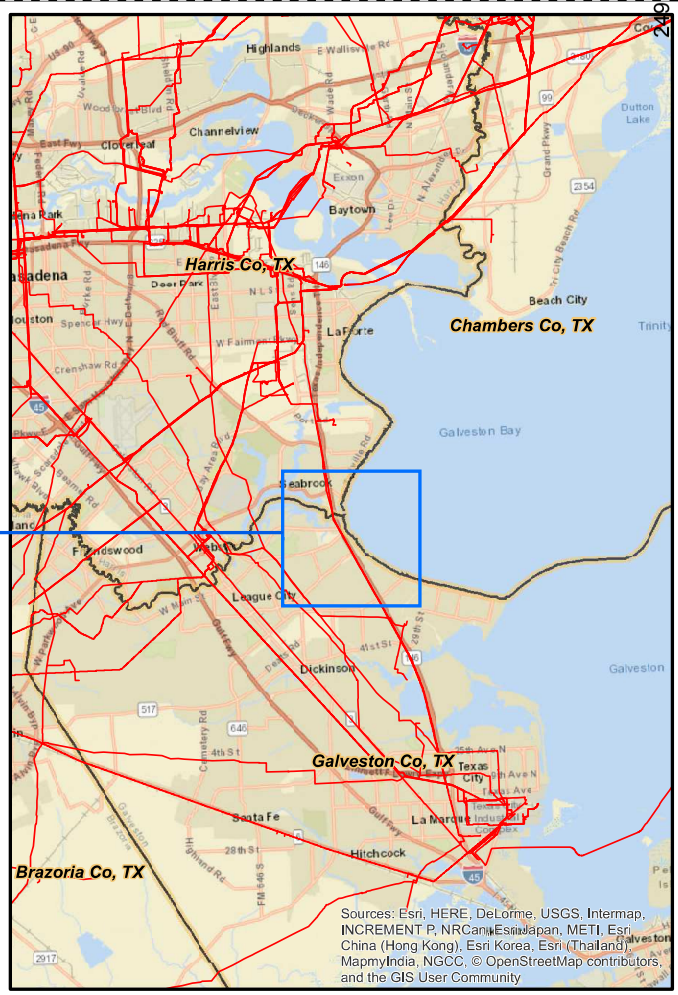
BEL ROAD
PLAN & PROFILE
BL "A" STA. 32+40 TO END

LJA Engineering, Inc.
11821 East Freeway
Suite 360
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

DESIGN: M.E.W.	JOB No. E135-0320 Cont. No.
DRAWN: P.R	DATE: MAY, 2018
CHECKED:	SCALE: 1"=20' HORIZ.; 1"=2' VER.
APPROVED:	SHEET No. 12 Of 25

Exhibit B





0 2.5 5
Miles

N W E S

This GIS map has been created from Enterprise Products Operating LLC's proprietary GIS data. Neither Enterprise Products Operating LLC, nor any entity associated therewith, guarantees the accuracy of the data, or assumes any responsibility or liability for any reliance thereon. 11/28/2017 (YS).

0 300 600
Feet

N W E S

COORDINATES SHOWN HEREON MAY NOT REPRESENT PRECISE LOCATIONS. THEY SHOULD BE USED FOR GENERAL LOCATIONAL PURPOSES ONLY.

CITY OF KEMAH-RD EXT-BEL RD
GALVESTON COUNTY, TEXAS
ENCROACHMENT DB-11623

EXXON

ExxonMobil Pipeline Company
22777 Springwoods Village Pkwy
EMHC/E3.5A.418
Spring, Texas 77389
Telephone - (281) 922-2024

Christopher Hinson
Manager, ROW & Claims

ExxonMobil

March 23, 2018

Right-of-Way Consent Agreement

RE: Extending Bel Road over the FAIRMONT JUNCTION - TEXAS CITY TX-182E

City of Kemah
Attn:Mayor, Carl Joiner
1401 Highway 146
Kemah, Texas 77565

Gentlemen:

H-2018.003

ExxonMobil Pipeline Company (EMPCo) has reviewed proposed plans to extend Bel Road across its Fairmont Junction - Texas City TX-182E pipeline easement at the intersection of Bel Road and HWY 146, Galveston County; 29°32'3.87"N, 95° 0'58.05"W, by stripping 7 inches of cover, add a limestone stabilization and then add 7 inches of concrete. As you are aware, EMPCo owns and/or operates petroleum, petroleum products and chemicals pipelines that must be protected from external damage and maintained in accordance with EMPCo, State and Federal standards to protect the safety of the public and the environment. In order to do this, EMPCo has developed certain terms and conditions that must be agreed to by anyone intending to construct facilities on or within our rights of way. EMPCo consents to the plans to extend Bel Road across its Fairmont Junction - Texas City TX-182E pipeline easement at the intersection of Bel Road and HWY 146, Galveston County; 29°32'3.87"N, 95° 0'58.05"W, by stripping 7 inches of cover, add a limestone stabilization and then add 7 inches of concrete (the "Improvements") as shown in the attached drawing submitted by LJA Engineering on behalf of the City of Kemah (Project No. E135-0320), provided City of Kemah agrees to the following terms and conditions:

1. City of Kemah and its contractors agree to conduct all activities and operations on, in, over, under, through or near EMPCo's easement in a manner that will not unreasonably interfere with EMPCo's operation or maintenance of its pipelines in the easement or pose a hazard to the pipelines. City of Kemah recognizes its use of the easement area will always be subject to the prior rights of EMPCo to utilize any and all portions of its easement, in any manner that it deems necessary. Any change or deviation in the proposed design, layout or construction of the Improvements, which affects EMPCo's easement, excluding changes required by EMPCo, shall first be reviewed and consented to by EMPCo before any work or activity shall take place on, in, over, under or through the easement. Failure to do so voids this consent. No improvements, except for those shown on the plans, may be placed on, in, under, over, or through the easement, without express written consent from EMPCo.

2. City of Kemah or its contractors will contact EMPCo' s Javier Robles, at 281-705-6106 a minimum of 72 hours prior to performing any activity within the easement.

3. Excavating or digging within the easement is prohibited without prior consent and an EMPCo inspector on site.

4. In the event EMPCo shall excavate its pipelines for any reason, or should additional pipelines be installed within the easement, City of Kemah and its successors and assigns will, at its sole expense be responsible for repairing damage to the Improvements resulting therefrom. Further, EMPCo shall not be held liable for any business interruption, business loss, loss of revenue or income, that may result due to the operation, maintenance, repair, replacement, installation, or any pipeline related work within EMPCo's pipeline easement.

5. City of Kemah shall be liable for damages to EMPCo's pipelines resulting from or occurring out of the construction, maintenance and repair of the Improvements.

6. TO THE FULL EXTENT ALLOWED BY LAW, CITY OF KEMAH SHALL INDEMNIFY, DEFEND, RELEASE AND HOLD EMPCO (INCLUDING ITS AFFILIATES, CONTRACTORS, SUBCONTRACTORS, DIRECTORS, OFFICERS, EMPLOYEES, SUCCESSORS, AND ASSIGNS) HARMLESS FROM AND AGAINST ALL CLAIMS, LOSSES, DEMANDS, CAUSES OF ACTION, SUITS, AND LIABILITY OF EVERY KIND, TYPE, AND CHARACTER ARISING OUT OF OR ASSOCIATED WITH THE CONSTRUCTION, EXISTENCE, MAINTENANCE, REPAIR AND REMOVAL OF THE IMPROVEMENTS, WHICH ARE ASSERTED BY ANY PERSON OR ENTITY INCLUDING, WITHOUT LIMITATION, EMPCO'S AND CITY OF KEMAH'S EMPLOYEES FOR PERSONAL INJURY, DEATH, OR LOSS OF OR DAMAGE TO PROPERTY.

7. Because the improvement to be placed in EMPCo's easement by City of Kemah will obstruct EMPCo's access to its pipelines and impede its use of the easement City of Kemah agrees to reimburse EMPCo for maintenance/construction expenses which exceed normal/customary expenses directly incurred as a result of the improvement being placed in the easement. EMPCo agrees to review maintenance/construction plans with City of Kemah and to subsequently provide invoices documenting the additional expenses incurred.

8. City of Kemah agrees to place standard 6-8 inch thick timber mats over the EMPCo pipeline and easement during construction to assist in load distribution and the safety of the EMPCo pipeline.

9. City of Kemah agrees that the terms, conditions and obligations of this letter agreement shall be made known to all successors, assigns or transferees of any interest in the property covered by this agreement. All successors, assigns or transferees of any interest in the subject property shall be bound by the terms, conditions and obligations contained herein.

10. City of Kemah agrees to those pertinent terms and conditions outlined in the attached form, titled "ExxonMobil Pipeline Company Right-of-Way Restrictions", attached hereto and made a part hereof.

City of Kemah agrees that EMPCo's consent is adequate consideration for City of Kemah's obligations hereunder. The consent provided by EMPCo in this letter shall not be deemed to be an approval of the manner in which City of Kemah performs the work described herein. Please indicate City of Kemah's acceptance of the foregoing terms and conditions by signing this letter in the space provided below and returning one original to me at the above letterhead address.

Very truly yours,

Christopher Hinson
Manager, Right-of-Way and Claims

AGREED TO AND ACCEPTED THIS 18 DAY OF APRIL, 2018

City of Kemah

By: Carl G. [illegible]

Title: MAYOR

INEOS

LONO REQUEST FORM

INSTRUCTIONS Complete the form, attach a kmz and drawings, and email to tammie.cuyos@ineos.com. Work is subject to applicable government regulations and shall not begin until plans are reviewed by INEOS and an INEOS representative is on site. INEOS reserves the right to amend encroachment requirements at any time.

Request Date	January 25, 2018	**LONO #**	**2018-006**
Construction Date		**APPROVAL DATE**	**February 2, 2018**
REQUESTED BY	Kyle Vincent	**APPROVED BY**	**Michael Lausch**
Company	LJA Engineering	Company	INEOS USA LLC
Contact		Contact	Tammie Cuyos
Title	Graduate Engineer	Title	Land Resource Manager
Address		Address	PO Box 1488
City, St, Zip	East Houston	City, St, Zip	Alvin, Tx 77512-1488
Office Phone	713.450.1300	Office Phone	281-581-3748
Cell Phone		Cell Phone	
Email	kvincent@lja.com	Email	tammie.cuyos@ineos.com

INEOS FIELD CONTACT(S)

Scott Stringfellow	Cell 281-839-0154	scott.stringfellow@ineos.com
Kervin Sanchez	Cell 281-839-0783	kervin.sanchez@ineos.com

ENCROACHMENT LOCATION Address, Roads/Intersection, Stationing, Legal Description

County		Latitude	
		Longitude	

The City of Kemah plans to extend Bel road to the west side of Hwy 146 near the intersection of FM 518 and Hwy 146. The road will be approximately 1,420 lf and will be 15" deep including stabilized subgrade. The heaviest piece of machinery on the pipelines will be a full concrete truck weighing between 70,000-80,000 lb .

INEOS Pipeline(s) Affected:

TCFP1 and TCBP

ENCROACHMENT DESCRIPTION AND CONSTRUCTION PROCEDURES Required Attachments: kmz, relevant drawings

INEOS COMMENTS

Per Engineering Authority: Both lines are acceptable based on the minimum four foot of cover for the 12.75" TCFP1 and the 6.625" TCBP lines based on the proposed loading provided on the email from Kyle Vincent.

The submitted drawings provided for review were used for calculations and identification. Verified that are lines are approximately 50 foot from one another and are well marked.

INEOS requires a 2 foot clearance around our pipelines. Potholing may be requested by INEOS, at its sole discretion. Furthermore, INEOS may request that the Operator provide a "window" for the damage techs to ensure that our pipe is not exposed or nicked.
A 72-hour notice prior to work commencement is required. Maintain a copy of this LONO while in the field. An INEOS Damage Prevention representative is required to be on-site for all construction activities.

CONTRACTOR INFORMATION

Company		Contact	
Address		Title	
City, St, Zip		Office Phone	
		Cell Phone	
		Email	

LANDOWNER / EASEMENT INFORMATION

Project/Tract No		Date	
Grantor		Recording Info	
Grantee			
Other			
Comments			

LONO Request Form Rev8

KOCH

Kyle Vincent

From: Brazle, Joshua <Joshua.Brazle@kochpipeline.com>
Sent: Monday, February 5, 2018 10:39 AM
To: Kyle Vincent
Subject: RE: Bel Road (E135-0320)

Only just using mats when required for heavy equipment, that should be about it.

From: Kyle Vincent [mailto:kvincent@lja.com]
Sent: Monday, February 05, 2018 7:35 AM
To: Brazle, Joshua <Joshua.Brazle@kochpipeline.com>
Subject: RE: Bel Road (E135-0320)

Sent by an external sender. Use caution opening attachments, clicking web links, or replying unless you have verified this email is legitimate.

Josh,

Is there any safety requirements or guidelines you want the contractor to follow by we can include them in our contract book or planset?

Kyle Vincent
Graduate Engineer, EIT

LJA Engineering | We Build Civilization
East Houston
P: (713) 450-1300
D: (713) 657-6024
www.lja.com
Facebook • Twitter • LinkedIn

From: Brazle, Joshua [mailto:Joshua.Brazle@kochpipeline.com]
Sent: Thursday, January 25, 2018 2:06 PM
To: Kyle Vincent <kvincent@lja.com>
Subject: Re: Bel Road (E135-0320)

Thanks, that works for me.

Get Outlook for iOS

From: Kyle Vincent <kvincent@lja.com>
Sent: Thursday, January 25, 2018 2:05:12 PM
To: Brazle, Joshua
Subject: RE: Bel Road (E135-0320)

Sent by an external sender. Use caution opening attachments, clicking web links, or replying unless you have verified this email is legitimate.

Sorry about that from the tom of the road to the top of the pipe there is approximately 7’ of cover.

Kyle Vincent
Graduate Engineer, EIT

LJA Engineering | We Build Civilization
East Houston
P: (713) 450-1300
D: (713) 657-6024
www.lja.com
Facebook • Twitter • LinkedIn

From: Brazle, Joshua [mailto:Joshua.Brazle@kochpipeline.com]
Sent: Thursday, January 25, 2018 2:03 PM
To: Kyle Vincent <kvincent@lja.com>
Subject: Re: Bel Road (E135-0320)

I’m with Koch pipeline. Could you tell me the new coverage?

Get Outlook for iOS

From: Kyle Vincent <kvincent@lja.com>
Sent: Thursday, January 25, 2018 12:33:16 PM
To: Brazle, Joshua
Subject: RE: Bel Road (E135-0320)

Sent by an external sender. Use caution opening attachments, clicking web links, or replying unless you have verified this email is legitimate.

Josh,

The cover over the Ineos Pipeline will be approximately 7.7’ after the increased cover is added.

Thank You,

Kyle Vincent
Graduate Engineer, EIT

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East Houston
P: (713) 450-1300
D: (713) 657-6024
www.lja.com
Facebook • Twitter • LinkedIn

From: Brazle, Joshua [mailto:Joshua.Brazle@kochpipeline.com]
Sent: Thursday, January 25, 2018 12:27 PM
To: Kyle Vincent <kvincent@lja.com>
Cc: Mark Havran <mhavran@lja.com>; Hunt, Dwayne <Dwayne.Hunt@kochpipeline.com>
Subject: RE: Bel Road (E135-0320)

Thank you, I have no problem with you all increasing the elevation of this road. Approximately how much cover in total are you all proposing.

From: Kyle Vincent [mailto:kvincent@lja.com]
Sent: Thursday, January 25, 2018 10:51 AM
To: Brazle, Joshua <Joshua.Brazle@kochpipeline.com>
Cc: Mark Havran <mhavran@lja.com>; Hunt, Dwayne <Dwayne.Hunt@kochpipeline.com>
Subject: RE: Bel Road (E135-0320)

Sent by an external sender. Use caution opening attachments, clicking web links, or replying unless you have verified this email is legitimate.

Josh,

An updated plan set has been attached. The plans show an increased elevation of the proposed road to add cover for yours and other pipelines (Shown on Page 12).
Just let me know if you need anything.

Thank You,

Kyle Vincent
Graduate Engineer, EIT

LJA Engineering | We Build Civilization
East Houston
P: (713) 450-1300
D: (713) 657-6024
www.lja.com
Facebook • Twitter • LinkedIn

From: Brazle, Joshua [mailto:Joshua.Brazle@kochpipeline.com]
Sent: Tuesday, December 19, 2017 11:12 AM
To: Kyle Vincent <kvincent@lja.com>
Cc: Mark Havran <mhavran@lja.com>; Hunt, Dwayne <Dwayne.Hunt@kochpipeline.com>
Subject: RE: Bel Road (E135-0320)

Mr. Vincent, thanks for touching base with my Damage Prevention Coordinator. Josh is correct stating that we do not issue letters of no objections. This is handled through our one call system and as DP Coordinators, our field guy (Josh) handles most of the decisions in the field. If there are concerns or issues in which our assets are in danger of being damaged, we send the proposed profile to our engineers for review and final approval (normally a 2-3 day turn around). Please submit the one call and our tech will mark the Flint Hill Assets and give you what the requirements will be. The requirements will differ according to what your plan will be. Example, if you are 15ft or deeper than our asset, there will be very little to no requirements that will be requested of you. If you are under 6ft from our asset and we are the deepest line, the requirements will be much different. As you well understand, requirements differ with how much clearance is in between the drill and our asset. Josh will be glad to assist you once you have a plan and for this project. In our line of work, and with all the different products that are in our pipelines, it us very unusual for a one size fits all type of job plan. Product in our pipelines react differently to vibration, impact, and other environmental issues.

Thanks,

Dwayne Hunt
9145 FM 563
Liberty Tx, 77575
Operations Supervisor | FHR Pipelines & Terminals
C: 409-332-6785 | O: 936-336-2211

From: Kyle Vincent [mailto:kvincent@lja.com]
Sent: Monday, December 18, 2017 10:27 AM
To: Brazle, Joshua <Joshua.Brazle@kochpipeline.com>
Cc: Mark Havran <mhavran@lja.com>
Subject: Bel Road (E135-0320)

Sent by an external sender. Use caution opening attachments, clicking web links, or replying unless you have verified this email is legitimate.

Josh,

Here is the preliminary plan set for bel road. The pipeline crossing is on page 12.
Our new road will be 15" deep including stabilized subgrade.
The heaviest piece of machinery on the pipelines during construction will be a full concrete truck weighing between 70,000-80,000 lb.
Let me know if you need anything else.

Thank You,

Kyle Vincent
Graduate Engineer, EIT

LJA Engineering | We Build Civilization
East Houston
P: (713) 450-1300
D: (713) 657-6024
www.lja.com
Facebook • Twitter • LinkedIn

MAGELLAN

(Drafted by & when filed return to: Magellan Pipeline Company, L.P., P. O. Box 22186, MD 27-2 (S. Guthrie), Tulsa, Oklahoma 74121-2186, 918/574-7350.)

ENCROACHMENT AGREEMENT

This Encroachment Agreement ("**Agreement**") is made and entered into by and between Magellan Pipeline Company, L.P., a Delaware limited partnership, whose address is P.O. Box 22186, Tulsa, Oklahoma, 74121-2186, (hereinafter called "**Magellan**"), and The City o Kemah, Texas, a corporation, whose mailing address is 1401 Highway 146, Kemah, Texas 77565, its heirs, successors, assigns and grantees (hereinafter called The City of Kemah").

WITNESSETH:

WHEREAS, The City of Kemah represents and warrants that The City of Kemah owns the right to construct a road on all the certain land (hereinafter "**Subject Land**"), described on attached **Exhibit "A"** and made a part hereof; and

WHEREAS, **Magellan** is the owner of certain pipelines, pipeline facilities and appurtenances (hereinafter referred to as the "**Magellan Facilities**") and easement rights therefor, (hereinafter referred to as the "**Easement**", whether or not rights were granted in one or more documents or acquired by operation of law). For purposes of this **Agreement** only, "**Magellan's Easement Tract**" shall be considered to be any area within Fifty (50) feet of any **Magellan Facilities**, unless a different right of way tract width is specifically described in the **Easement**, in which case such specified width shall define **Magellan's Easement Tract**. The land referenced in the Easement includes a strip of land running between Deer Park, Harris County, Texas and Nadeau, Galveston County, Texas, pursuant to those certain instruments recorded in the records of said county and state and described as follows:

1) License agreement Dated August 28th 1962, from Southern Pacific Company to Service Pipe Line Company to construct an eighteen inch (18") Deer Park, Harris County, Texas and Nadeau, Galveston County, Texas

WHEREAS, for the purposes of this **Agreement** an "**Encroachment**" is defined as any use of the land within **Magellan's Easement Tract** by someone other than **Magellan** which could interfere with **Magellan's Easement** rights or could create safety concerns related to **Magellan's**

Facilities as more fully described in **Magellan's** *General Encroachment Requirements* as set forth in attached **Exhibit "B"** and incorporated herein by reference. **Magellan does not permit or authorize any Encroachments unless specifically approved in a written agreement identifying all "Approved Encroachments"**; and

WHEREAS, The City of Kemah desires to obtain **Magellan's** consent for one or more **Encroachments** on **Magellan's Easement Tract;**

NOW, THEREFORE, in consideration of the covenants and agreements herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, **Magellan,** subject to the following terms and provisions, hereby consents to the **Encroachments** listed below as "**Approved Encroachments**" described and limited pursuant to the following specified plan drawings, which were furnished by **The City of Kemah** to **Magellan** ("**Plan Drawings**") and attached hereto as **Exhibit "C"**:

1) 1)Drawing No. E135-0320 by LJA Engineering, Inc., Page 4 of 25 dated 1/13/18 and Page 12 of 25 dated 1/11/2018

TERMS AND PROVISIONS

1. **Approved Encroachments.** The **Approved Encroachments,** as further identified, described and limited in the **Plan Drawings** as set forth in **Exhibit "C"** are limited to the following:

a) The project proposes to install a concrete pavement road above the Magellan referenced pipelines, the crossing is at ESN 670+56 approx. The road width is 28 feet and will be located as shown in reference drawings. The proposed crossing will maintain a minimum vertical separation of 6 feet.

2. **No Other Encroachments.** Except for the **Approved Encroachments** as defined in the **Agreement**, The City of Kemah shall not create, erect, place or construct any other **Encroachment** on, above or below the surface of the ground on **Magellan's Easement Tract**, or change the grade or elevation of the ground surface within **Magellan's Easement Tract** or at any time plant or allow any trees thereon or cause or permit any of these to be done by others, without the express prior written permission of **Magellan**.

3. **Magellan On-Site Representative.** Exclusive of Saturday, Sunday, and legal holidays, The City of Kemah shall notify **Magellan** a minimum of 48 hours in advance of any **Encroachment** activities on **Magellan's Easement Tract** so that **Magellan** may arrange to have a representative present. At **Magellan's** option and at The City of Kemah sole cost and expense, **Magellan's** representative may be on site during all **Encroachment** activities over or within ten feet (10') of the **Magellan Facilities** to confirm that no damage occurs to the **Magellan Facilities**. The presence of **Magellan's** representative or any verbal instructions

given by such representative shall not relieve The City of Kemah of any liability under the **Easement** or this **Agreement,** and will not change the terms of the **Easement** or this **Agreement,** which may only be changed by written agreement by authorized representatives of The City of Kemah and **Magellan.** If pipeline, coating, cathodic protection and/or any other repair of **Magellan Facilities** is required by **Magellan** or if the safety of the **Magellan Facilities** is jeopardized, in **Magellan's** sole judgment, The City of Kemah shall stop all construction activities on **Magellan's Easement Tract** until said repairs are completed or until any unsafe construction practices are resolved to the satisfaction of **Magellan's** on-site representative. Written notification of such construction activity shall be made to **MAGELLAN PIPELINE COMPANY,** Operatations Supervisor, Erin Brantley, 1313 W. Pasadena Freeway, Pasadena, Texas, 77506, Office Phone - 713-475-4303, or such other representative of **Magellan,** which **Magellan** may from time to time designate.

4. **Protection of Magellan Facilities.** The City of Kemah shall protect the **Magellan Facilities** if excavating and backfilling become necessary within **Magellan's Easement Tract**. If excavating within 2 feet of any Magellan pipeline or when otherwise deemed necessary by **Magellan's** on-site representative, The City of Kemah shall perform any necessary digging or excavation operations by hand digging. The City of Kemah shall reimburse **Magellan** for all costs of having a representative of **Magellan** on-site during construction activities related to the **Approved Encroachments**.

5. **Breach.** If either The City of Kemah or **Magellan** breaches this **Agreement** and the non-breaching party commences litigation to enforce any provisions of this **Agreement**, the reasonable cost of attorneys' fees and expenses will be payable to the non-breaching party by the breaching party upon demand, for all claims upon which the non-breaching party prevails.

6. **Insurance.** The City of Kemah shall procure or cause its contractors and subcontractors to procure and maintain in force throughout the entire term of this **Agreement** insurance coverage described below with insurance companies acceptable to **Magellan** for work performed related to the construction of the **Approved Encroachments**. All costs and deductible amounts will be for the sole account of the City of Kemah or its contractors and subcontractors. Prior to commencing any activities related to the construction of the **Approved Encroachments**, the City of Kemah must deliver to **Magellan** certificate(s) of insurance. Non-renewal or cancellation of policies must be effective only after **Magellan** receives written notice from the insurance company thirty (30) days in advance of such non-renewal or cancellation. The limits set forth below are minimum limits and will not be construed to limit the City of Kemah liability:

   (a) Workers' Compensation insurance complying with the laws of the State or States having jurisdiction over each employee and Employer's Liability insurance with limits of $1,000,000.

   (b) Commercial or Comprehensive General Liability insurance on an occurrence form with a combined single limit of $5,000,000 each occurrence and project specific annual

aggregates of $5,000,000. Coverage must include premises/operations, independent contractors, blanket contractual liability, and products/completed operations coverage, broad form property damage, personal injury, and sudden and accidental pollution; such coverage must be maintained for two (2) years following completion of work activities related to the construction of the **Approved Encroachments**. **Magellan**, its affiliated companies, and its and their respective directors, officers, partners, members, shareholders, employees, agents and contractors shall be included as additional insureds.

(c) In each of the above policies, the City of Kemah or its contractors and subcontractors agree to waive and will require its insurers to waive any rights of subrogation or recovery either may have against **Magellan** and its affiliated companies.

(d) Regardless of the insurance requirements above, the insolvency, bankruptcy, or failure of any such insurance company providing insurance for the City of Kemah or its contractors and subcontractors, or the failure of any such insurance company to pay claims that occur, such requirements, insolvency, bankruptcy or failure will not be held to waive any of the provisions hereof.

(e) In the event of a loss or claim arising out of or in connection with the construction of the **Approved Encroachments**, the City of Kemah agrees, upon request of **Magellan**, to submit a certified copy of its insurance policies for inspection by **Magellan**.

(f) The City of Kemah shall require all of its contractors and subcontractors for work related to the construction of the **Approved Encroachments** to provide adequate insurance coverage, all to be endorsed with the Waiver of Subrogation wording referenced in Section (c) above; any deficiency in the coverage, policy limits, or endorsements of said contractors and subcontractors, shall be the sole responsibility of the **City of Kemah**.

7. **Indemnification.** The City of Kemah will indemnify, save, and hold harmless **Magellan**, its affiliated companies, directors, officers, partners, employees, agents and contractors from any and all environmental and non-environmental liabilities, losses, costs, damages, expenses, fees (including reasonable attorneys' fees), fines, penalties, claims, demands, causes of action, proceedings (including administrative proceedings), judgments, decrees and orders resulting from **The City of Kemah** breach of this **Agreement** or caused by or as a result of the construction, use, maintenance, existence or removal of the **Approved Encroachments** and **Other Encroachments** located on the **Magellan Easement Tract**. The presence of **Magellan's** representative or any instructions given by such representative will not relieve The City of Kemah of any liability under this **Agreement**, except to the extent that such liability results from Magellan's or its representative's gross negligence or willful misconduct.

8. **Damage or Loss.** The City of Kemah covenants that:

(a) If at any time, in the sole opinion of **Magellan**, it becomes necessary for **Magellan,** to cross, occupy, utilize, move or remove all or portions of the **Approved Encroachments** placed on **Magellan's Easement Tract** or constructed pursuant to this **Agreement,** for any purpose, including but not limited to surveying, constructing new facilities, maintaining, inspecting, operating, protecting, repairing, replacing, removing or changing the size of a pipeline(s) and appurtenances on **Magellan's Easement Tract** and such activities by **Magellan** result in damage to or destruction of the **Approved Encroachments,** then repair, replacement or restoration of such **Approved Encroachments** shall be at the sole cost and responsibility of The City of Kemah.

(b) If at any time, any encroachments belonging to or permitted by The City of Kemah which are not authorized by this or another written agreement ("**Other Encroachments**") are found to be on **Magellan's Easement Tract, Magellan** may at any time request The City of Kemah to remove such **Other Encroachments,** and if The City of Kemah refuses or fails to do so within a reasonable time, **Magellan's** may remove them from **Magellan's Easement Tract** to a location off of **Magellan's Easement Tract** at The City of Kemah expense, unless they are allowed to remain by a written agreement between **Magellan** and The City of Kemah. Should such removal activities by **Magellan** result in damage to or destruction of the **Other Encroachments**, then repair, replacement or restoration of such **Other Encroachments** shall be at the sole cost and responsibility of The City of Kemah, and such **Other Encroachments** may not be repaired, replaced or rebuilt on **Magellan's Easement Tract** without a written agreement between **Magellan** and The City of Kemah.

(c) If during the exercise of the rights granted by the **Easement** or by this **Agreement,** the **Approved Encroachments** and **Other Encroachments**, if any, are damaged, destroyed or suffer loss of value, The City of Kemah agrees to release **Magellan,** its affiliates, and its and their respective directors, officers, members, partners, shareholders, employees, agents and contractors from and against any and all liabilities, and damages or losses which may arise as a result of the damage to or loss of use of the **Approved Encroachments** and **Other Encroachments**, if any, caused by **Magellan**, its employees, agents and contractors.

9. **Magellan Rights.** **Magellan** and The City of Kemah agree that the existence of the **Approved Encroachments** or this **Agreement** does not constitute a waiver of **Magellan's** rights under the **Easement.** **Magellan** hereby reserves and The City of Kemah hereby grants and confirms all of **Magellan's** rights, title and estate as set forth in the **Easement.**

10. The terms and conditions of this **Agreement** will constitute covenants running with the land and be binding upon and inure to the benefit of the parties hereto, their successors, assigns and grantees. This **Agreement** may be executed in two or more counterparts, each of which

shall be deemed an original, but all of which together shall constitute one instrument. This **Agreement** shall become effective upon its complete execution by the parties hereto.

11. Heavy Equipment Crossings

Although exact construction equipment is not known at this time, pipeline stress calculations have been performed based on an assumed maximum loaded vehicle weight of 80,000 lbs. The stress calculations further assumed that the gross loaded vehicle weight was evenly distributed between two (2) axles resulting in a maximum wheel load of 20,000 lbs. Based upon these assumptions and the pipeline depths of provided by Magellan, equipment meeting the aforesaid criteria may safely cross the Magellan pipelines; however, a Magellan field representative will need to be present to verify the pipeline depth of cover prior to allowing equipment to cross. A minimum cover of four (4) feet shall be maintained for all equipment crossings over Magellan pipelines. Tracked equipment and equipment exceeding the maximum wheel load specified above will not be allowed to cross the Magellan pipelines without further evaluation of the pipeline stresses. If equipment exceeding the maximum wheel load specified above will need to cross the pipelines, detailed information will need to be received in order to perform pipe stress calculations. The following information will need to be received to perform a more thorough analysis of wheeled vehicles: loaded vehicle weight, number of axles on the front and rear, and weight distribution between the front and rear axles. For equipment on tracks, the following information is needed: loaded vehicle weight, length of track in contact with the ground, and track width.

IN WITNESS WHEREOF, the parties have set their hands on the dates expressed below.

MAGELLAN PIPELINE COMPANY, L.P.
By: Magellan Pipeline GP, LLC, its general partner

By: Nick McGuire
Name: Nick McGuire
Title: Real Estate Representative
Authorized Signatory for Company
Date: 4/26/18

THE CITY OF KEMAH

By: Carl A. Jonek
Name: CARL A. JONEK
Title: MAYOR

Date: 4/18/18

STATE OF OKLAHOMA)
) SS
COUNTY OF TULSA)

Before me, the undersigned, a Notary Public in and for the county and state aforesaid, on this 26th day of April 2018, personally appeared Nick McGuire, to me personally known to be the Authorized Signatory for MAGELLAN PIPELINE GP, LLC, a Delaware limited liability company, who being duly sworn did acknowledge to me that he/she executed the foregoing instrument on behalf of said limited liability company as the free and voluntary act and deed, for the uses, purposes and consideration therein set forth.

Witness my hand and official seal.

Laura A. McGinnis
Notary Public

My commission expires:
3-14-21

LAURA A. MCGINNIS
NOTARY
17002555
EXP. 03/14/21
PUBLIC
STATE OF OKLAHOMA

STATE OF TEXAS)
) SS
COUNTY OF GALVESTON)

Before me, the undersigned, a Notary Public in and for the County aforesaid, on this 18 day of APRIL, personally appeared CARL JOINER, to me known personally to be the MAYOR of The City of Kemah, a corporation, who being duly sworn did acknowledge to me that he/she executed the foregoing instrument on behalf of said City of Kemah as the free and voluntary act and deed of said corporation, for the uses, purposes and consideration therein set forth.

Witness my hand and official seal.

Notary Public

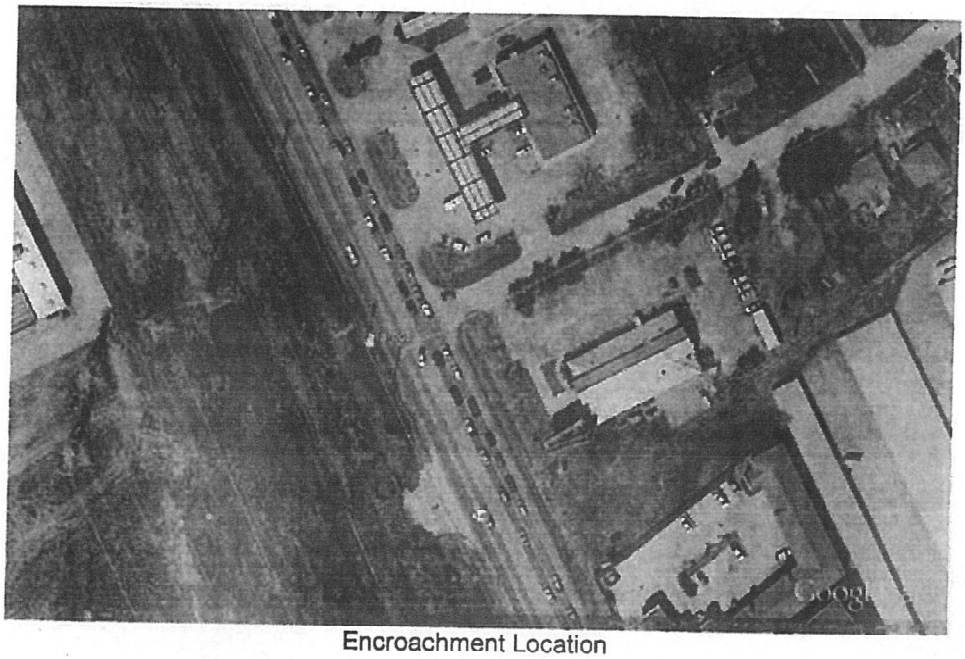
My Commission Expires:
APRIL 14, 2019

SHELLY R CRIDER
NOTARY PUBLIC
STATE OF TEXAS
#130190364
MY COMMISSION EXPIRES
APRIL 14, 2019

SHELLY R CRIDER
NOTARY PUBLIC
STATE OF TEXAS
04-14-2019

EXHIBIT "A"

SUBJECT LAND



Encroachment Location

EXHIBIT "B"

GENERAL ENCROACHMENT REQUIREMENTS

EXHIBIT "B"

GENERAL ENCROACHMENT REQUIREMENTS

MAGELLAN PIPELINE COMPANY, L.P.

General Encroachment Requirements

A. GENERAL - These requirements define the minimum standards of practice for encroachments by a landowner (including any developer, business entity, utility company or individual working for, or on behalf of, or with permission of landowner) (herein referred to collectively as "Owner") to pipeline corridors and rights of way ("Magellan's Easement Tract") owned or operated by Magellan Pipeline Company, L.P. ("Magellan"). Upon written request by Owner to Magellan, a copy of these minimum requirements shall be provided to any developer, business entity, utility company or individual working on behalf of Owner or with the permission of Owner within Magellan's Easement Tract. Specific circumstances may require additional precautions or more stringent methods in order to protect the integrity of Magellan's pipelines and facilities. Magellan's Easement Tract for purposes of these General Encroachment Requirements shall be considered to be any area within fifty (50) feet of any Magellan pipeline or other Magellan-owned or operated facility unless a different right of way width is specified by one or more recorded right of way or easement documents (herein collectively called "Easement", whether one or more), in which case such specified width shall define Magellan's Easement Tract.

1. Encroachment Definition. An "encroachment" is any use of the land within Magellan's Easement Tract which could interfere with Magellan's Easement rights or which could create safety concerns for Magellan pipelines and/or facilities located on Magellan's Easement Tract. Encroachments include, but are not limited to: structures, fixtures, personal property, landscaping, foreign utilities, foreign pipelines, roadways, railroads, waterway crossings, water impoundments, walls, heavy equipment and heavy loads on Magellan's Easement Tract, and also any excavation, digging, drilling, tunneling and addition, removal or disturbance of soil or subsoil within Magellan's Easement Tract.

2. Magellan Representative Required On-Site. Magellan pipeline systems operate at high pressures, and for safety reasons, Magellan requires its company representatives to be on-site while Owner is excavating or performing other activities which could endanger the Magellan pipelines or other facilities on Magellan's Easement Tract. For other activities of the Owner on the Magellan Easement Tract, the Magellan field representative shall determine whether Magellan's continuous presence or periodic monitoring of encroachment activities will be required and shall inform the Owner. A Magellan representative will be made available upon 48 hours notice (exclusive of weekends and holidays) to determine the location and approximate depth of any Magellan pipelines. No excavation shall be commenced without prior written approval from Magellan and verification by Magellan of the location and approximate depth of its pipelines.

3. Magellan's Facilities. Magellan's facilities include, but are not limited to, Easement, rights of way, pipelines, meter and valve sites, aboveground piping manifolds and cathodic protection systems.

4. Land Use Change - Notification. The landowner and tenant, if any, must notify Magellan at any and every time when the land use will be changed for land on or adjacent to Magellan's Easement Tract. Examples of such land use changes are:

- Change from pasture to cultivation
- Change in depth of tilling (e.g. plowing deeper or deep-breaking the land)
- Change in that terraces will be cut or re-cut
- Change from agricultural use to residential, commercial or industrial use.
- Change from residential to commercial or from commercial to industrial.

5. Governmental Regulations and Industry Guidelines. Owner must comply with all applicable laws and regulations, as well as Magellan's policies as expressed herein. Owner is also hereby referred to the Common Ground Alliance Best Practices which can be found on the web site: www.commongroundalliance.com (See "Program Information" / "Best Practices") and which is available from Common Ground Alliance in booklet form for easy reference. Best Practices addresses the most common issues for damage prevention for an encroaching party, including, among others: Planning and Design; One-Call Center; Locating and Marking; Excavation; and Mapping.
In the even of a conflict between laws and regulations, Magellan's policies and the Common Ground Alliance Best Practices, the following priority shall govern encroachments on Magellan's Easement Tract: 1st -- laws and regulations; 2nd -- Magellan policies; and 3rd -- Common Ground Alliance Best Practices.

B. MAGELLAN RIGHT OF WAY PRACTICE

1. Personal Property and Fixtures To Be Kept Off of Magellan's Easement Tract. In order to keep Magellan rights of way clear for operations, maintenance, inspection and emergency access, personal property and fixtures shall not be placed, stored or maintained on Magellan's Easement Tract. Personal property and fixtures include, but are not limited to, storage sheds, automobiles, trailers, mobile homes, above-ground swimming pools, business equipment, product inventory, scrap metal, boulders, large rocks, debris, junk and piles of materials.

2. Encroachments Subject to Being Cleared from Magellan's Easement Tract. Subject to the terms of its Easement (including right of way agreement[s] and other written agreements), Magellan may keep Magellan's Easement Tract clear of items that may hinder the exercise of Magellan's rights to construct, operate, inspect, maintain, repair and access its pipelines and other facilities. Clearing of the Magellan's Easement Tract shall include, but not be limited to the following: removal of trees, brush, crops, other vegetation and non-permitted encroachments located on or overhanging all or part of any Magellan's Easement Tract. Trees or other vegetation overhanging Magellan's Easement Tract may be side-trimmed.

C. ENCROACHMENT PLANNING

1. Plan Review Required by Magellan. For any encroachment, Magellan must be provided project plans to review and approve, *prior to the encroachment occurring*, for purposes of damage prevention.

2. Submission of Complete Plans. Owner must submit complete plans to Magellan for review. Incomplete plans could delay Magellan's engineering impact study and insufficient information could result in increased costs. Plans must include:

- A plan view of the project with the pipeline(s) location included.
- An illustration in profile of the existing surface elevations, the proposed surface elevations and the elevation of the Magellan pipeline(s).
- A comprehensive utility /structure /grading plan depicting the relationship to the pipeline(s).
- A proper legal description of the project location.
- Complete landscaping plans.
- Complete plans for backfilling and compaction of backfill material.

3. Plans Must Show Magellan's Easement Tract, Pipelines and Facilities. All construction plans (prints) showing lands where all or any part of Magellan's Easement Tract, any Magellan pipeline or facility is located must contain the following:

- Location and depth of all Magellan pipelines and facilities
- The width of Magellan's Easement Tract
- A standard warning statement *conspicuously displayed* containing the following language:

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited Without compliance with State One-Call AND Without Written Permission From MAGELLAN PIPELINE COMPANY, L.P.

4. Written Encroachment Agreement Required. A written, fully executed Encroachment Agreement must be in place between Magellan and Owner before Owner commences work on any encroachment.

5. Costs. Unless otherwise agreed in writing, all costs to Magellan that result from any encroachment should be paid by Owner. Such costs shall include, but not be limited to: modification, replacement, lowering, and protection of pipelines, including engineering evaluation and design, field labor and real estate research and document preparation and handling,

6. Pipeline Integrity Inspection. Prior to the installation of any structure, parking lot, roadway or other facility which might interfere with or hinder Magellan's inspection of any pipeline or facility, Magellan will perform an integrity review of its pipeline and any other assets which may be affected by the proposed structure, parking lot, roadway or other encroaching facility in order to determine that Magellan's assets comply with integrity requirements and to allow Magellan to make any needed changes prior to construction of any encroachments.

7. Soil On Magellan's Easement Tract -- Removing and Adding. No soil shall be removed from or added to Magellan's Easement Tract without written authorization from Magellan. Any soil added must be clean (without contaminants, trash or debris) fill dirt and must be *limited in amount* so that the resulting cover (vertical distance from the surface of the land to the top of Magellan's pipeline) is not greater than eight feet (8').

8. Erosion Control Materials. Erosion-control materials may be allowed on Magellan's Easement Tract for temporary periods of construction and restoration.

9. Proof of Title to Property. Magellan may require Owner to provide proof of current ownership of the land where the proposed encroachment is to be located. Such proof may be in the form of a Title Commitment, Title Policy, or a copy of a recorded Warranty Deed.

10. Subdivision Plat. Magellan requires a copy of the Subdivision Plat, if applicable. If the plat has been recorded, Magellan requires a copy indicating the book and the page of the recording.

11. Location and Approximate Depth of Pipelines. A Magellan representative is normally available with 48 hours notice (exclusive of weekends and holidays) to determine the location and approximate depth of the pipeline(s). Determining actual depths of pipelines may require pot-holing or hand-digging by, and at the expense of Owner in the presence of an authorized Magellan representative. No excavation on Magellan's Easement Tract shall take place without approval by Magellan.

12. Vertical Separation Between Magellan Pipeline or Facility and an Encroaching Object or Structure. Vertical separation is defined in this document as the vertical distance between the outermost part of a Magellan pipeline, facility or appurtenance (for example, the outside of the pipe [for uncased pipe] or the outside of the pipe casing [for cased pipe]) and the outermost part of the encroaching object (for example, the outside of the encroaching pipeline or the outside of its conduit).

13. Construction Equipment Information. Owner shall provide to Magellan information as to the type, size, and weight of construction equipment that will be used over or in the vicinity of the pipeline(s).

D. ENCROACHMENT DESIGN REQUIREMENTS & STANDARDS

1. Risk of Loss and Damage. Owner shall bear the risk of loss, damage and/or destruction to any structure, fence, landscaping or improvement placed within the boundaries of Magellan's Easement Tract and shall hold Magellan harmless

for damages, destruction of structures and for any consequential damages which may arise out of Magellan or its designees exercising Magellan's Easement rights or which may arise out of accessing Magellan's Easement Tract, pipelines or facilities.

2. **Buildings, Structures and Fences.**

a. **Buildings and Structures.** No buildings, houses, barns, garages, patios, playhouses, sheds, septic systems or drain fields, swimming pools (above-ground or below-ground), reinforced concrete slabs or other similar structures will be permitted on the Magellan's Easement Tract.

b. **Septic System not permitted.** No septic-system, including any lateral lines will be permitted on Magellan's Easement Tract.

c. **Retaining Walls.** Retaining walls are not permitted on Magellan's Easement Tract.

d. **Fences.** No fence shall be constructed or maintained on Magellan's Easement Tract without a written agreement.

e. **Requirements for Fences.** If fencing on Magellan's Easement Tract is authorized by a written agreement with Magellan, the fencing must comply with the following:

1) **Not Parallel to Pipeline.** No fence shall be allowed to be constructed parallel closer than 10 feet to any Magellan pipeline, within the boundaries of Magellan's Easement Tract.

2) **Fence Posts Location.** No fence posts will be allowed to be within five (5) feet of any Magellan pipeline or facility.

3) **Gates Required.** Magellan may require any fence constructed within the boundaries of Magellan's Easement Tract to have gates of such size and suitability as is necessary or convenient for Magellan to access its pipelines and/or facilities for its operations, including inspections, at each point where the fence crosses a Magellan pipeline or facility boundary. Magellan shall be allowed to put a Magellan lock on such gates, which will allow access to Magellan's Easement Tract and/or facilities through such gates.

4) **Angle of Fence Crossing.** It is preferred that fence crossings be as close to 90 degrees as possible.

3. **Landscaping, Elevation Changes and Water.**

a. **Landscaping Definition.** Landscaping shall include, but not be limited to, trees, shrubs, underground irrigation or sprinkler systems, sidewalks or other paths, retaining walls, terraces or other land grade changes, within Magellan's Easement Tract.

b. **General Landscaping Requirements.** The following are the general rules for landscaping on Magellan's Easement Tract:

1) **Written Approval.** Landscaping proposed to be done on Magellan's Easement Tract must be approved by Magellan in a written *encroachment agreement*. Among other terms, the encroachment agreement will release Magellan from any liability for damages to the landscaping from the exercise of Magellan's Easement rights.

2) **Trees Not Permitted.** Trees are not permitted on Magellan's Easement Tract.

3) **Shrubs.** Shrubs exceeding 3 feet in height and/or obstructing the view of any Magellan pipeline marker posts are not permitted on Magellan's Easement Tract.

4) **Irrigation Systems, Field Drain Lines, and Sidewalks.** Irrigation systems, field drain lines and sidewalks that are to cross a Magellan pipeline must cross such pipeline at an angle as close to 90 degrees as possible, but in no event at an angle less than 45 degrees and must comply with other applicable provisions of this document.

c. **No Water Bodies on Magellan's Easement Tract.** Retention of water, including but not limited to, Livestock ponds, lakes, retention ponds, or wetlands may not be constructed or formed on Magellan's Easement Tract.

d. **Surface Grade and Elevation Changes.** Surface grade or elevation changes must be reviewed and approved in writing by Magellan.

4. **Foreign Pipeline & Utility Crossings.** No foreign pipelines or utility lines of any type shall be allowed to be constructed parallel to any Magellan pipeline within the boundaries of Magellan's Easement Tract.

a. **Minimum Angle for Pipeline/Utility Crossing.** Any foreign pipeline or utility that is proposed to cross a Magellan pipeline must cross the Magellan pipeline at an angle as close to 90 degrees as possible, but in no event at an angle less than 45 degrees.

b. **Vertical Separation Requirements for Crossing.** Foreign pipeline(s), utilities (except high-voltage lines – see below) or flow lines should cross Magellan pipeline(s) with at least 24 inches of vertical separation. Special written authorization must be given in the event vertical separation is less than that specified in these General Encroachment Requirements. The preferred method for a foreign pipeline or utility to cross a Magellan pipeline is to cross ***below*** the Magellan pipeline.

c. **Warning Tape Required.** When any foreign pipeline or utility line is proposed to cross a Magellan pipeline, Owner must place 6" wide McMaster-Carr No. 8288T12 or equal within Magellan's Easement Tract in the following manner:

1) The tape must be placed directly over (parallel to) and at least 15 inches above the foreign line for the entire distance that it occupies Magellan's Easement Tract. Additionally, the tape must be placed directly over (parallel to) and at least 15 inches above each Magellan pipeline that is crossed for a minimum distance which is the greater of:

(a) a minimum distance of 20 feet on each side of the Magellan pipeline, or

(b) across the entire width of Magellan's Easement Tract

2) The placement of warning tape on each side of *Magellan* pipeline(s) will not be required for utility cables that are installed using the directional drill or jacking method.

d. **Crossings By Metal Pipelines or Conduits.** Metallic pipe crossing Magellan pipeline(s) may require Magellan to perform a cathodic protection interference survey. If interference with Magellan's cathodic protection system is detected and remediation is necessary, Owner agrees to cooperate with Magellan and to make necessary adjustments in Owner's interfering metallic pipe or other remediation to correct such interference problem insure that the Magellan cathodic protection system is operating properly.

e. **Crossing Requirements.** Electrical, fiber optic, local service communication, long distance carrier telephone, and utility cables should cross Magellan pipeline(s) with a ***minimum of 24-inches of vertical separation***. All such lines must be covered with a *Concrete Slab* for the full width of the Easement Tract, if requested by Magellan. If such lines have an exposed concentric neutral, a test point from the ground wire shall be installed by the power company.

f. **Crossing Requirements For Lines Going Over a Magellan Pipeline.** In the event the electrical, fiber optic, local service communication, long distance carrier telephone, and utility cables cable crosses ***over*** a Magellan pipeline, such line shall be ***encased in red concrete across the full width of Magellan's Easement Tract***, unless a variance is granted by Magellan, as set forth below.

g. **Written Authorization for Variance.** Owner must have written authorization from Magellan for any variance from the vertical separation requirements listed above and/or for any variance from the requirement for encasement of high-voltage electrical lines in red concrete.

h. **Utility Poles and Guy Anchors.** Utility poles and guy anchors shall not be placed on Magellan's Easement Tract without a written agreement. With a written agreement, poles and anchors may be placed no closer than 20 feet to any Magellan pipeline. Poles shall not be allowed to run parallel to a Magellan pipeline within the Magellan Easement Tract.

i. **Directional Drilling / Boring.**

1) Prior to commencing any horizontal directional drilling, Owner shall submit plans showing procedure and material descriptions for Magellan's approval. The plans and description shall include, but not be limited to the following:

- Profile and plan showing location of entry and exit points
- Work space required to perform the work
- Mud containment and disposal sites

2) Owner shall positively locate and stake the location of Magellan's existing pipelines and other underground facilities, including exposing any facilities located within 10 feet of the designed drilled path. Prior to commencing drilling operations, Owner shall modify drilling practices and down-hole assemblies to prevent damage to Magellan's existing pipelines and other facilities. Owner shall be responsible for losses and repairs occasioned by damage all Magellan pipelines and other facilities resulting from drilling or boring operations.

3) At all times, Owner shall provide and maintain instrumentation to document and accurately locate the pilot hole and the drill bit, to measure drill-string axial and torsional loads, and to measure drilling fluid discharge rate and pressure. At Magellan's request, Owner shall promptly provide Magellan with reasonable access to information and readings provided by these instruments, including copies of any written documentation.

4) Pilot Hole.

- The pilot hole shall be drilled along the path shown in the plan and profile drawings. No pilot hole shall be made that will result in any of the encroaching utility being installed in violation of laws and regulations or of Magellan's requirements described herein. However, safety for any adjacent utilities and/or structures is of utmost importance. Therefore, the listing of separation distances or tolerances herein does not relieve Owner from responsibility for safe operations or for damage to adjacent utilities and structures.
- If tolerances are not specified in the plan and profile drawings, the pilot hole shall have the following tolerances:
  - Elevation of +0 feet and -15 feet
  - Alignment of +/-20 feet as long as it does not come to within 10 feet of Magellan's pipeline
  - Initial penetration of ground surface at exact location shown in the plan and profile drawings
  - Final penetration of the ground surface within +/-10 feet of the alignment and within +30 feet and -0 feet of the length shown in the plan and profile drawings
  - Curves shall be drilled at a radius equal to or greater than that specified in the plan and profile drawings. The drilled radius will be calculated over any 3 joints (range 2 type drill pipe) segment using the following formula:

    Rdrilled = (Ldrilled/Aavg) x 180/π

    Where: Rdrilled =drilled radius over Ldrilled

    Ldrilled = length drilled, no less than 75 feet and no greater than 100 feet

    Aavg = total change in angle over Ldrilled
- At the completion of the pilot-hole drilling, Owner shall provide to Magellan a tabulation of horizontal and vertical coordinates, referenced to the drilled entry point, which accurately describe the location of the pilot hole.

5) **Drilling Fluids.**

- The composition of drilling fluids proposed for use shall comply with all applicable laws and regulations.
- Owner is responsible for obtaining, transporting and storing any water required for drilling fluids.
- Disposal of drilling fluids and drill cuttings shall be Owner's responsibility and shall be conducted in compliance with applicable laws and regulations. Drilling fluid shall *not* be disposed of by placing fluids on or under the surface of Magellan's Easement Tract.
- Owner shall employ best efforts to maintain full annular circulation of drilling fluids. Drilling fluid returns at locations other than entry and exit points shall be minimized. If annular circulation is lost, Owner shall take steps to restore circulation. If inadvertent surface returns of drilling fluids occur, they shall be immediately contained with hand-placed barriers (e.g., hay bales, sand bags, silt fences, etc.) and collected using pumps as practical. If the amount of surface return is not great enough to allow practical collection, the affected area will be diluted with fresh water and the fluid will be allowed to dry and dissipate naturally. If

the amount of surface return exceeds that which can be contained with band-placed barriers, small collection sumps (less than 5 cubic yards) may be used unless permits or other regulations prohibit the use of collection sumps. If the amount of surface return exceeds that which can be contained and collected using barriers or small sumps, or if the return of drilling fluids occurs in the body of water proper, drilling operations will be suspended until surface return volumes can be controlled.

6) As-Built Drawing. Owner shall provide to Magellan an as-built plan and profile drawing of the drilled crossing showing the location of the new crossing as well as the location of Magellan's pipeline.

5. **Roadway, Driveway, Railroad and Equipment Crossings.** No roadway, driveway, railroad or equipment crossings of any type shall be allowed to be constructed parallel to any Magellan pipeline within the boundaries of Magellan's Easement Tract.

a. Pipeline Integrity Inspection. A pipeline integrity review shall be performed by Magellan as described in provision "6" under "C. *Encroachment Planning*" (above).

b. Load Bearing and Stress Limit Requirements. Prior to any road, driveway, rail bed or equipment crossing construction, Magellan's engineer must determine whether the proposed compacted cover meets load-bearing requirements and provides adequate protection to limit stress on Magellan's pipeline or other facilities and must advise Owner of any additional requirements necessary to provide adequate protection.

c. No Crossing Over Pipeline Bend. Paved surfaces or rail beds shall not be allowed to cross a pipeline bend (point of inflection).

d. Minimum Angle of Crossing. Crossings should be as close to 90 degrees to Magellan pipeline(s) as possible, but not less than 30 degrees.

e. Pipeline Casing Issues. Magellan prefers that cased roadway and railroad crossings no longer be installed. If the carrier pipe under roadways and railroads requires adjustment or relocation, then instead of using casing, the carrier pipe will consist of extra strength material or heavier wall thickness to accommodate the additional longitudinal stress due to external loads. If a road or railroad crossing currently uses casing and the road or railroad is being widened and no other adjustment or relocation of the carrier pipe is required, then Magellan may elect to extend the casing pipe on the existing crossing(s) to accommodate additional road surface. If casing is used, it must not end under the roadway surface or track structure, but must extend across the entire length of the roadway or railroad right of way.

f. Railroad Crossing Requirements. Railroads shall be installed with a minimum compacted cover over the carrier pipe, as measured from the base of the rail to the top of the pipe, as follows (*see Figures 1 and 3*):

Location of Pipeline	Minimum Compacted Cover Over Top of Pipeline
Under track structure proper (Below bottom of rail)	6.0 feet
Under all other surfaces within the right of way or from the bottom of ditches	3.0 feet

g. Roadway and Driveway Crossings. Roadways and driveways, shall be installed with a minimum compacted cover over the carrier pipe, as measured from the top of the roadway surface to the top of the pipe, as follows (*see Figures 2 and 4*):

Location of Pipeline	Minimum Compacted Cover Over Top of Pipeline
Under roadway surface proper (Below surface of pavement)	4.0 feet
Under all other surfaces within the right of way or from the bottom of ditches	3.0 feet

h. Crossing Pipelines Transporting Highly Volatile Liquids. For Magellan pipelines transporting highly volatile liquids, minimum cover for a crossing at a drainage ditch must be 4.0 feet.

i. When Additional Depth Required. Depth greater than the minimum depths stated above may be required for a pipeline due to the combined stress of internal pipeline pressure and external loading pressure. Magellan will analyze each proposed crossing based on information provided by Owner to determine any additional depth that may be required for the pipeline for safe operation.

j. Temporary Roads and Equipment Crossings. Any such road or crossing must meet the following requirements:

- Must be located at a site approved by a Magellan field representative.
- Must provide adequate protection for Magellan's pipeline and other facilities, as determined by the appropriate Magellan engineer, so that the compacted cover meets load-bearing requirements and provides adequate protection to limit stress on the pipeline or other facilities.
- Owner shall place Six-inch wide plastic warning tape, McMaster-Carr No. 8288T12 or equal, over each pipeline for the width of the temporary road or equipment crossing, plus an additional 20 feet past each outside edge of such temporary road or equipment crossing

k. Owner Required to Protect Magellan Pipelines. Magellan may require Owner to put in place additional cover and/or stabilization (timbers, steel plate, crushed rock, concrete slab, etc.) at any approved equipment crossing in order to protect Magellan pipelines, taking into account possible effects of weather, pipeline depth, and type of vehicles proposed to cross the pipelines. Magellan will analyze each proposed crossing based on information provided by Owner to determine any additional depth or protection that may be required for safe pipeline operation.

l. Heavy Equipment - Definition and Requirements. Heavy equipment shall be defined as vehicles having a *gross weight* in excess of 80,000 pounds. Heavy equipment shall be prohibited from working directly on top of the active pipeline. For vehicles having a *gross weight* of 80,000 pounds or less, the pipeline must have a minimum of 4 feet of cover. Magellan must analyze the additional longitudinal stress due to external loads if the vehicles have a *gross weight* in excess of 80,000 pounds in order to determine required pipeline depth for safe operation.

6. **Parking Lots and Other Pavement.**

a. Parking Lot and Pavement Requirements. All parking lots and other pavement installed on Magellan's Easement Tract shall consist of a flexible surface such as asphalt. No reinforced concrete will be allowed.

b. Pipeline Depth Under Parking Lot. The depth of Magellan's pipelines under a parking lot must meet or exceed compacted cover requirements listed in the previous "Roadway, Driveway, Railroad, and Equipment Crossings" section above

7. **Waterway Crossings.**

a. Pipeline Depth Requirements. If Owner proposes to cross a Magellan pipeline with a waterway (river, stream, creek, irrigation canal, or drainage ditch), such crossing must result in Magellan's pipelines meeting or exceeding the minimum depth below the bottom of the waterway for compliance with then current pipeline construction standards and federal, state, and local regulations.

b. Requirements for Waterway Crossings:

1) Minimum Angle or Crossing. Crossings should be as close to 90 degrees to Magellan pipeline(s) as possible, but not less than 45 degrees.

2) Vertical Separation Requirements for Waterway Crossing. Pipelines to be crossed must have a minimum vertical separation of five (5) feet, as measured from the bottom of the waterway to the outermost part of a Magellan pipeline, facility or appurtenance

3) Adding Weight to Pipeline for Negative Buoyancy. Owner shall bear the cost of Magellan adding sufficient weight or mechanical devices to any Magellan pipeline crossed by a waterway in order to create negative buoyancy for such pipeline.

8. **Blasting.**

a. Magellan Written Approval Required – Plan To Be Submitted. Magellan must approve any proposed blasting operations that could affect its pipelines or facilities. Should blasting be necessary, a comprehensive plan must be submitted to Magellan for review and written approval.

b. Safety Considerations – Damage Prevention Plan. For safety and preservation of Magellan assets, all blasting shall be in accordance with federal, state, and local governing agencies and the Magellan's "Damage Prevention Plan for Blasting Near Company Facilities". A copy of said plan will be made available upon request.

E. **EXCAVATION NEAR MAGELLAN PIPELINES.**

1. **STATE "ONE-CALL" REQUIRED.** No excavation or activity listed in "*A. GENERAL - 1. Encroachment Definition*" above shall be performed by Owner in the vicinity of Magellan's facilities or within Magellan's Easement Tract until proper telephone notification has been made to the appropriate "One Call" system and a Magellan representative is on-site to monitor excavation activities. All of the states in which Magellan conducts pipeline operations have "One Call" laws, which require 48-72-hours notification prior to any excavation related activities. After making a One-Call, the state One-Call agency will notify Magellan to mark accurately, in a reasonable and timely manner, the location of the Magellan's pipeline facilities in the vicinity of the proposed encroachment.

2. **ONE-CALL NOTIFICATION.** *The following list is provided for convenience, but is not warranted by Magellan to be complete or accurate (telephone numbers were copied from each state's web site on 1/5/2004).* **Owner is required to acquire and call the appropriate One-Call number(s) for its location of activity.**

Current "ONE-CALL" numbers and information can be found on each state's "ONE-CALL" website:

Arkansas - www.arkonecall.com/ - 800 482-8998
Colorado - www.uncc2.org/ - 800 922-1987
Illinois - www.illinoiscall.com/ - 800 892-0123
Iowa - www.iowaonecall.com/ - 800 292-8989
Kansas - www.kansasonecall.com/ - 800 344-7233
Minnesota -www.gopherstateonecall.org/ - 800 252-1166
Missouri - www.mo1call.com/ - 800 344-7483
Nebraska - www.ne-diggers.com/ - 800 331-5666
North Dakota -www.ndonecall.com/ - 800 795-0555
Oklahoma - www.callokie.com/ - 800 522-6543
South Dakota -www.sdonecall.com/index.asp - 800 781-7474
Texas - www.texasonecall.com/ - 800 245-4545
Wisconsin - www.diggershotline.com/ - 800 242-8511

Alternatively, the National One-Call number – (888) 258-0808 - may be used to register a proposed excavation and to subsequently notify underground utility operators with assets in the vicinity.

3. **Excavation Plan Approval.** Owner shall submit to Magellan for its approval plans for any proposed excavation on the Magellan Easement Tract. No excavation on Magellan's Easement Tract shall be commenced until Owner has secured Magellan's written approval of the plans. The excavation work shall be in compliance with all applicable laws and regulations. Owner is also referred to the Common Ground Alliance Best Practices (referenced in this document).

4. **Magellan Representative On-Site for Excavation.** A Magellan representative must be on-site when an excavation is occurring on Magellan's Easement Tract (*see provision "2" under "A. General" beginning on page 1*).

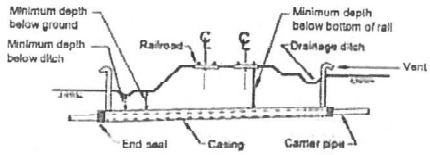
5. **Removal of Side-Cutting Teeth from Equipment.** Side-cutting teeth shall be removed from buckets of excavating equipment.

6. **Parallel Excavating Required.** When, in preparation for crossing any Magellan pipeline with any other pipeline or with electric line, communication line, roadway or any other structure or facility, Owner needs to locate a Magellan pipeline by use of mechanical means. Owner must perform such locating activity by excavating parallel to the Magellan pipeline with such mechanical means, but

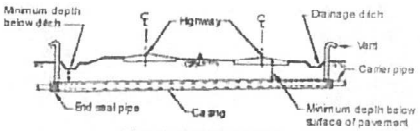
shall cease using the mechanical means when it reaches a point within two feet of the Magellan pipeline (*see next provision*).

7. **Exposing Pipeline by Hand.** Excavating within 2 feet of any Magellan pipeline shall be done by *hand-digging* until the pipeline is exposed and its location is accurately known. Then, Owner must position the excavation equipment so that from the point of operations the equipment will not reach within 2 feet of any Magellan pipeline.

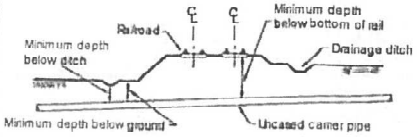
RAILROAD AND HIGHWAY CROSSINGS



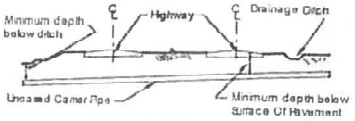
CASED RAILROAD CROSSING
FIGURE 1



CASED HIGHWAY CROSSING
FIGURE 2



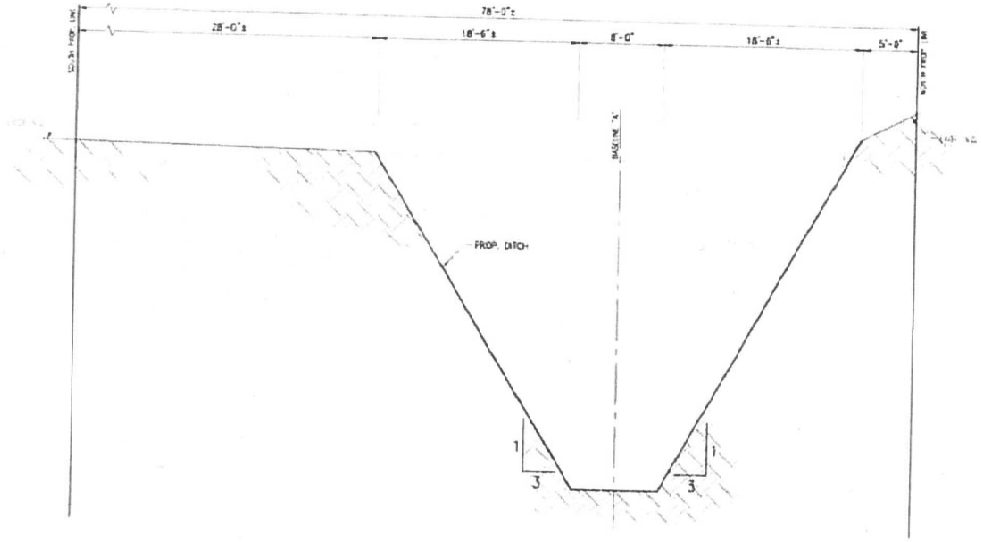
UNCASED RAILROAD CROSSING
FIGURE 3



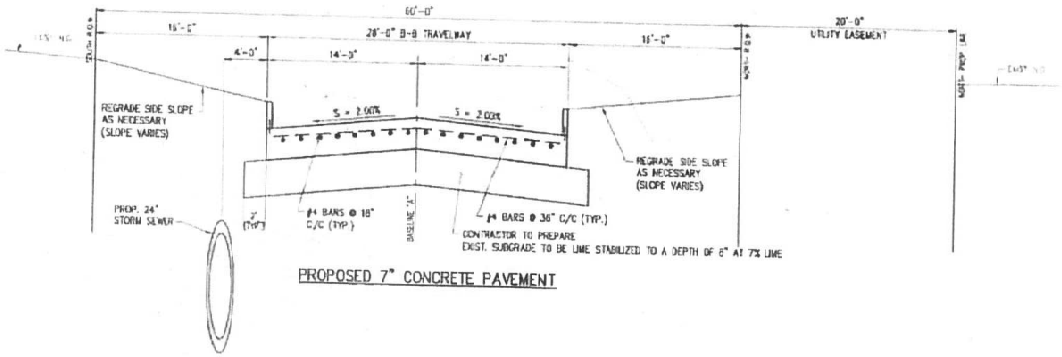
UNCASED HIGHWAY CROSSING
FIGURE 4

EXHIBIT "C"

PLAN DRAWINGS



PROPOSED DITCH



PROPOSED 7" CONCRETE PAVEMENT

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION BIDDING OR PERMIT PURPOSES.
MARK E. KAVANA
TEXAS P.E. NO. 73870
DATE MAY 2018

Revision	By	Chk	App	Date

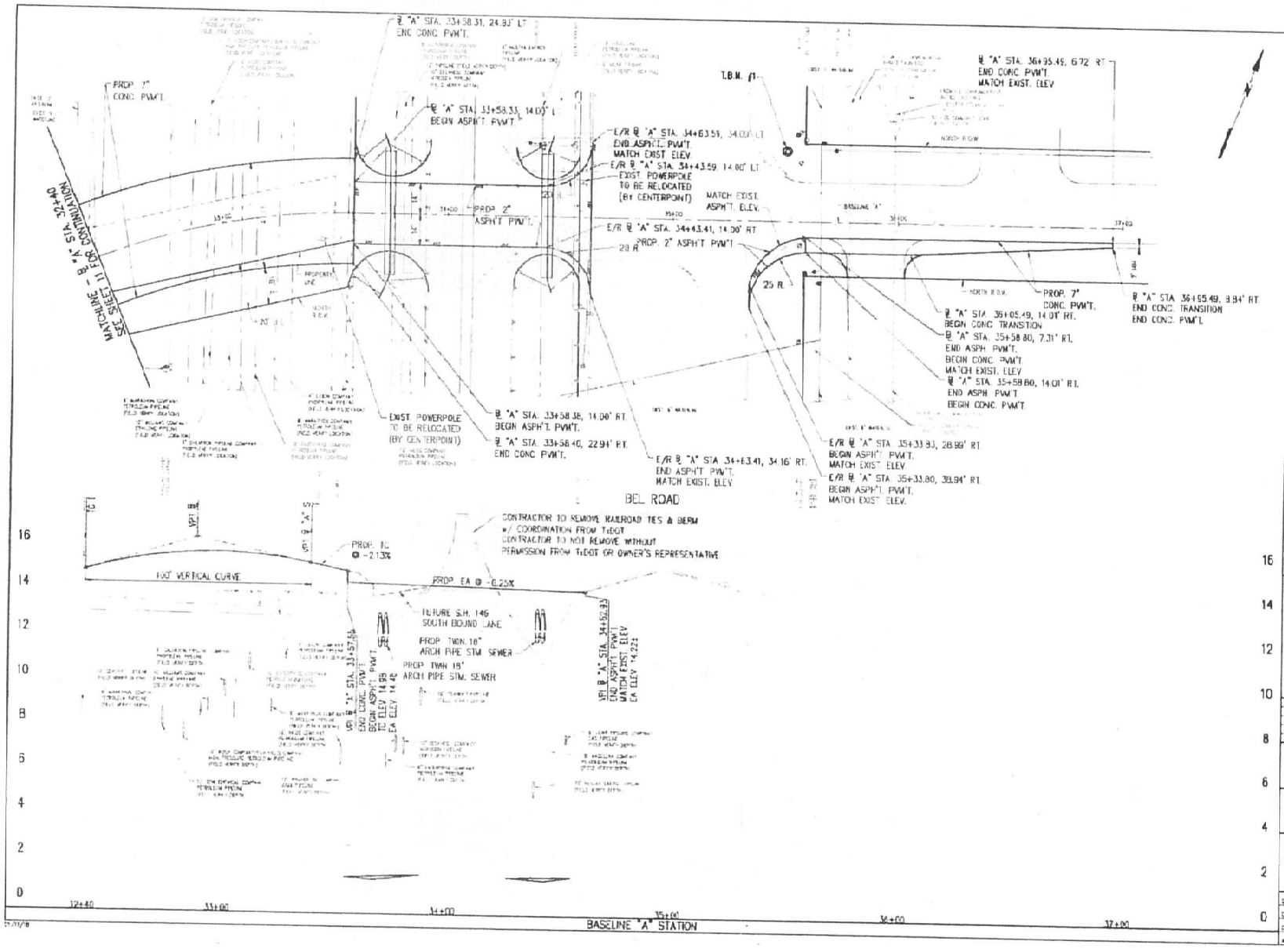
CITY OF KEMAH
BEL ROAD EXTENSION
& LINEAR DETENTION DITCH

TYPICAL SECTIONS

LJA Engineering, Inc.
11421 Beal Freeway
Suite 360
Houston, Texas 77008
Phone 713.460.1300
Fax 713.460.1188
TBPE F-1386

DESIGN: K.E.H.	JOB No. 2.36-6318 Cont. No.
DRAWN: P.R.	DATE: MAY, 2018
CHECKED:	SCALE: N.T.S.
APPROVED:	SHEET No. 24 OF 25

07/01/18



BENCHMARK NOTE

BM #310210:

NOTICE

VERIFICATION OF PRIVATE UTILITIES

PRINTED COMMUNICATIONS

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND SHALL NOT BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES

Revision	By	Chk	App	Date

CITY OF KEMAH
BEL ROAD EXTENSION
& LINEAR DETENTION DITCH

BEL ROAD
PLAN & PROFILE
BL "A" STA. 32+40 TO END

LJA Engineering, Inc.
11821 East Freeway
Suite 300
Houston, Texas 77029
Phone 713.450.1300
Fax 713.450.1385
FRN - F-1386

DESIGN: R.J.H.
DRAWN: P.P.
CHECKED:
APPROVED:
JOB No. 0120-0320 Cont. No.
DATE: MAY 2018
SCALE: 1"=20' HORIZ. 1"=1' VERT.
SHEET No. 12 OF 21

MARATHON

Marathon Pipe Line LLC
539 South Main Street
Findlay, OH 45840
Telephone: (419) 422-2121

May 16, 2018

T&C files: 11-A27-005-000089_1
11-A27-002-000163_1

Mayor Carl Joiner
City of Kemah, Texas
1401 Highway 146
Kemah, Texas 77565

RE: Letter of No Objection, Bel Road Extension

Dear Mayor Joiner:

This letter is in response to The City of Kemah plans to extend Bel road to the west side of Hwy 146 near the intersection of FM 518 and Hwy 146. The plans were provided for review by Kyle Vincent with LJA Engineering. Attached to this letter is Exhibit A drawing by LJA dated May 2018. The road will be approximately 1,420 lf and will be 15" deep including stabilized subgrade. The heaviest piece of machinery on the pipelines will be a full concrete truck weighing between 70,000-80,000 lb.

Marathon has two (2) 8 inch petroleum pipelines that the proposed Bel road project will cross. Based on the Exhibit A drawing, the current depths of our pipelines and the proposed final grade over our pipelines Marathon has no objection to the construction of Bel road with the following requirements:

1. An 811 must be placed prior to the start of the work.

2. A Marathon representative must be on site during all work within fifty (50) feet on Marathon's pipelines. Please contact Mike McCaffrey (281-753-3164) to coordinate on site work. Marathon reserves the right to temporarily stop work or amend these requirements for any safety related conditions to the pipelines as a result of the Bel road extension project.

3. Construction activities that cross over the pipelines will require the use of mats for concrete trucks and any other heavy equipment on wheels to protect the pipelines from damage per the Marathon representative on site. Crossing with tracked equipment is fine as long as ground conditions are solid.

4. Vibrating equipment shall be turned off while traveling over the pipelines.

It is understood that in no way does this Letter of No Objection release the City of Kemah or its affiliates, employees, contractors or agents from liability for damages to Marathon's pipelines as a result of the project.

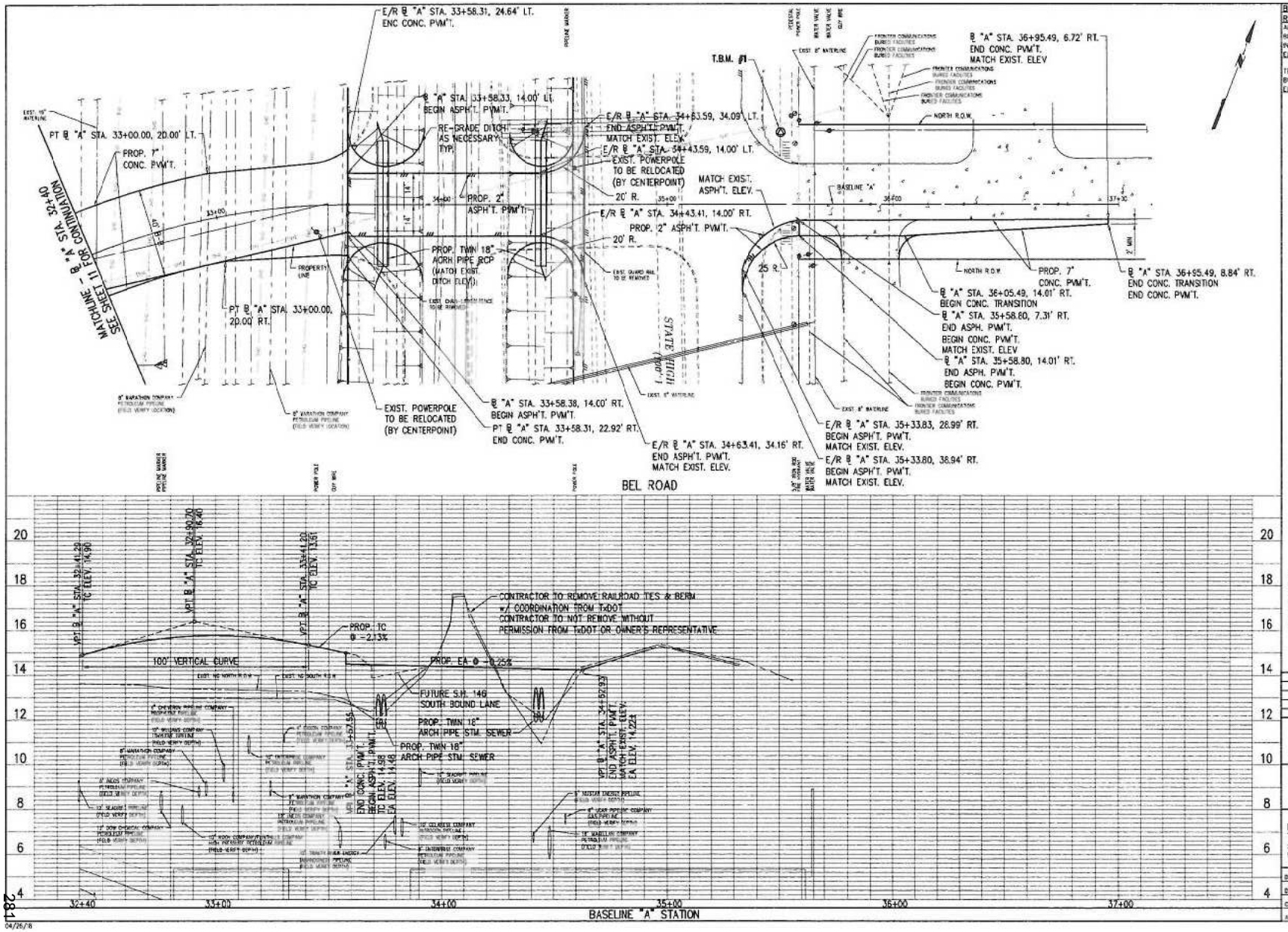
Please contact me with any questions.

Sincerely,

Greg Newman

Greg Newman
Senior Right of Way Specialist
Marathon Pipe Line LLC
20-C Industrial Drive
Lexington, OH 44904
O: 419-884-0800, X-236
C: 419-564-+8826

Attached: Exhibit A, LJA Engineering drawing dated May 2018.



BENCHMARK NOTE

BM #010C10:
ALUMINUM DISK AT THE CENTER OF TRONVILLE ROAD BRIDGE ON THE EAST SIDE OF BRIDGE WITH IT'S INTERSECTION WITH CLEAR CREEK (X100-08-00).
ELEVATION: 3.88 (NAVD88 200'ADJ)

TBM #1:
BOX CUT ON WINDWALL (AS SHOWN)
ELEVATION: 13.27 (NAVD88 200'ADJ)

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND ARE NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.
MARK E. HAVRAN
TEXAS P.E. NO. 119610
DATE MAY, 2018

Revision	By	Chk.	Appr.	Date

CITY OF KEMAH
BEL ROAD EXTENSION & LINEAR DETENTION DITCH

BEL ROAD
PLAN & PROFILE
BL "A" STA. 32+40 TO END

LJA Engineering, Inc.
11421 East Freeway
Suite 300
Houston Texas 77029
Phone 713.450.1330
Fax 713.450.1385
FRN - F-1386

DESIGN: M.E.H.	JOB No. E135-0320 Cont. No.
DRAWN: P.B.	DATE: MAY, 2018
CHECKED:	SCALE: 1"=20' HORIZ.; 1"=2' VER.
APPROVED:	EXHIBIT A

H:\ACAD\Clients\135\0320\Dwgs\Pipelines\Pipeline Exhibit A - Marathon.dwg (XREF: GBS-050 Border 135-0320 Base; 135-0320 Profile; 135-0320 Border)

NUSTAR

Kyle Vincent

From: Hooter, Ernie <Ernie.Hooter@nustarenergy.com>
Sent: Tuesday, April 3, 2018 11:38 AM
To: Kyle Vincent
Cc: Skinner, Denise; Korenek, Greg
Subject: LONO - Bel Road Extension
Attachments: Bel Road Paving.pdf

March 9, 2018

Kyle Vincent
LJA Engineering
Houston, Texas

Reference: Bel Road Extension, City of Kemah

Dear Mr. Vincent:

NuStar has no objection(LONO) to the proposed City of Kemah Bel Road Extension crossing the NuStar Pipeline as shown on the attached drawings you provided:

- Bel Road Plan & Profile sheet 12 of 25(PDF 13)

No activity shall be performed within the NuStar easement or in the vicinity of any NuStar Pipeline without providing NuStar with 48 hours' notice. Please contact Greg Korenek (C) 832-244-9699.

Please contact me if I can be of further assistance.

Sincerely,

Ernest L. Hooter

Ernest L. Hooter
410 S. Padre Island Drive, Suite 200
Corpus Christi, TX 78405
281-467-8394
Ernie.hooter@nustarenergy.com

TRINITY RIVER

Kyle Vincent

From: John Hageman <jhageman@trinityriverenergy.com>
Sent: Wednesday, January 31, 2018 1:44 PM
To: Kyle Vincent; donald.glover@mvgesolutions.com; Wallace Trochesset
Cc: Mark Havran; Don Glover; king.yuen@txdot.gov; david.roberts@txdot.gov; jsilva@rios-group.com; Gary DeGrange
Subject: RE: Bel Road Extension-Trinity River Pipeline
Attachments: TXDOT meeting re: SH 146 1-30-18

Importance: High

Kyle, thanks for the information.
Please note my Trinity River contact information and email.
Also, I have attached the email I sent earlier today to Wallace, TXDOT and Rios Group.

In short, Trinity River is in wind down and as an entity will not be around for much longer.

As is obvious, I am not an engineer, so bottom line is and what I need to know, is whether we can leave the pipeline in place since it is abandoned, and if so, what do we need to get from TXDOT or you guys to confirm that this is okay?
Would appreciate some guidance on what we need to do and whom we need to communicate with in order to allow this project to move forward.
Appreciate your advice and guidance on this TXDOT road expansion project.

John Hageman
Chief Legal Officer

TRINITY RIVER ENERGY
15021 Katy Freeway, Suite 200
Houston, TX 77094
Cell: 713-557-8348
www.trinityriverenergy.com

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From: Kyle Vincent [mailto:kvincent@lja.com]
Sent: Wednesday, January 31, 2018 1:31 PM
To: John Hageman <jhageman@carnritegroup.com>; donald.glover@mvgesolutions.com
Cc: Mark Havran <mhavran@lja.com>
Subject: Bel Road Extension-Trinity River Pipeline

Howdy,

Here is the preliminary plan set for the extension of Bel Road. The pipeline crossing is on page 12.
Our new road will be 15" deep including stabilized subgrade.

The heaviest piece of machinery on the pipelines during construction will be a full concrete truck weighing between 70,000-80,000 lb.
Let me know if you need anything else.

Thank You,

Kyle Vincent
Graduate Engineer, EIT

LJA Engineering | We Build Civilization
East Houston
P: (713) 450-1300
D: (713) 657-6024
www.lja.com
Facebook • Twitter • LinkedIn

WILLIAMS

LETTER OF NO OBJECTION

March 13, 2018
City of Kemah
1401 State Highway 146
Kemah, Texas 77565

RE: Letter of No Objection issued to the City of Kemah, Texas.
Location Miguel Muldoon 2 LGS, A-18 Galveston County, Texas.

Dear _____:

Williams Purity Pipeline, LLC ("Company") grants conditional approval for a period of ninety (90)) days beginning at the date hereof to the City of Kemah to extend Bel Road over and across Company pipeline(s) in Harris County, Texas (as shown in the attached plans), subject to the following conditions.

1. All crossings will cross Company pipeline(s) at right angles, where practicable.

2. City of Kemah will provide as-built drawings of the crossing upon completion of construction.

3 City of Kemah will contact Company representative Raul Saavedra at (346) 321-8264 prior to commencement of construction activities. If Company activities are performed in area, please notify State ONE CALL at 811, 24 hours a day.

4. City of Kemah **COVENANT AND AGREE TO INDEMNIFY AND FOREVER HOLD HARMLESS COMPANY AGAINST EACH AND EVERY CLAIM, DEMAND, OR CAUSE OF ACTION THAT MAY BE MADE OR COME AGAINST IT BY REASON OR IN ANYWAY ARISING OUT OF THE ACTIVITY FOR WHICH THIS AGREEMENT HAS BEEN GRANTED EXCEPT TO THE EXTENT SUCH CLAIM DEMAND OR CAUSE OF ACTION ARISES OUT OF THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF WILLIAMS**

Any waiver of any specific portion of the above must be in writing and in no way waives any other part of this Agreement.

Sincerely,

Carl A. Joiner
City of Kemah

By: CARL A. JOHER

Title: MAYOR

AGREED TO AND ACCEPTED this 18 day of APRIL, 20 15

Williams Purity Pipelines, LLC

By: _____ Kevin L. Bradshaw

Title: Attorney In Fact