505 East Huntland Drive
Suite 250
Austin, Texas 78752

T 512.454.8716
TRCcompanies.com
T.B.P.E. #F-8632

May 19, 2022

Mr. Tim Howe
Director of Water/Wastewater
City of Seguin
P.O. Box 591
Seguin, Texas 78156-0591

RE: 24" Transmission Water Pipeline Project
Vetter Booster Station to 123 Elevated Storage Tank
Final Engineering Services Proposal

Dear Mr. Howe:

TRC Engineers, Inc. (TRC) has prepared this proposal for professional engineering services for the design of the 24" diameter water transmission pipeline project, to extend from the Vetter Booster Station to the Hwy. 123 Elevated Storage Tank. This proposal is a supplement to the preliminary engineering services previously approved by the City (dated November 23, 2021).

PROJECT DESCRIPTION

The proposed project will consist of a proposed 24" PVC water main routed north from the Vetter Booster Station to the Hwy. 123 elevated storage tank site North of I-10, as shown on the attached pipeline route map, to include the following components (defined as project limits):

1. Approximately 10,500 linear feet of 24" PVC water main to include jack-and-bore of a steel casing pipe with PVC carrier pipe beneath I-10.
2. Ten (10) 24" isolation gate valves.
3. Twenty (20) fire hydrants with 6" PVC piping and isolation valves.
4. Connection to the 24" water pipeline within the Vetter Booster Station Site.
5. Connection to the bottom of the steel tank bowl on the Hwy. 123 elevated storage tank.
6. Modifications to the Vetter Booster Pumps by the addition of a pressure sustaining valve or pump impeller modifications required due to the reduced pipeline pressure.

ENGINEERING SCOPE OF WORK (SOW)

TRC will perform the following Engineering Scope of Work:

A. Topographical Survey

1. Acquire additional field topographical data for the design portion of the project on City's coordinate system, to include:
    a. Detailed survey including utility locates (as furnished by the specific utility provider) within the project limits described above.
    b. Provide subsurface utility engineering (SUE) for utility locates (quality level C and D).

2. Set horizontal and vertical primary control points.
    a. Primary control points shall be set at an approximate spacing of 500 ft. and inter-visible with each other where possible, away from possible disturbance from construction activity.
    b. Primary control points shall be used as the primary horizontal and vertical control for the project and as benchmarks for the project.
    c. Horizontal and vertical data for primary control shall be based on Static RTK observations using the Leica Smartnet Network.
    d. The horizontal datum shall be based on NAD83 (2011) using the Texas Coordinate System, Central Zone (4203),
    e. The vertical datum shall be based on NAVD88 using Geoid 12B.
    f. Secondary control points shall be set as necessary for conventional ground surveying and terrestrial LiDAR scans

3. Perform necessary research to obtain ownership records for properties affected by the project limits.
    a. Prepare a project ownership spreadsheet and perform right-of-entry (ROE) coordination for site access from property owners to secure access for locating property corners, topographic design surveying within the survey limits and to set proposed right of way (ROW) corners. The City will send the right-of-entry access forms to the various property owners and acquire signatures.

4. Provide design level topographic survey data within the project survey limits.
    a. The survey will be performed on the ground utilizing a combination of terrestrial LiDAR with traditional field observation methods to locate found visible features, both horizontally and vertically, including existing on-site structures, drainage features, adjacent and onsite sidewalks, curb lines, pavement, roadway paint striping, driveways, fences and visible above-ground utility appurtenances within the survey limits.
    b. The survey will obtain topographic field elevations throughout the project site at 50-foot station intervals for use in developing a digital terrain model.

c. Markings from franchise utility services and city utilities will be located at time of survey.

d. Flowline elevations of found storm water and sanitary sewer manhole inlet structures immediately adjoining the site will be identified.

e. The survey will field locate found protected trees 6 inches or greater in trunk diameter measured at breast height, in accordance with municipal code. Trees will be tagged in the field and shown on the survey noting trunk diameter, species and canopy size.

f. Survey deliverable will be an AutoCAD .dwg file showing topographic points, features and 1 ft contours, accompanied by a point file in .csv format and digital terrain model in .xml format.

5. Surveyor will perform necessary research to acquire ROW maps, current adjoining property deeds and subdivision plats for properties affected by the project limits.

   a. Field boundary reconnaissance will be performed to locate found subject property and adjoining property corner monumentation.

   b. Results will be compared, and boundary resolutions determined for affected rights-of-way and properties adjoining the project limits.

   c. Existing easements of record discovered during abstracting will be shown on the survey.

   d. Deliverable will be PDF copies of property research and an AutoCAD .dwg file showing established ROW lines, adjoining property lines, found easements and record property ownership information.

6. Provide survey field notes for:

   a. Twelve (12) land acquisitions including permanent easement and construction access, to include ownership/existing easement title work.

   b. Platting services to include:

      (i) Creation of twelve (12) Certified Easement Plats and Legal Descriptions for private property owners along the proposed route.

      (ii) Creation of a property master CAD .dwg file along proposed route.

      (iii) Deliverables to include point file of boundary points in CSV file format, AutoCAD Civil3D .dwg file containing property master and field located boundary corners, and twelve (12) Certified Plats.

   c. Title services to include:

      (i) Title research for various tracts to establish property boundaries, and for the twelve (12) certified plats.

      (ii) PDF files for 30 Year Vesting Title for the twelve (12) private property owners along the proposed route.

(iii) Title research is to be performed before mobilizing the field crews for boundary survey.

B. Appraisal/Acquisition Services

1. Provide landowner contact and easement cost negotiations, including appraisal, for a maximum of twelve (12) properties.

2. Prepare complete appraisal report for the parcel to be acquired utilizing TxDOT Forms No. ROW-A-5 and ROW-A-6 as applicable. These reports shall conform to City policies and procedures along with the Uniform Standards of Professional Appraisal Practices.

3. TRC shall obtain the services of an Appraisal Reviewer to review appraisal report for the parcel to determine consistency of values, supporting documentation related to the conclusion reached, and compliance with City of Seguin policies and procedures and the Uniform Standards of Professional Appraisal Practices and prepare and submit to the City of Seguin the Form "Tabulation of Values," for the appraisal.

4. Acquisition Services

   a. Presentation of initial offer followed by presentation of acceptable payment submission with clear title or confirmation that title will be clear by receipt of warrant or issuance of final offer letter.

   b. Attend closing by deed and the delivery of the completed negotiation file with signed recorded deed and the title policy to the City. In the event of closing by mail, title work must be reviewed prior to closing by mail and again prior to the recording of the instrument

   c. Analyze preliminary title commitment report to determine potential title problems, propose and inform the City of methods to cure title decencies. This includes analysis of access easements.

   d. Secure title commitment updates in accordance with insurance rules and requirements for parcel payment submissions. There should not be any changes at this point, but if there are changes (such as abstractor fees) these costs must be reimbursed to TRC as pass-through costs.

   e. Analyze appraisal and appraisal review reports and confirm the City’s approved value prior to making offer for the parcel.

   f. Prepare and send the letter transmitting the Landowners’ Bill of Rights.

   g. Send to the property owner the initial offer letter, instruments of conveyance, and any other documents required or requested by the City on applicable City forms.

   h. Maintain follow-up contacts and secure the necessary instruments upon acceptance of the offer for the closing.

i. Maintain original signed Receipt of Appraisal.

j. Respond to property owner's inquiries verbally and in writing.

k. Prepare a separate negotiator contact report for the parcel.

l. Maintain parcel file of original documentation related to the purchase of the real property or property interests.

m. Advise property owner on the Administrative Settlement process. Transmit to the City any written counteroffer from property owner including supporting documentation, and provider recommendation, with regard to Administrative Settlements in accordance with the City policy and procedures.

n. Prepare final offer letter and documents of conveyance as necessary.

5. TRC's services and costs do not include payment of land purchase costs, business/residential movement/replacement costs, demolition/construction, asbestos and abatement costs, attorney fees, or services/time related to property condemnation, if applicable.

C. Geotechnical

1. The test borings will be drilled by a local drilling subcontractor under the direction of TRC's geotechnical engineering staff. All field work will be conducted using truck-mounted drilling equipment. The City shall arrange for any necessary access and approvals from property owners required for the drill crew to work on the Project during normal daytime working hours (minimum 8 hours per day) without any interruptions. TRC will obtain approval/permits with the City to perform the drilling operations within the City's ROW, if needed. We assume that all test boring locations are open and accessible to standard truck-mounted drilling equipment.

2. The Project surveyor or TRC's drilling subcontractor will mark-out the test boring locations in the field using existing features (e.g., existing buildings, edge of pavement, intersections, etc.) as a reference or a handheld GPS unit, based on the most current plans provided. The Texas811 One-Call utility locator service will be contacted to verify utility locations within public right-of-way and easements where these utilities may exist in the Project. TRC will work with the City to determine the locations of known existing on-site subsurface utilities before the start of our field work. We will work with the City to identify possible underground utility locations and offset borings as necessary to avoid conflicts. Geophysical utility verification consisting of ground penetrating radar and EM induction to identify potential buried objects at the proposed test boring locations prior to drilling is not included in the current scope.

3. TRC proposes a total of 12 test borings spaced approximately every 1,000 feet along the new water main each drilled to a depth of 15 ft bgs, except two (2) borings on both sides of I-10 will be 25 ft bgs for jack and boring underneath the interstate.

Drilling and sampling will be in accordance with ASTM D 1586. Soil sampling will be conducted every 2.5 ft to the termination depth of the boring or auger refusal (hard rock). Based on our experience, it is assumed that if rock is encountered prior to reaching the target depth of 15 ft, that we will be able to auger through the rock to achieve the target depth. Rock coring will not be performed as it will be assumed that hard rock below auger refusal will not be able to be excavated with conventional hydraulic equipment and will need to be removed with hoe rams. It is anticipated that relatively undisturbed samples (Shelby tubes) will not be required for this Project.

4. Groundwater measurements will be recorded during drilling and/or shortly after completion of each boring. Borings will then be backfilled with the auger cuttings upon boring completion. Any excess soil materials which does not fit back down the holes will be spread out on the ground surface at the boring location. No additional restoration is included in the scope or cost provided herein.

5. The budget assumes that the drilling will be completed in three (3) working days. If additional days are required for the field drilling activities due to an increased number of borings or drilling depths, additional time to access boring locations, etc., TRC will discuss with the City the additional cost that can be realized for drilling and sampling beyond the assumed number of days of field work, if needed.

6. Upon completion of the field work the soil samples will be delivered to TRC's AMRL AASHTO/ASTM accredited laboratory where the field classifications will be verified by a member of TRC's geotechnical engineering staff and representative samples will be selected for laboratory testing to evaluate engineering characters and parameters, including, but not limited to moisture content, grain size distribution, and plastic characteristics (Atterberg Limits). Two (2) representative composite samples of the soil materials (5-10 ft bgs) encountered will be sent to an accredited laboratory for corrosivity testing (including electrical resistivity, pH, chlorides, sulfates).

7. Upon completing the field and laboratory testing, our engineering staff will summarize the work completed and prepare a Geotechnical Engineering Report. The geotechnical engineering report will summarize TRC's understanding of the proposed construction, site conditions, exploration activities, subsurface conditions and impacts on the proposed construction, and address project specific concerns including but not be limited to issues such as:

    a. Earthwork recommendations for site preparation including placement, compaction and testing of fills, if applicable.

    b. Groundwater conditions including perched conditions and control of groundwater during construction, as applicable.

    c. Recommended side slopes and soil parameters for strength and lateral pressures/resistance (both above and below ground water table) considering

active, at rest and passive conditions for use in excavation trench support design by others.

d. Seismic Site Class parameters as determined by the 2018 International Building Code (ASCE 7-16).

e. It is assumed that pavement design recommendations will not be required as pavement disturbed during waterline installation will be replaced in kind.

f. Other construction-related concerns, as warranted based on site subsurface conditions, based on the proposed construction.

8. Copies of typed test boring logs, a test boring location plan, and the laboratory test results will be included as appendices to the report.

D. Permitting

1. Submit applications and/or permits for:

a. Union Pacific Railroad (UPRR) – to include utility crossing permit application preparation and fee payment for construction and surveying, and flagging services for surveying.

b. Texas Commission on Environmental Quality (TCEQ) – summary transmittal letter.

c. TxDOT – utility crossing permits for 123 Bypass and I-10.

E. Construction Documents

1. Prepare construction documents for the proposed project, consisting of:

a. Technical specifications, bidding and contract documents.

b. General sheets, including general construction notes.

c. Water pipeline plan and profile drawing sheets.

d. Site drawings for the Vetter Booster Station and 123 Elevated Storage Tank and connection details as described above.

e. Phased traffic control plan to maintain traffic during construction.

f. Erosion control plan.

g. City of Seguin Standard Construction Details.

h. Miscellaneous details.

2. Submit 60%, 90% and 100% construction documents to City for review/approval, and meeting with City Staff to discuss each.

3. Acquire information from the franchise utilities (gas, telephone, cable, etc.) and determine need for relocation. The City will provide direct correspondence with

the franchise utilities. Design of existing utility relocations shall be provided by others.

4. Attend public outreach meetings to discuss the proposed project (Maximum of two), if required.

5. Provide final set of construction documents for bid.

F. Bidding Support

1. Organize and participate in construction pre-bid meeting.

2. Address contractor questions during the bidding process and submit bid addendums as applicable.

3. Assist the City in bidding process including preparation of advertisement document, opening and tabulation of bids, and award recommendation letter.

4. Attend City Council meeting for construction award.

5. Prepare construction contract documents.

G. Construction Support

1. Organize and conduct the pre-construction meeting.

2. Provide contractor correspondence, submittal review, request for information review, and pay request review.

3. Organize and attend monthly construction meetings (maximum of 18) and provide meeting minutes.

4. Organize and attend final inspection and prepare contractor punch list.

5. Prepare documents for project closeout including certificate of construction completion, which will set the construction warranty period.

6. Prepare record drawings based on information provided by the Contractor (3 sets of hard copies and one electronic copy PDF). TRC will not validate as-built conditions.

H. Construction Inspection

1. TRC will provide periodic construction inspection of the project at two (2) times per month for a maximum of four (4) hours per day for eighteen (18) months after the start date of the project, for a maximum total of thirty-six (36) inspections.

2. Inspection of critical path items as part of the periodic construction inspection including but not limited to:
    a. Utility coordination meetings.

ENVIRONMENTAL SCOPE OF WORK

TRC will perform the following Environmental Scope of Work:

Based on requirements under the Antiquities Code of Texas (ACT) (Section 191.0525) and Section 106 of the National Historic Preservation Act of 1966, as amended, we propose the following Scope of Work (SOW) to meet project requirements if the Texas Historical Commission (THC), after completing its review of the desktop study, requires an archeological survey of the Project area. Note: the desktop study has not yet been submitted to the THC for the 30-day project review period.

If the THC requires an archeological survey of the APE after completing their review of the desktop study, TRC proposes this SOW to fulfill the City's obligations under the ACT:

- Task 1 – Cultural Resources Services: Antiquities Permit Application, Archeological Survey, and Report -

Antiquities Permit Application and Research Design

Results of the background study will be incorporated into the Research Design/Scope of Work to accompany the Antiquities Permit Application. TRC will produce a Research Design, outlining the proposed archeological survey methodology and reporting. Once complete, TRC will send the permit application packet to the City for review and signature. Following City review and comment, TRC will make revisions, and submit the permit application to the THC who will assign a permit number for the project. Fieldwork may not proceed until the THC issues a permit number for the project.

Archeological Survey and Report

TRC will conduct an intensive archeological survey of the Area of Potential Effect (APE) within the Project area. This work includes a 100 percent pedestrian survey and subsurface investigations will be performed on those parts of the APE that do exhibit evidence of severe prior disturbance. Survey methods will consist of excavation of shovel tests and mechanical backhoe trenching of areas within the Project exhibiting alluvium and potential to contain deeply buried cultural deposits. Work will be performed in accordance with the THC's and Council of Texas Archeologists (CTA) Archeological Survey Standards (2020).

Newly discovered prehistoric and historic archeological sites will be documented in compliance with THC/CTA survey standards and policies including requirements for assessing historical sites and cemeteries. Any structures 45 years or older located within or adjacent to the APE will photo-documented and described in the report.

TRC will follow a “no collection” policy where cultural materials are encountered. Diagnostic and non-diagnostic artifacts (e.g., lithic debitage, burned rock, historic glass) will be described, sketched, and/or photo-documented in the field and replaced in the same location in which the artifacts were found.

The Archeological Survey Report will provide a discussion of the methods and results of the background research and the field investigation. This discussion will include a list of sites identified, the ownership of the land on which the sites are located, their eligibility for the National Register or for formal designation as State Antiquities Landmarks, and the appropriate criteria under which the sites were evaluated. Site forms will be submitted to the Texas Archeological Research Laboratory (TARL) to obtain trinomials. The report will also include recommendations for further work or no further work with appropriate justifications based on the requirements of 13 TAC 26.5(35), 13 TAC 26.20(1), and 13 TAC 26.20(2) and THC/CTA Guidelines. Costs also include curation costs to permanently house records with the Center of Archeological Studies in San Marcos, Texas under stipulation of the ACT.

ASSUMPTIONS

As the basis for the preparation for this proposal and the associated cost of service, the following assumptions were made which, if found to be incorrect may result in request(s) from TRC for additional compensation:

1. Per discussions with City Staff, the purpose of the transmission pipeline is to connect directly to and fill the Hwy. 123 elevated storage tank, and for it to not be directly connected to any water services along its route. The existing transmission pipeline does connect to water services and some of those service connections experience pressure line surges when the pumps at the Vetter Booster Station are activated. This proposed pipeline should eliminate these pressure surges.

2. Where necessary, the City will be responsible for arranging property access (and acquiring executed right-of-entries) prior to commencement of the field survey and/or environmental investigations for properties not located within City right-of-way. TRC will not perform any field investigation on properties where access has not been granted.

3. Subsurface Utility Engineering provided will not relieve the contractor from the duty to comply with applicable utility damage prevention laws and regulations, including, but not limited to, giving notification to utility owners or “One-Call Notification Centers” before excavation.

4. Should the schedule be changed or put on “hold” by the City, all costs incurred by TRC up to notification of change of schedule or “hold” status will be billed to the City. Additional fees that TRC may incur as a result of the change of schedule or “hold” status will be billed to the City once the Project has resumed in addition to the cost of services included in this proposal.

5. The entire project will consist of a single bid/construction project.

6. TRC's effort and costs for construction services are based on an eighteen (18) month construction project duration, starting from the date of the Contractor's notice to proceed. If the construction period extends beyond this time period, TRC may request additional compensation.

7. Design, supply and installation of the pipeline inside the 123 elevated tank will be provided by the tank company (Landmark).

8. Assumptions for the environmental scope of work include:
    a. The City will provide a backhoe and operator for backhoe trenching aspect of the fieldwork, if required. Estimate no more than two days of backhoe trenching.
    b. Assume no more than one archeological site will be identified during the investigation. If additional sites are discovered, a change order will be required to cover the recording of site with TARL.
    c. Assume no human remains will be encountered during investigations. If human remains are encountered, TRC will stop work and immediately notify Client. Any associated services for managing the discovery of human remains (e.g., agency notification, tasks related to adherence to the Texas Health and Safety Code [Title 8, Chapters 711–714] guidelines) will be submitted in a separate SOW and cost proposal for Client approval.
    d. This proposal covers a prescribed level of effort through the intensive survey and THC consultation. If after consultation, the THC requires additional work in the form of additional survey, archeological monitoring, archeological testing, and/or data recovery, TRC will prepare a separate SOW and cost estimate for additional services and submit to the City.

9. Assumptions for the geotechnical scope of work include:
    a. The geotechnical services do not include testing or other type of investigation regarding the possible presence of hazardous or toxic substances either on site or in imported materials.
    b. Drilling will not occur within TxDOT right-of-way.
    c. Construction administration, observation and testing services, construction engineering support, or review of design or construction drawings or specifications are not included.
    d. Test boring locations will be accessible to truck-mounted drilling equipment without the need for clearing or assistance from a dozer, and field work will consist of up to three (3) days of drilling up to a maximum of 12 soil borings.
    e. Closure of a lane of traffic or maintenance of traffic will not be required. Due to the anticipated low volume of traffic, if a boring needs to be located near a

road it is assumed that cones can be placed to maintain traffic and that a flagger, signs, or lane closure is required.

f. The drilling and sampling equipment will not need to be decontaminated.

g. Soil samples collected during this exploration will be stored at our testing laboratory for 30 days from the date of this report. At that time, they will be destroyed.

10. Assumptions for land acquisition scope of work include:

a. Mailouts assume 1 Certified/1 First Class per tract.

b. Utility crossing and non-environmental permitting, including driveway permits, are not included.

c. Costs associated with anticipated Closing Costs and Title Policies are estimated costs. The City of Seguin will be subject to any actual costs over the estimated amount at cost.

d. Costs associated with an anticipated Appraisal Expense for each privately owned parcel are estimated costs. The City of Seguin will be subject to any actual costs over the estimated amount at cost.

e. This proposal does not include appraiser costs associated with review and preparation for commissioner hearing(s) or trial(s).

EXCLUSIONS

The following items are specifically excluded from the scope of work:

1. Any design services not listed above, including but not limited to design of landscape or irrigation, street reconstruction, sidewalks or accessibility, electrical or lighting.

2. Expansion of the Vetter Booster Station or additional pump modifications (other than listed above).

3. Design of modifications to the 123 elevated storage tank or tank site, other than listed above.

4. Full-time construction inspection.

5. Environmental or cultural services (other than listed above).

6. Post-construction topographical survey or GIS system updates.

7. Design of improvements or relocations for sanitary sewer lines, electrical lines, gas lines, telephone lines or other franchise utilities.

8. Construction staking or field staking for other purposes.

9. Attendance at or preparation for condemnation hearings, easements or plat documents, landowner contact or easement negotiations, other than mentioned above.

10. Preparation of permits, applications, etc. (not mentioned above or in the cost table).

11. Costs for permitting or application fees or review fees by regulatory authorities, other than mentioned above or included in the cost table.

12. TDLR registration, fees, inspections, or plan review/approval.

13. US Army Corps of Engineers (USACE) permit preparation or notification, if applicable.

COMPENSATION FOR SERVICES

TRC will provide the professional engineering services as outlined herein and within the Master Services Agreement executed between the City and TRC (dated December 16, 2003), for a total lump sum fee as follows:

Environmental/Cultural Services:	$25,783.00
Topographical Surveying:	$19,742.00
Twelve (12) ROW Acquisition Documents (Plats):	$20,980.00
Title Research for Twelve (12) Plats:	$9,051.00
Land Acquisition Services for Twelve (12) Parcels:	$186,485.00
Geotechnical Services (12 bores):	$21,889.00
UP Railroad Application Preparation and Fee:	$17,032.00
Engineering Design:	$697,642.00
Construction Administration:	$122,358.00
Total:	**$1,120,962.00**

This fee includes labor and material costs associated with the Scope of Work identified above.

TRC's fee above is based on a continuous flow of work. Any delays or restrictions, caused by customer or customer's sub consultants, which result in idle-time or inefficiencies, could be cause for additional compensation.

The payment schedule will be via monthly progress billing.

Changes in scope, including additional scenarios or modification to the scenarios identified above will be evaluated for additional services and/or materials cost through a formal change order process, which results in approval of the additional cost prior to executing the additional work.

Fees for services quoted in this Letter of Agreement are valid for a period of time not to exceed 60 days from the date of this letter.

We appreciate the opportunity to assist with this project and are available to proceed immediately with your written approval. Please review this proposal and, upon acceptance, sign in the space provided below, returning a copy for our files.

Sincerely,

H. Craig Bell, P.E. Austin Engineering Director – DMS	City of Seguin
May 19, 2022 Date	Date