



June 9, 2025

Mr. Jeff Edmonds, P.E.
Director of Engineering Services
City of Corpus Christi
PO BOX 9277
Corpus Christi, Texas 78469-9277

Re: Proposal for Nueces River Pump Station & System Upgrades (Project 25014)

Dear Mr. Edmonds,

At the request of the city, LAN is providing this proposal is for design, bid, and construction phase services related to site piping upgrades at the Nueces River Raw Water Pump Station to improve operational flexibility and completion of the 54-inch diameter raw water transmission main between the pump station and the O.N. Stevens Water Treatment Plant; which will allow for raw water to be transmitted to plant from the Nueces River or the Mary Rhodes Pipeline though varying combinations of the existing and proposed 54-inch and 72-inch pipelines.

Attachment A provides the scope of services related to this work including assumptions and exclusions. Attachment B is a summary of fees including our levels of effort on each task in Attachment C. Attachment D is a proposed timeline to complete the design phase of the project.

We propose to complete these services for a total lump sum fee of **\$1,540,955.00**. Upon Notice to Proceed, we can be substantially complete with design in approximately 13 months. Please feel free to contact me at 361-792-7225 or by email at SMHarris@lan-inc.com, if you have any additional questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "SMH", with a long horizontal flourish extending to the right.

Scott M. Harris, PE
Senior Associate, Regional Manager

Attachments: A – Scope of Services
B – Summary of Fees
C - Level of Effort
D – Proposed Timeline
E – Labor Rates

Cc: William C. Causey, Jr. P.E. - Engineer V

ATTACHMENT A
NUECES RIVER RAW WATER PUMP STATION
PIPING & SYSTEMS UPGRADES (PROJECT# 25014)
SCOPE OF SERVICES

BACKGROUND

The O.N. Stevens Water Treatment Plant (ONSWTP) is executing a strategic upgrade plan to improve efficiency and reliable treatment capacities. The Nueces River Pump Station supplies water from the Nueces River to ONSWTP through 54-inch water lines. The Mary Rhodes Pipeline (MRP) is aligned in the same pipeline corridor with a 72-inch Pre-Cast Cylinder Pipeline. The MRP passes through the Pump Station and is interconnected with the 54" water lines inside the Pump Station. This project will modify the site piping of the pump station to improve operational flexibility which will allow for the water to be transmitted to ONSWTP from the Nueces River or the MRP through varying combinations of the 54-inch and 72-inch pipelines.

The project will also complete the pipeline alignment of the new 54-inch diameter line to the same site and header piping. Phase 1 of the 54-inch pipeline is currently under construction from the ONSWTP to Calallen Drive. This project will continue the 54-inch pipeline from Calallen Drive to the pump station.

SCOPE OF WORK

Pump Station Site Piping & Valve Modifications

To improve operational flexibility, site piping and valves will be modified at the pump station between the two pump station buildings including the MRP connections. LAN will meet with Corpus Christi Water (CCW) staff to discuss the operational goals for the pump station, long-term expansion requirements, and develop plans for the reconfiguration of the site piping. Hydraulic and transient modeling (see Task 11) will be necessary to evaluate the pressures in the proposed system to reduce impacts caused by opening and closing valves, pump power failures and sudden changes in velocity. Due to existing utility conflicts at the pump station, including overhead and underground electrical and communications duct banks, existing MRP and 54" water lines, tunnelling will be evaluated. A bypass system will also need to be designed if the existing piping must be taken offline to make these connections.

Transmission Main Design

There are three existing raw water transmission mains (2-54" and 1-72") providing raw water from the Nueces River and Mary Rhodes Pipeline to the treatment plant. CCW proposes to add a fourth (54") transmission main to increase capacity to meet future demands. This project includes Phase 2 of the proposed 54" water transmission main. Phase 1 of this project is currently under construction and includes installation of pipeline from the ONSWTP to Calallen Drive (approximately 2,436 feet). This project completes the transmission main from Calallen Drive to the Pump Station (approximately 2,410 feet).



Hydraulic and transient modeling of the proposed transmission main system (all four mains working together) will be necessary to evaluate the pressures in the proposed main to reduce impacts caused by opening and closing valves, pump power failures and sudden changes in velocity.

Private property is being acquired by the City of Corpus Christi (City) along the Smith Drive ROW since the slopes along the road have potential to fail due to landowner activities. Acquisition will accommodate the realignment of the proposed pipeline away from Smith Drive and the three existing large diameter pipelines. The proposed pipeline may be analyzed as part of the preliminary engineering efforts and both tunneling and open cut options will be evaluated.

Grading & Drainage Improvements

As previously mentioned, private property will be acquired by the City to facilitate the realignment of the proposed pipeline away from Smith Drive. Along Smith Drive, soil erosion, steep grades and proximity to existing utilities prevent the proposed pipeline from maintaining a parallel alignment with the other existing pipelines. Upon demolition of the private properties, these areas (approximately 3 acres) will be filled in (approximately 45,000 CY) and regraded to accommodate the proposed pipeline. LAN will develop grading, and drainage plans and evaluate the slope stability in these areas. Additionally, there is an existing drainage easement and stormwater infrastructure crossing these properties which must be evaluated and modified for the proposed water transmission pipeline.

Temporary Construction Easements, Utility Relocations & Restorations

The proposed alignment and work along Smith Drive and inside the pump station will require coordination with the city, American Electric Power (AEP) and AT&T to avoid conflicts with these utilities. Restoration will include, but not be limited to, Pump Station security fence reconfiguration and HMAC pavement restoration of Smith Rd and the access road inside the pump station. To accomplish this work, LAN must coordinate with these third-party utilities to obtain Letters of No Objection (LONO's) and an easement agreement for the following:

- Relocation of City gas lines along Smith Rd
- Relocation of City force main and sanitary sewer gravity line along Smith Rd
- Temporary construction easement from AEP and residents along Smith Rd
- Permanent crossing of proposed 54" WL across the AEP easement along Smith Rd
- Permanent site grading changes for surface drainage across the AEP easement along Smith Rd

We also expect that AT&T will have to relocate their cables/fiber within the Smith RD right-of-way for this project.



PROFESSIONAL SERVICES

Basic Services include:

- Task 1 – Project Management & Coordination
- Task 2 – 30% Design Services
- Task 3 – 60% Design Services
- Task 4 – 90% Design Services
- Task 5 – Final Design / Issued for Bid Documents
- Task 6 - Bid Phase Services
- Task 7 - Construction Phase Services

Additional Services include:

- Task 8 – Topographic Surveying
- Task 9 – Subsurface Engineering (QI-A, B, C&D)
- Task 10 – Geotechnical Investigation & Engineering
- Task 11 – Hydraulic Modeling & Transient Analysis
- Task 12 – Permitting Allowance

A. Task 1 – Project Management & Coordination

1. Project Kick-off Meeting - Participate in one (1) virtual project kick-off meeting and prepare meeting agenda and distribute meeting minutes to attendees.
2. Monthly Progress Meetings & Reports (scope assumes 12 months from NTP).
3. Site Visits – complete three (3) site visits to the pump station site to gather/ confirm data collected at coordinate w CCW staff including coordination with Phase 1 contractor who is exposing the existing connection, 54" & 72" waterlines under their contract (assume three days or 96 hours for four people (PM, Senior Technical Engineer, Engineer IV, and Process Engineer).
4. Review of Existing and Record Data – review existing record data, surveys, pump system data / logs, SUE reports, City GIS data, and existing plans and specifications.
5. Complete Design Concept Review & Decision Matrix – review Phase 1 of the transmission main project, project criteria & preliminary plans and develop a risk register / decision matrix.
6. Coordination with CCW staff – complete coordination (virtually or telephone) w/ CCW staff to confirm design parameters & requirements, as the design proceeds, including phasing and sequencing to maintain Pump Station operations, (assume up to 80 hours).
7. Coordination with Geotechnical Engineer - LAN will coordinate with a geotechnical engineer to complete a geotechnical investigation of the proposed pipeline route and pump station site. LAN will receive the engineers report, interpret results, and incorporate the information from the report into the design and project manual.
8. Coordination with Surveyor and Subsurface Utility Engineer – Under this task, LAN will coordinate with the SUE firm. LAN will receive the SUE report, interpret results, and incorporate the information from the report into the design and project manual.
9. Coordination with Third-Party Utilities – LAN will coordinate with and obtain Letter of No Objection (LONO) with third-party utilities as necessary and coordinate temporary construction



easements, new utility easement agreements, crossing requirements, and special instructions to be included in the construction documents.

10. Coordination with City Utilities – LAN will coordinate with Public Works and CCW to relocate existing gas lines, sanitary sewer force mains and gravity lines along the Smith Rd ROW.
11. Coordination with City Real Estate – LAN will coordinate with the Engineering Services Real Estate Office to provide exhibits and information necessary to obtain temporary construction easements from residents along Smith Rd.

B. Task 2 – 30% Design Services

1. Analyze site piping configurations at pump station and provide conceptual sketches and details to optimize pipe and valve layout / configuration to improve efficiency & operation.
2. Develop a construction sequencing and phasing plan for the site piping and transmission main improvements, including preliminary traffic control plan.
3. Prepare 30% construction documents (plans, specifications, estimates) in City standard format. LAN will prepare site plans including background information, above ground structures, existing utilities based on city-provided as-built drawings, survey, and SUE, natural ground elevations, pump station boundary, proposed site piping and transmission main, grading and drainage improvements. A preliminary list of plans sheets includes:
 - a. Cover Sheet & Vicinity Map
 - b. Index Sheet
 - c. Survey Control Map
 - d. Site Piping / Valve Modifications at Pump Station
 - e. Transmission Main Plans / Layouts
 - f. Grading Plan
 - g. Stormwater System Improvements
 - h. City Gas and Sanitary Sewer Relocations
 - i. Preliminary Traffic Control/Detour Plan
4. Develop Draft Engineering Letter Report – LAN will prepare a draft engineering letter report (ELR) that documents the scope of work, existing conditions, design criteria, proposed improvements and alternatives, risk register, and opinions of probable construction costs.
5. Review and Deliver 30% Documents
 - a. Per LAN's Quality Assurance and Control Plan, complete and internal QC review of the 30% documents.
 - b. Furnish one (1) Draft Engineering Letter Report (ELR) and one (1) set of the interim plans (electronic, using City Standards as applicable) to the City staff for review and comments.
 - c. Opinion of Probable Construction Costs
 - d. City-required checklist including "Plan Executive Summary, project checklist & drawing checklist" which will identify and summarize the project by distinguishing key elements.
6. Client Review Meeting - Attend one (1) 30% submittal meeting with City Staff to assist staff in review of 30% submittal. It is assumed that the City of Corpus Christi will prepare the meeting agenda and minutes.
7. Deliver Final Engineering Letter Report – LAN will address City comments and deliver one final (electronic/PDF, signed & sealed) Engineering Letter Report to the client for record.



C. Task 3 – 60% Design Services

1. Detailed Design Services – LAN will complete the following detailed design services that support the development of the 60% construction plans and specifications:
 - a. Water Transmission Main Design
 - i. Analyze and complete connection details between Phase 1 and Phase 2 transmission mains and at Pump Station connections.
 - ii. Finalize alignment and profile of proposed transmission main.
 - iii. Develop pipeline appurtenances details.
 - iv. Develop initial pipe material design parameters.
 - v. Determine and recommend type of valves.
 - vi. Analyze and prepare details for possible above ground segments of proposed transmission main.
 - vii. Prepare preliminary load mitigation specifications and details to protect the existing 54" and 72" transmission mains during construction.
 - viii. Design air release valves based on modeling and confirmed size, type and locations.
 - ix. Design tunneled segments including bore pits.
 - b. Develop the system integration and site piping plan and valve design between Pump Building #1 and #2.
 - c. Complete Slope Stability / Site Grading Design
 - i. Determine backfill requirements in newly acquired property and proposed grading
 - ii. Import fill material from city-approved borrow site. Provide drawings showing borrow site stockpile to use and showing the existing and proposed contour lines for the stockpile modification.
 - iii. Prepare details and specifications for armoring proposed new 30 FT deep slope at edge of newly acquired property.
 - d. Complete Drainage Analysis and Stormwater System Design
 - i. Modify existing storm drainage system crossing newly acquired property.
 - ii. Proposed storm sewer outfall and armoring of new shifted slope at backfilled edge of the newly acquired property.
 - iii. Prepare a grading plan to modify surface drainage of the backfilled newly acquired property.
 - e. Structural Restoration/ Modifications of existing concrete slope protection, concrete steps, pavement and fence/gate at 54" WL connection at pump building.
 - f. Determine Temporary Construction Easements for transmission main and coordinate with surveyor for metes / bounds.
 - g. Determine Fiber Optic / Conduit alignment, pull box locations, and connection points.
 - h. Develop Utility Conflict Matrix and relocation plans based on survey and subsurface utility engineering results.
2. Incorporate 30% review comments from City and develop plans to the 60% level, including:
 - a. GENERAL
 - i. Cover Sheet & Vicinity Map
 - ii. Index Sheet



- iii. General Construction Notes
 - iv. SWPPP, Details & Notes
 - v. Construction Sequencing and Phasing
 - vi. Survey Control Map
 - vii. Demolition Plans
 - viii. Utility Conflict Matrix & Relocation Plans
 - b. PUMP STATION
 - i. Pump Station Site Piping Modifications
 - ii. Temporary Bypass Plan & Details
 - iii. Connection Details & Support Structures
 - iv. Structural Details
 - v. Pavement Repair Plan
 - c. TRANSMISSION MAIN
 - i. Plans and Profiles
 - ii. Connection Details & Support Structures
 - iii. Valve Details
 - iv. Special Thrust Restraint Details
 - v. Temporary Bypass Plan & Details
 - vi. Pavement Repair Plan
 - d. GRADING & DRAINAGE
 - i. Overall Site Plan & Layout
 - ii. Grading Plan
 - iii. Stormwater Plans & Profiles
 - iv. Outfall Details
 - e. CITY STANDARD DETAILS
 - f. AEP Utility Requirements
- 3. Review and Deliver 60% Deliverables
 - a. Per LAN's Quality Assurance and Control Plan, complete and internal QC review of the 60% documents.
 - b. Furnish one (1) set of the interim plans (electronic and hard copies using City Standards as applicable) to the City staff for review and approval purposes.
 - c. Provide an updated AACE Class 4 Opinion of Probable Construction Costs
 - d. City-required checklist including "Plan Executive Summary, project checklist & drawing checklist" which will identify and summarize the project by distinguishing key elements.
- 4. Client Review Meeting / Design Construction Workshop - Attend one (1) 60% submittal meeting & design workshop with City Staff to review the 60% submittal, construction sequencing, and proposed work plan / schedule for construction. It is assumed that no substantial change in plans will occur after this meeting.

D. Task 4 – 90% Design Services

- 1. Incorporate 60% review comments from City and develop plans, specifications, and estimates to the 90% level.
- 2. Contract Documents - the project team will prepare a Project Manual consisting of City of Corpus Christi Standard Contract Documents (DIV 00, DIV 01) that defines the procurement and



contracting requirements, general requirements, and City standards for materials, workmanship, and testing. The anticipated City standard documents that LAN will have to provide input into include:

- a. Table of Contents
 - b. Agreement
 - c. Supplementary Conditions
 - d. Bid Form
 - e. Summary of Work
 - f. Alternates and Allowances
 - g. Measurement and Basis of Payment
 - h. Submittal Register
 - i. Special Procedures
3. Standard Specifications (Part S) - these documents will be provided by the city, and it is anticipated that there will be minimal editing required and that there will be no special technical specifications needed for the project. Should such editing or special or an excessive number of technical specifications be required, such work will warrant an additional services request from the Engineer.
 4. Technical Specifications (Part T) – LAN will prepare technical specifications including the testing, start-up, and commissioning plan for the project.
 5. Provide updated AACE Class 5 Opinion of Probable Construction Costs
 6. City-required checklist including “Plan Executive Summary, project checklist & drawing checklist” which will identify and summarize the project by distinguishing key elements.
 7. Client Review Meeting - Attend one (1) 90% submittal meeting with City Staff to assist staff in review of submittal. It is assumed that the City of Corpus Christi will prepare the meeting agenda and minutes.

E. Task 5 – Final Design / Issued for Bid

1. Prepare 100% Final (unsealed) construction documents (plans, specifications, estimates) in City standard format, including:
 - a. Incorporate 90% review comments from City and develop plans to the 100% level.
 - b. Contract Documents – prepare City contract documents to 100% level.
 - c. City Standard Specifications & Details - incorporate City standard specifications and details into 100% deliverable.
 - d. 100% Deliverables
 - i. Furnish one (1) set of the final plans (electronic and hard copies using City Standards as applicable) to the City staff for review and approval purposes.
 - ii. Provide final Opinion of Probable Construction Costs
 - iii. City-required checklist including “Plan Executive Summary, project checklist & drawing checklist” which will identify and summarize the project by distinguishing key elements.
 - iv. Client Review Meeting - Attend one (1) 100% submittal meeting with City Staff to assist staff in review of 100% submittal. It is assumed that the City of Corpus Christi will prepare the meeting agenda and minutes.



2. Prepare Issued for Bid Documents - LAN will incorporate all review comments and prepare one signed & sealed set of Issued for Bid (IFB) construction documents per City of Corpus Christi Standards. The set will include one (1) hard copy, one (1) PDF set of deliverables on a thumb drive, and a Microsoft One-Drive link to all documents sent to the clients designated Project Manager.

F. Task 6 - Bid Phase Service

1. Participate in one (1) pre-bid conference to discuss scope of work and to answer scope questions and complete one (1) on-site visit with bidders. It is assumed that the City of Corpus Christi will prepare the meeting agenda and minutes.
2. Review technical questions concerning the bid documents and prepare revisions to the plans, specifications and bid forms that may be necessary. For the purposes of this proposal, LAN assumes not more than twenty (20) major questions to be answered via CIVCAST. Major questions are those that require a minimum of 4 hours to process and answer.
3. Prepare one (1) addendum that includes client approved revisions to bid documents.
4. Review bid results, complete bid form tabulation, and complete letter of recommendation for award to a qualified contractor.
5. Provide two (2) hard copy set and one (1) electronic set of conformed drawings and conformed Contract Documents (PDF and original [CAD/Word/etc.]) to the City.

G. Task 7 – Construction Phase Service

LAN assumes a 16-month construction duration beginning at the contractors' Notice to Proceed.

1. LAN will participate in one (1) pre-construction conference with the selected contractor to review the project, specifications, and requirements during construction. It is assumed that the City of Corpus Christi will prepare the meeting agenda and minutes.
2. Respond to contractor Requests for Information (RFI's) - LAN assumes a total of twenty (20) formal requests for information (RFI's). LAN considers a "formal" RFI as one that takes more than one working day to provide an answer and is communicated via e-Builder or through the City of Corpus Christi Construction Engineering Department.
3. Change Order Support – LAN will provide field clarifications and details for city-approved changes during construction.
4. Review and approve contractor submittals as required in the contract bid documents. LAN assumes up to a total of twenty (20) contractor submittals as part of this task. Resubmittals because of rejection are included in this total.
5. Perform routine construction observations of the project, assuming one (2) hour bi-weekly for a duration of sixty-four (64) weeks. This will also include six site visits by the Project Manager for two hours each.
6. Attend monthly progress meetings during the project assuming one (1) hour for a duration of 16 months.
7. Start-up, Testing, and Commissioning – LAN will provide field support during start-up, testing, and commissioning of transmission main system.



8. Substantial Completion - complete one (1) substantial completion inspection with the contractor and client and develop a punch list of items for the contractor to address prior to final completion.
9. Final Completion - complete one (1) final inspection with the contractor and client and document final completion in a memo to the client.
10. Record Drawings - prepare one (1) set (hardcopy and PDF) of record drawings for the client using the contractor's mark-ups/redlines during construction. No additional survey or data collection will be performed as part of this task.

Tasks 8-12 below define the scope of Additional Services that may only be included as part of this contract if authorized by the Director of Engineering Services. A/E may not begin work on any services under this section without specific written authorization by the Director of Engineering Services. Fees for Additional Services are an allowance for potential services to be provided and will be negotiated by the Director of Engineering Services as required and paid for on a **Time and Materials** basis. The A/E shall, with written authorization by the Director of Engineering Services, perform the following:

H. Task 8 – Topographic Surveying

1. Data will be collected on the following:
 - Topographic transects in each area at 25' to 50' spacing
 - Fences & gates, including type
 - Existing roads – crown and edge of pavement (including identifying type, i.e., asphalt, concrete, gravel, ditches)
 - Existing ditches (not parallel to roads) & channels at 50' intervals, including type (ex., concrete lined, grass, rock rip rap, etc.), show limits of the different types of ditches
 - Driveways along all roads – center lines, widths, shapes
 - Drainage features & culverts – ex., culvert inverts each side of driveway, size/type of culverts, outfalls, all inlets (rims & inverts), etc.
 - Manholes and cleanouts – type (i.e., storm/sanitary), size, MH rims & inverts,
 - inverts/dia./location of pipes connecting to MHs, MH type (ex., concrete, fiberglass, etc.)
 - Valves and meter boxes – type (ex., gas, water, etc.)
 - Vaults and pull boxes – type (communication, electrical), owner, size, concrete/fiberglass, rims & inverts, etc.
 - Above ground structures – ex., buildings, homes, and sheds
 - Other surface features – Example, berms, sidewalks, bollards, signage, control boxes, guardrails, utility poles, above ground pipelines and associated equipment, etc.
 - Locations of AEP high voltage pole foundations
 - Locations and elevations of high voltage lines at the lowest sag points and at the poles
 - Conduct and Coordinate One-Call Service for the Area
 - Survey all One-Call Markers and Document Responses
2. R.O.W. Boundary and AEP Easement Survey
 - The boundary of existing street Right of Ways within the project area will be determined.
 - The AEP easements within the project area will be researched and surveyed.



I. Task 9 – Subsurface Engineering (QI-A, B, C&D)

Quality Service Level D (QL-D) Research and Collection of Existing Utility Records - Initiate 811 ticket to ascertain contact information for identified facility owners. Research to ascertain information on existing utilities within the project limits and request applicable utility owner records for assistance in identifying utility owners that may have facilities on, within, or potentially affected by the project.

Survey team will attempt to contact utility providers identified through collected utility easement information, One-Call systems, and via vehicle reconnaissance and inventory of utility marker posts along the scoped area and adjacent roadways. We will attempt to ascertain the ownership, type, size, encasement, and composition of the existing utilities through coordination with owners/representatives.

Quality Service Level C (QL-C) – Surveying and Plotting Visible Above-Ground Utility Features. Field surveying to obtain accurate horizontal position of visible utility surface features associated with suspected underground utility systems located within the project limits.

- Identify surface features on the plan and ground surface that are surface appurtenances of existing subsurface utilities.
- Survey features and determine accuracy and completeness for applicability with the existing project and by using professional judgment in correlating this information to quality level B information.

Quality Level B (QL-B) Designating Service (Horizontal Location of Utilities) - Designating is to indicate, by marking with paint, the presence and approximate horizontal location of subsurface utilities using geophysical prospecting techniques including electromagnetic, sonic, and acoustic techniques. The survey team will provide the following designating services to aid the Client:

- Provide all equipment, personnel and supplies required for performing the designated services. The survey team shall determine which equipment, personnel and supplies are required to perform these services.
- Designate the existing underground utility facilities within the identified project area as shown in the Exhibits.
- Conduct appropriate investigation of site conditions.
- Mark the utilities on the ground with spray paint to be surveyed by Colliers.
- Create field sketch drawings of the designated utilities.
- Perform the survey of the QL-C utility surface features and QL-B designating field marks.

Quality Level A (QL-A) Designating Service (Utility Exposure and Identification of Precision Horizontal and Vertical Position) – As needed for the project:

- Locating (Test Hole) Services. Locating services is to locate the accurate horizontal and vertical position of subsurface utilities by excavating a test hole using vacuum excavation techniques and equipment that is non-destructive to utilities.
- Locating services will be performed at the specific location identified by the client on requested utilities.



- Excavate test holes to expose the utility to be measured in such a manner that ensures the safety of the excavation and the integrity of the utility to be measured. In performing such excavations, the team shall comply with applicable utility damage prevention laws. Excavations will be performed using specially developed vacuum excavation equipment that is non-destructive to existing facilities. If contaminated soil is discovered during the excavation process, the team will so notify the Client.
- Locate and identify the precise horizontal and vertical position of existing facilities. Positive identification includes the determination or confirmation of facility type, size, depth, and material composition.
- Backfill around the exposed facility using the excavated materials compacted in six-inch lifts.
- In grass and landscape areas, restoration shall be as reasonably possible to the condition that existed prior to excavation.
- In pavement areas, restoration shall be with asphaltic cold mix or other pre-approved methods as required. It is anticipated there will be vacuum excavation in paved areas required for Test Holes on this project.
- In areas inaccessible by excavation trucks or other equipment, electronic depths may be provided on designated utilities in lieu of test holes.

J. Task 10 – Geotechnical Investigation & Engineering

The requested scope of services can be categorized into three major areas: field program, laboratory testing and engineering analysis/report preparation. The purpose of the geotechnical services will be to provide the geotechnical information needed to assist LAN in the design and construction of slope stabilization/restoration.

1. Field Program - The field program will include seven (7) soil boring locations. It is planned that the borings will be drilled with truck mounted drilling equipment. A summary of the requested test borings is presented in the table below:

Test Boring Location	Test Boring No.	Proposed Boring Depths (ft.) ¹
Pump House Area ²	PH2, B-1	60
Pump House Area ²	PH2, B-2	60
Pump House Area ³	PH2, B-3	60
Smith Road at Top of Slope ³	PH2, B-4	75
Bottom of Slope ²	PH2, B-5	50
Bottom of Slope ²	PH2, B-6	50
Bottom of Slope ³	PH2, B-7	50
Note: (1) Depth of borings referenced to existing grade at the boring locations. (2) Requested boring locations (3) Proposed boring locations		

2. Laboratory Testing - Selected samples from the test borings will be used for laboratory testing. Our laboratory testing program will include properties such as moisture content, dry unit weight, unconsolidated-undrained triaxial compressive strength, consolidated-undrained triaxial



compressive strength with pore water pressure measurements, Atterberg Limits, and grain size distribution including percent passing No. 200 sieve.

3. Engineering Report Preparation - Engineering analysis will be conducted utilizing the information collected during the field program and laboratory testing services. Analyses will include evaluation of the existing slope stability and the effects of slope stabilization/restoration options. The report will present the results and findings of our geotechnical services in a written report. Electronic and hard copies of our report will be issued to the Client as requested. The report will include the following:

- a. Summary of field and laboratory tasks
- b. Discussion and conclusions of findings including:
 - i. Project site conditions.
 - ii. Subsurface soil and groundwater conditions
 - iii. Boring logs presenting tabulated field and laboratory test results
- c. Geotechnical engineering design recommendations for intermediate and/or deep foundation systems consisting of either drilled footings or drilled piles. Recommendations will include bearing capacities, lateral pier/pile analysis design parameters, pier/pile group considerations and settlement estimates.
- d. Evaluating stability of the new backfill slope and providing recommendations for slope stabilization, restoration, and/or erosion control. We will provide geotechnical design parameters for a cast-in-place concrete gravity wall or steel sheet pile wall system if this option is selected for slope stabilization. We will provide results of our evaluation of stability of the stabilized/restored slope
- e. Geotechnical recommendations including subsurface soil and groundwater conditions at the tunnel below-grade access pit locations. Design soil parameters for the design of access pit protection systems will be included
- f. Recommendations for appropriate types of tunneling methods (i.e., hand tunneling, micro tunneling, earth pressure balance TBM's, jack bores) will be provided
- g. The types of soil stabilization methods (i.e., chemical injections in front face of the tunnel), as needed, will be provided
- h. Geotechnical recommendations for design depth of the waterline based on the subsurface soil/groundwater conditions will be provided. Adjustment of waterline depth(s) will be provided if soil borings indicate presence of unstable soils or groundwater at the planned depth(s)
- i. Trench safety parameters based on OSHA requirements will be provided for the soil profiles developed from the soil borings
- j. Recommendations for asphalt pavement repair and/or reconstruction
- k. Geotechnical construction recommendations including site and subgrade preparation, excavation considerations, fill and backfill placement, compaction requirements, and overall quality control monitoring, inspection and testing services



K. Task 11 – Hydraulic Modeling & Transient Analysis

Hydraulic modeling will be performed to evaluate the hydraulics of the proposed connection at the pumps station and impact of the new transmission line on the overall system. Both near- and long-term future demands will be simulated. In addition, select combinations of inter-connections and transmission mains in-service will be evaluated.

Transient analysis will be performed to understand the potential for high and low pressures associated with changes in flow and velocity. High and low pressures outside the normal operating range may be caused by power and pump failure or normal operations including pump start/stop and valve opening/closing.

Transient analysis will simulate the performance of air valves and help determine or confirm their types, sizes and locations to provide adequate air valve capacity to protect the transmission line.

Transient analysis will allow maximum pressures to be determined under various operational scenarios. As part of this, control elements (for example control valves, check valves, VFDs, etc.) must be known so that start up, emergency shutdown and normal operation conditions can be modeled. In addition, the transient analysis will provide information for reaction forces produced by the transient pressures to allow proper restraint systems to be designed for the pipes and pumps.

L. Task 12 – Permitting Allowance

If required, LAN will provide coordination with permitting authorities (i.e. TCEQ, AEP, City of Corpus Christi Development Services) on a time & materials basis. This may include agency notifications, submittals of plans for review, approvals and final completion certification.

M. Assumptions / Exclusions

1. Additional meetings with the City of Corpus Christi or CCW, beyond those stated above, will be performed under a separate contract or amendment.
2. Bid Phase assumes traditional design, bid, build process.
3. RFI's sent to LAN outside the City's chain of command or agreed-to procedures will be answered on a case-by-case basis and are not bound to the timelines outlined in the General Conditions.
4. These services do not include a Resident Project Representative (RPR) or full-time construction inspector on the project.
5. The city will provide Quality Level A, Subsurface Utility Engineering (SUE) for all the critical locates indicated on the attached Exhibit D (dated 2/23/24) performed by the Phase 1 Contractor. These critical locates require special shoring and temporary protective measures to protect the existing 54" and 72' waterlines and other existing utilities. These critical locations will be performed by the City's contractor on Project No. E16417. The City will coordinate with LAN so LAN can have someone present when the City's contractor exposes the various utilities to ensure the necessary horizontal and vertical data, dimensions, and existing conditions are gathered (i.e., elevations, coordinates, dimensions, photos, pipe conditions, type of pipe joint at connection, etc.).



ATTACHMENT B
NUECES RIVER RAW WATER PUMP STATION
PIPING & SYSTEMS UPGRADES (PROJECT# 25014)
SUMMARY OF FEES

LAN proposes to complete these services on a lump sum basis for a total contract amount not-to-exceed **1,540,955.00**. The following table summarizes the fees associated with each task under this proposal:

TASK	DESCRIPTION	FEE
	BASIC SERVICES	
1	Project Management & Coordination	\$137,440
2	30% Design Services	\$268,610
3	60% Design Services	\$323,720
4	90% Design Services	\$242,440
5	Final Design / Issued for Bid	\$93,460
6	Bid Phase Services	\$43,970
7	Construction Phase Services	\$214,750
	ADDITIONAL SERVICES (ALLOWANCES)	
8	Topographic Survey/ROW	\$21,500
9	Subsurface Utility Engineering	\$115,460
10	Geotechnical Investigation & Engineering	\$37,105
11	Hydraulic Modeling & Transient Analysis	\$30,000
12	Permitting Allowance	\$12,500
	TOTAL PROPOSED FEE	\$ 1,540,955



ATTACHMENT C

NUECES RIVER RAW WATER PUMP STATION

PIPING & SYSTEMS UPGRADES (PROJECT# 25014)

LABOR / FEE BREAKDOWN

TASK 1 – PROJECT MANAGEMENT & COORDINATION

	Resource	Principal-in-Charge	QA/QC	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Structural Engineer	Graduate Engineer	Senior Designer	Admin Prof	Expenses	Total Cost
	Project Management & Coordination												
1	Project Kick Off Meeting			1	1								\$600
2	Monthly Progress Meetings & Reports (12)	12		24							12		\$12,000
3	Site Visits(3)			24	24	24			16			\$1,000	\$23,960
4	Review of Existing and Record Data			16	8	8	8	8	40	32			\$23,240
5	Design Concept Review	4	12	8									\$7,800
6	Coordination w CCW			40	24		24		24				\$28,760
7	Coordination w Geotech			8					16				\$4,400
8	Coordination w Survey / SUE			8					40				\$7,520
9	Coordination w Third-Party Utilities			12					40				\$8,680
10	Coordination for City Utilities			32					32				\$13,440
11	Coordination w City Engineer Real Estate			16						16			\$7,040
TOTAL HOURS / UNITS:		16	12	189	57	32	32	8	208	48	12	\$1,000	
BILLABLE RATES:		\$320	\$350	\$290	\$310	\$270	\$275	\$220	\$130	\$150	\$100		
TOTAL COSTS:		\$5,120	\$4,200	\$54,810	\$17,670	\$8,640	\$8,800	\$1,760	\$27,040	\$7,200	\$1,200	\$1,000	\$137,440

TASK 2 – 30% DESIGN SERVICES

	Resource	Principal-in-Charge	QA/QC	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Graduate Engineer	Senior Designer	Designer	Admin Prof	Expenses	Total Cost
	30% Design Services												
1	Analyze Site Piping Configurations		8	24	16	80	80					\$0	\$58,320
2	Develop Construction Sequencing & Phasing	1		24	40			60				\$0	\$27,480
3	Prepare 30% Construction Documents	4		4	16	24	24	120	200	200		\$0	\$90,080
4	Develop Draft ELR	8		80		16	16	240			40	\$0	\$69,680
5	Review and Deliver 30% Documents		16	4				16				\$0	\$8,840
6	Client Review Meeting	1		1	1			1				\$0	\$1,050
7	Deliver Final ELR & 30% Documents			4				80			16	\$0	\$13,160
TOTAL HOURS / UNITS:		14	24	141	73	120	120	517	200	200	56	\$0	
BILLABLE RATES:		\$320	\$350	\$290	\$310	\$270	\$275	\$130	\$150	\$120	\$100		
TOTAL COSTS:		\$4,480	\$8,400	\$40,890	\$22,630	\$32,400	\$33,000	\$67,210	\$30,000	\$24,000	\$5,600	\$0	\$268,610



TASK 3 – 60% DESIGN SERVICES

	Resource	Principal-in-Charge	QA/QC	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Structural Engineer	Graduate Engineer	Senior Designer	Designer	Admin Prof	Total Cost
	60% Design Services												
1	Detailed Design Services	2		16	24	40	40	40	80	80			\$65,720
2	Develop 60% Plans	2		60	48	60	60	80	360	400	400		\$238,020
3	Review and Deliver 60% Documents	2	40	4					16				\$17,880
4	Client Review Meeting / Design Workshop	2	2	2	2				2				\$2,100
TOTAL HOURS / UNITS:		8	40	82	74	100	100	120	458	480	400	0	
BILLABLE RATES:		\$320	\$350	\$290	\$310	\$270	\$275	\$220	\$130	\$150	\$120	\$100	
TOTAL COSTS:		\$2,560	\$14,000	\$23,780	\$22,940	\$27,000	\$27,500	\$26,400	\$59,540	\$72,000	\$48,000	\$0	\$323,720

TASK 4 – 90% DESIGN SERVICES

	Resource	Principal-in-Charge	QA/QC	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Structural Engineer	Graduate Engineer	Senior Designer	Designer	Total Cost
	90% Design Services											
1	Develop 90% Plans, Technical Specs	2	24	16	24	24	24	24	180	240	260	\$130,080
2	Contract Documents	4		4	4	4	4	4	80			\$19,540
3	Standard Specifications			2					16			\$3,060
4	Technical Specifications			20	40	60	40	40	80			\$68,600
5	Update OPCC	1		16	4	4	4	4	40			\$14,460
6	Summary	1		4					24			\$4,600
7	Client Review Meeting	2		2	2				2			\$2,100
TOTAL HOURS / UNITS:		10	24	64	74	92	72	72	422	240	260	
BILLABLE RATES:		\$320	\$350	\$290	\$310	\$270	\$275	\$220	\$130	\$150	\$120	
TOTAL COSTS:		\$3,200	\$8,400	\$18,560	\$22,940	\$24,840	\$19,800	\$15,840	\$54,860	\$36,000	\$31,200	\$242,440

TASK 5 – FINAL DESIGN / ISSUED FOR BID

	Resource	Principal-in-Charge	QA/QC	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Structural Engineer	Graduate Engineer	Senior Designer	Designer	Total Cost
	Final Design / Issued for Bid											
1	Develop 100% Plans	2	12	16	16	16	16	16	90	120	120	\$70,780
2	Prepare Issued for Bid	2	4	16					40	40	40	\$22,680
TOTAL HOURS / UNITS:		4	16	32	16	16	16	16	130	160	160	
BILLABLE RATES:		\$320	\$350	\$290	\$310	\$270	\$275	\$220	\$130	\$150	\$120	
TOTAL COSTS:		\$1,280	\$5,600	\$9,280	\$4,960	\$4,320	\$4,400	\$3,520	\$16,900	\$24,000	\$19,200	\$93,460



TASK 6 – BID PHASE SERVICES

	Resource	Principal-in-Charge	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Structural Engineer	Graduate Engineer	Senior Designer	Expenses	Total Cost
	Bid Phase Services										
1	Pre-Bid Meeting	1	1					1			\$740
2	Review Technical Questions on CIVCAST		20	4	4	4	4	80			\$20,500
3	Prepare Addenda	1	12					40	40		\$15,000
4	Review Bid Results, Make Recommendation	1	8					2			\$2,900
5	Prepare Conformed Documents	1	4						20	\$350	\$4,830
TOTAL HOURS / UNITS:		4	45	4	4	4	4	123	60	\$350	
BILLABLE RATES:		\$320	\$290	\$310	\$270	\$275	\$220	\$130	\$150		
TOTAL COSTS:		\$1,280	\$13,050	\$1,240	\$1,080	\$1,100	\$880	\$15,990	\$9,000	\$0	\$43,970

TASK 7 – CONSTRUCTION PHASE SERVICES

	Resource	Principal-in-Charge	Project Manager	Senior Engineer	Pipeline Engineer	Process Engineer	Graduate Engineer	Senior Designer	Total Cost
	Construction Phase Services								
1	Pre-Con Conference	1	1	1			1		\$1,050
2	Respond to RFI's		160				320		\$88,000
3	Change Order Support	4	40	16	16	16	40	40	\$37,760
4	Review & Approve Submittals		80				80		\$33,600
5	Construction Observations		16	8		4	64		\$16,540
6	Attend Construction Progress Meetings		16						\$4,640
7	Start-up, Testing, and Commissioning		8	8		8			\$7,000
8	Substantial Completion	1	8	8			8		\$6,160
9	Final Completion	1	8	8			8		\$6,160
10	Prepare Record Drawings	1	8				40	40	\$13,840
TOTAL HOURS / UNITS:		8	345	49	16	28	561	80	
BILLABLE RATES:		\$320	\$290	\$310	\$270	\$275	\$130	\$150	
TOTAL COSTS:		\$2,560	\$100,050	\$15,190	\$4,320	\$7,700	\$72,930	\$12,000	\$214,750

ADDITIONAL SERVICES (ALLOWANCES)

	Resource	Project Manager	Senior Engineer	Structural Engineer	Graduate Engineer	Designer	Sub	Total Cost
	Additional Services							
8	Topographic / ROW Surveying	4	0	0	0	4	\$19,860	\$21,500
9	Subsurface Engineering	8			8		\$112,100	\$115,460
10	Geotechnical Investigation & Engineering	4		4			\$35,065	\$37,105
11	Hydraulic Modeling & Transient Analysis	23	52		55			\$30,000
12	Permitting Allowance	43						\$12,500
TOTAL HOURS / UNITS:		82	52	4	63	4	\$167,025	
BILLABLE RATES:		\$290	\$310	\$220	\$130	\$120		
TOTAL COSTS:		\$23,780	\$16,120	\$880	\$8,190	\$480	\$0	\$216,565



ATTACHMENT D
NUECES RIVER RAW WATER PUMP STATION
PIPING & SYSTEMS UPGRADES (PROJECT# 25014)
PROJECT DESIGN SCHEDULE

Task	Task Name	Task Hours	Start (week)	End (week)
1	Project Management & Coordination	694	NTP ⁽¹⁾	NTP + 55
2	30% Design Services (inc. Geo, Survey)	1779	NTP	NTP + 20
3	60% Design Services (inc. Modeling, SUE)	2508	NTP + 20	NTP + 40
4	90% Design Services	928	NTP + 40	NTP + 48
5	Final Design & Issued for Bid	566	NTP + 48	NTP + 54

NTP ⁽¹⁾ = Design notice to proceed

The design of the project will be completed within 54 weeks from NTP.



ATTACHMENT E
NUECES RIVER RAW WATER PUMP STATION
PIPING & SYSTEMS UPGRADES (PROJECT# 25014)
LABOR RATE SCHEDULE
(EFFECTIVE THROUGH MAY 2026)

<u>RESOURCE</u>	<u>LABOR RATE / HR</u>
PRINCIPAL-IN-CHARGE	\$320
QA/QC	\$350
PROJECT MANAGER	\$290
SENIOR ENGINEER	\$310
PIPELINE ENGINEER	\$270
PROCESS ENGINEER	\$275
STRUCTURAL ENGINEER	\$220
GRADUATE ENGINEER	\$130
SENIOR DESIGNER	\$150
DESIGNER	\$120
ADMINISTRATIVE PROFESSIONAL	\$100

