



PROFESSIONAL SERVICES AGREEMENT

(version 9-16-2019)

This AGREEMENT ("Agreement") is entered by and between **LJA Engineering, Inc.** ("Professional"), located at **1904 W. Grand Parkway N, Suite 100 Katy, TX 77449** and the **City of League City** ("City"), a home-rule municipality, located at 300 W. Walker St., League City, Texas 77573 on the date set forth below.

Terms:

1. **Scope of Services:** Professional will perform the services as set forth in **Exhibit A**, which is attached and incorporated herein, and which can be generally described as **Bay Ridge Flood Reduction Project, Phase Ia**. Services related to design, bid, or construction of a public work shall conform to the requirements set forth in **Exhibit B**. If there is a conflict between the terms of this Agreement and Exhibits A or B, the terms of this Agreement will prevail.
2. **Term and Termination:** This Agreement shall commence on **January 6, 2020** and shall expire on **October 27, 2020**. City reserves the right to terminate this Agreement for convenience upon seven (7) days written notice to Professional. Upon such termination, City shall pay Professional, at the rate set out in **Exhibit A**, for services satisfactorily performed up through the date of termination. Notwithstanding any provision in this Agreement to the contrary, City will not be required to pay or reimburse Professional for any services performed or for expenses incurred by Professional after the date of the termination notice that could have been avoided or mitigated by Professional.
3. **Compensation:** Professional shall be paid for the services as set forth in **Exhibit A**. In no event shall the total compensation exceed **\$240,000.00** during the term of this Agreement. City shall tender payment (including progress/partial payments) for services only after such services are completed and are deemed to be acceptable under this Agreement, in the sole reasonable discretion of City. Professional must submit to City invoices for all services provided, which invoices must include details and dates of service. Payment by City shall be made within thirty (30) days of receipt of an invoice, except for any portion of the invoiced amount that City disapproves as not compliant under this Agreement, in the sole reasonable discretion of City. If City disapproves any amount submitted for payment by Professional, City shall give Professional specific reasons for disapproval in writing.
4. **Insurance:** Professional is required to maintain insurance through the term of this Agreement.

If required by the City, Professional shall maintain Comprehensive General Liability insurance coverage of \$1,000,000 per occurrence or medical malpractice insurance (whichever applies) throughout the entire term of the Agreement. If at any point during the Agreement, Professional will enter City property, Professional shall also maintain the following insurance: (i) Worker's Compensation coverage with statutory limits for the State of Texas, including Employers Liability coverage of \$500,000 per accident; (ii) Commercial Automobile Liability coverage of \$1,000,000 Combined Single Limit; (iii) for engineers and architects only: Professional Liability coverage of \$5,000,000 per claim; and (iv) for builders only: Builder's Risk coverage in the amount of the construction cost, including protection against named windstorm and flood. All policies must contain a waiver of subrogation against City. Comprehensive General Liability and Commercial Automobile Liability policies must name the City as Additional Insured. Professional shall pay all insurance deductibles and deductibles must not exceed \$10,000 unless

approved in advance by City (and in the case of professional liability must not exceed \$150,000). Professional shall provide City Certificates of Insurance evidencing these insurance requirements prior to the start of work. To the fullest extent permitted by law, Professional's total liability to City for any and all injuries, claims, losses, expenses or damages whatsoever arising out of or in any way related to the Project or this Agreement from any causes including, but not limited to, Professional's negligence, errors, omissions, strict liability, or breach of contract and whether claimed directly or by way of contribution shall not exceed the proceeds of the applicable insurance policies required by Professional under this Agreement.

5. **Liquidated Damages:** Professional acknowledges that time is of the essence in performing this Agreement. City and Professional (collectively, the "Parties") agree that if Professional is late in performing any service designated as Time Critical on the Scope of Services attached to this Agreement, City will suffer loss, damages, or other harm from Professional's delay. The Parties agree that the amount of loss, damages, or harm likely to be incurred as a result of Professional's delay is incapable or difficult to precisely estimate, and therefore the Parties desire to stipulate the amount of such loss, damages, or harm. Accordingly, Professional shall have deducted from any amounts owed under this Agreement liquidated damages equal to the number of calendar days of the delay(s) times the daily rate, which rate shall be one-tenth of one percent (0.1%) times the compensation shown in the Scope of Services for such Time Critical service. The Parties further agree that: (i) the liquidated damages specified herein are not a penalty but rather bear a reasonable relationship to, and is not plainly or grossly disproportionate to, the probable loss likely to be incurred by City as a result of Professional's delay; (ii) one of the reasons for City and Professional to agree to such amounts is the uncertainty and cost of litigation regarding the question of actual damages; and (iii) City and Professional are sophisticated business parties and negotiated this Agreement at arm's length.
6. **Independent Professional:** Professional is an independent Professional and is not an employee, partner, joint venture, or agent of City. Professional understands and agrees that he/she will not be entitled to any benefits generally available to City employees. Professional shall be responsible for all expenses necessary to carry out the services under this Agreement and shall not be reimbursed by City for such expenses except as otherwise provided in this Agreement.
7. **Intellectual Property:** This Agreement shall be an Agreement for services and the parties intend and consider any work created as a result of this Agreement, including any and all documentation, images, products or results, to be a work for hire under federal copyright law. Upon payment in full for Professional's services, ownership of the work shall belong to and remain the exclusive property of the City. The work may be edited at any time within the City's discretion. If the work would not be considered a work-for-hire under applicable law, Professional hereby assigns, transfers, and conveys any and all rights, title and interest to City of League City, including without limitation all copyrights, patents, rights of reproduction, rights to ownership, and right to secure registrations, renewals, reissues and extensions thereof. As the sole copyright holder of the work, the City maintains and asserts the rights to use, reproduce, make derivative works from, and/or edit the Work in any form of medium, expression or technology now known or hereafter developed, at any time within the City's discretion. Professional shall not sell, disclose or obtain any other compensation for the services provided herein. If the work is one to which the provisions of 17 U.S.C. § 106A apply, the Professional hereby waives and appoints the City to assert on the Professional's behalf the Professional's moral rights or any equivalent rights regarding the form or extent of any alteration to the work (including, without limitation, removal or destruction) or the making of any derivative works based on the Work, including, without limitation, photographs, drawings or other visual reproductions of the work, in any medium, for the City's purposes. Any reuse by the City, without specific written verification or adaptation by Professional, shall be at City's sole risk and without liability to Professional. Any modification of the plans will be evidenced on the plans and be signed and sealed by a licensed professional prior to re-use of modified plans.
8. **Confidentiality:** During the course of the work and/or services to be provided under this Agreement, Professional may come in contact with confidential information of the City. Confidential information shall not extend to: (a) information that at the time of disclosure or subsequently is published or otherwise generally available to the public other than through any act or omission on the part of Professional; (b)

information that Professional can demonstrate by written records was lawfully in the possession of Professional at the time of disclosure and not otherwise subject to a non-disclosure agreement; (c) information that Professional can demonstrate by written records was acquired from a third party who had the lawful right to make such disclosure; (d) information that Professional can demonstrate by written records was independently developed by Professional without reference to the materials comprising the information disclosed under this Agreement; or (e) information that Professional is required to disclose pursuant to applicable law, legally enforceable order, decree, regulation or rule, or by deposition or trial testimony pursuant to subpoena. Professional agrees to treat as confidential the information or knowledge that becomes known to Professional during performance of this Agreement and not to use, copy, or disclose such information to any third party unless authorized in writing by the City. This provision does not restrict the disclosure of any information that is required to be disclosed under applicable law. Professional shall promptly notify the City of any misuse or unauthorized disclosure of its confidential information and upon expiration of this Agreement shall return to the City all confidential information in Professional's possession or control. Professional shall further comply with all information security policies of the City that may apply and shall not make any press releases, public statements or advertisement referring to the services provided under this Agreement or the engagement of Professional without the prior written approval of the City.

9. **Warranties and Representations:** Professional warrants and agrees that Professional shall perform its services and conduct all operations in conformity with all applicable federal, state, and local laws, rules, regulations, and ordinances. For any service performed on premises owned or controlled by City, Professional warrants and agrees that Professional will perform said services in compliance with all City rules, including but not limited to, prohibitions related to tobacco use, alcohol, and other drugs.
10. **Licenses/Certifications:** Professional represents and warrants that it will obtain and maintain in effect, and pay the cost of, all licenses, permits or certifications that may be necessary for Professional's performance of this Agreement. If Professional is a business entity, Professional warrants, represents, covenants, and agrees that it is duly organized, validly existing and in good standing under the laws of the state of its formation; and is duly authorized and in good standing to conduct business in the State of Texas, that it has all necessary power and has received all necessary approvals to execute and deliver the Agreement and is authorized to execute this Agreement according to its terms on behalf of Professional.
11. **Performance/Qualifications:** Professional agrees and represents that Professional has the personnel, experience, and knowledge necessary to qualify Professional for the particular duties to be performed under this Agreement. Professional represents that all services performed under this Agreement shall be performed consistent with generally prevailing professional or industry standard of care.
12. **Conflict of Interest:** Professional warrants, represents, and agrees that Professional presently has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with Professional's performance of the services hereunder. Professional further warrants and affirms that no relationship or affiliation exists between Professional and City that could be construed as a conflict of interest with regard to this Agreement.
13. **INDEMNIFICATION: PROFESSIONAL SHALL INDEMNIFY AND HOLD HARMLESS CITY AND EACH OF ITS OFFICIALS, OFFICERS, AGENTS AND EMPLOYEES FROM AND AGAINST ALL CLAIMS, ACTIONS, SUITS, DEMANDS, PROCEEDINGS, COSTS, DAMAGES AND LIABILITIES, INCLUDING WITHOUT LIMITATION REASONABLE ATTORNEYS' FEES AND REASONABLE LITIGATION COSTS TO THE EXTENT THAT THE DAMAGE IS CAUSED BY OR RESULTS FROM AN ACT OF NEGLIGENCE OF PROFESSIONAL OR ANY AGENT, EMPLOYEE,**

SUBPROFESSIONAL, OR SUPPLIER OF PROFESSIONAL, OR ANOTHER ENTITY OVER WHICH PROFESSIONAL EXERCISES CONTROL IN THE EXECUTION OR PERFORMANCE OF THIS CONTRACT

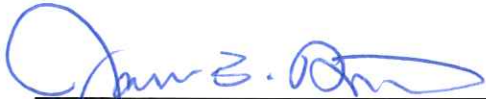
14. **Force Majeure:** Neither party shall be liable to the other for (i) any delay in performance; (ii) any other breach; (iii) any loss or damage; or (iv) any contribution to or aggravation of any of the foregoing; arising solely from uncontrollable forces such as fire, theft, storm, war, or any other cause that could not have been reasonably avoided by the party's exercise of due diligence.
15. **Notices:** Any notice given under this Agreement by either party to the other may be effected either by personal delivery in writing or by mail, registered or certified postage prepaid with return receipt requested. Mailed notices shall be addressed to the addresses of the Parties as they appear in the contract. Notices delivered personally shall be deemed communicated at the time of actual receipt. Mailed notices shall be deemed communicated three (3) days after mailing.
16. **Texas Family Code Child Support Certification:** Pursuant to Section 231.006 of the Texas Family Code, Professional certifies that it is not ineligible to receive the award of or payments under the Agreement and acknowledges that the Agreement may be terminated, and payment may be withheld if this certification is inaccurate.
17. **State Auditor:** Professional understands that acceptance of funds under the Agreement constitutes acceptance of the authority of the Texas State Auditor's Office, or any successor agency (collectively, the "Auditor"), to conduct an audit or investigation in connection with those funds. Professional agrees to cooperate with the Auditor in the conduct of the audit or investigation, including without limitation providing all records requested. Professional will include this provision in all contracts with permitted subprofessionals.
18. **Jurisdiction:** Any disputes under this Agreement shall be brought in a court of competent jurisdiction in Galveston, Texas and governed by Texas law.
19. **Alternative Dispute Resolution:** To the extent that Chapter 2260, Texas Government Code, is applicable to this Contract and is not preempted by other applicable law, the dispute resolution process provided for in Chapter 2260 and the related rules adopted by the Texas Attorney General Pursuant to Chapter 2260, shall be used by City and Professional to attempt to resolve any claim for breach of contract made by Professional that cannot be resolved in the ordinary course of business. The Director of Finance of City shall examine Professional's claim and any counterclaim and negotiate with Professional in an effort to resolve such claims. This provision shall not be construed as a waiver by City of its right to seek redress in the courts.
20. **Entire Agreement:** This Agreement contains the entire understanding between the Parties and supersedes all prior agreements, arrangements, and understanding, oral or written between the Parties relating to this Agreement. This Agreement may not be modified except by mutual written agreement of the Parties executed subsequent to this Agreement.
21. **Eligibility to Receive Payment:** Professional certifies that, as a matter of state law, it is not ineligible to receive the Agreement and payments pursuant to the Agreement and acknowledges that the Agreement may be terminated, and payment withheld if this representation is inaccurate.
22. **Payment of Debt/Delinquency to State:** Professional certifies that it is not indebted to the City of League City and is current on all taxes owed to the City of League City. Professional agrees that any payments owing to Professional under the Agreement may be applied directly toward any debt or delinquency that Professional owes the City of League City regardless of when it arises, until such debt or delinquency is paid in full.

23. **Products and Materials Produced in Texas:** If Professional will provide services under the Agreement, Professional covenants and agrees that in performing its duties and obligations under the Agreement, it will purchase products and materials produced in Texas when such products and materials are available at a price and delivery time comparable to products and materials produced outside of Texas.
24. **Risk of Loss:** If applicable, all work performed by Professional pursuant to the Agreement will be at Professional's exclusive risk until final and complete acceptance of the work by City. In the case of any loss or damage to the work prior to City's acceptance, bearing such loss or damage will be Professional's responsibility.
25. **Publicity:** Professional shall not use City's name, logo or likeness in any press release, marketing materials or other public announcement without receiving City's prior written approval.
26. **Legal Construction/Severability:** In the event that any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision, and this Agreement shall be construed as if such invalid, illegal or unenforceable provisions had never been contained in it. To this end, the provisions of this Agreement are declared to be severable. The Parties may mutually agree to renegotiate the Agreement to cure such illegality/invalidity or unconstitutionality if such may be reasonably accomplished.
27. **Limitations:** The Parties are aware that there are constitutional and statutory limitations on the authority of City to enter into certain terms and conditions of the Agreement, including, but not limited to, those terms and conditions relating to liens on City's property; disclaimers and limitations of warranties; disclaimers and limitations of liability for damages; waivers, disclaimers and limitations of legal rights, remedies, requirements and processes; limitations of periods to bring legal action; granting control of litigation or settlement to another party; liability for acts or omissions of third parties; payment of attorneys' fees; dispute resolution; indemnities; and confidentiality (collectively, the "Limitations"). Any terms and conditions related to the Limitations will not be binding on City except to the extent authorized by the laws and Constitution of the State of Texas.
28. **Sovereign Immunity:** The Parties agree that neither the execution of the Agreement by City nor any other conduct, action or inaction of any City representative relating to the Agreement constitutes a waiver of sovereign immunity by City.
29. **Authority:** Professional warrants and represents that Professional has full power and authority to enter into and perform this Agreement and to make the grant of rights contained herein. The person signing on behalf of City represents that he/she has authority to sign this Agreement on behalf of City.
30. **Non-Waiver:** The Parties specifically agree that neither the occurrence of an event giving rise to a breach of contract claim nor the pendency of a claim constitute grounds for the suspension of performance by Professional. No covenant or condition of this Agreement may be waived except by written consent of the waiving party. Forbearance or indulgence by one party in any regard whatsoever shall not constitute a waiver of the covenant or condition to be performed by the other party.
31. **Prohibition on Boycotting Israel:** Pursuant to Section 2270.002 of the Texas Government Code, by executing this Agreement Professional verifies that Professional: (1) does not boycott Israel; and (2) will not boycott Israel during the term of this Agreement.
32. **Prohibition Against Business with Iran, Sudan or Foreign Terrorists Organizations:** Professional warrants, covenants, and represents that Professional is not engaged in business with Iran, Sudan, or any company identified on the list referenced in Section 2252.152 of the Texas Government Code.
33. **Mutual Waiver of Consequential Damages.** Notwithstanding any provision of this

Agreement to the contrary, in no event shall either party be liable to the other for consequential, incidental, punitive, special, or exemplary damages, including lost revenues, profits, delays, or other economic loss arising from any cause including breach of warranty, breach of contract, tort, strict liability or any other cause whatsoever. To the extent permitted by law, any statutory remedies that are inconsistent with this provision of the agreement are waived.

Executed on this ____ day of _____, _____. *(date to be filled in by City Secretary)*

LJA ENGINEERING, INC. - "Professional"



James E. Brown, PE – Senior Vice President

CITY OF LEAGUE CITY – "City"

John Baumgartner – City Manager

Attest:

Diana Stapp, City Secretary

Approved as to Form:

Office of the City Attorney

Exhibit A

Scope of Services/Description of Products/Payment Schedule (20 number of pages, including this page)

Scope of Services and fee schedule to the City of League City as noted on attached proposal.



1904 W Grand Parkway N, Suite 100, Katy, Texas 77449
t 713.953.5200 f 713.953.5026 LJA.com TBPE F-1386

November 19, 2019

PROPOSAL

Mr. Christopher Sims
Director of Engineering
City of League City
500 W. Walker St.
League City, Texas 77573

Re: Proposal for Engineering Services Related to the
Bay Ridge Flood Reduction Project, Phase 1A
League City, Galveston County, Texas
LJA Proposal No. 19-04120

Dear Mr. Sims:

LJA Engineering Inc. (LJA) is pleased to present this proposal for your review and approval for engineering services for the Phase 1A Bay Ridge Flood Reduction Project. LJA will provide a preliminary design and recommendations for improvements to the existing levee around the perimeter of the Bay Ridge Subdivision. All hydrologic analyses will be based on Atlas 14 values for the 2, 10, 50, and 100-year events. We propose the following services and corresponding fees in accordance with the following scope of services.

SCOPE OF SERVICES

A. Levee Evaluation Study

1. Coordinate with the Geotechnical Engineer on evaluating the soil conditions existing levee and a proposed alignment for improvements to the levee.
2. Levee Certification Alternative: Based on the preliminary FEMA Data, LJA will evaluate options to design and construct a levee that could be certified by an Engineer and accredited by FEMA. This includes the project alternatives for raising the height of the existing levee and extending the levee along the north and west side of the Bay Ridge Subdivision. This phase will include the process of completing the design and construction of the project through final approval from FEMA through a Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR).
3. Data Collection: Obtain FEMA effective model, as-builts or BRINSAP report for bridges, reports from the City of League City, LiDAR, aerial photography.
4. Update existing HEC-HMS model with updated land use, 2018 LiDAR, and Atlas 14 Rainfall.
5. Develop unsteady HEC-RAS model with 2018 LiDAR cross sections for overbanks, channel cross sections from survey (by Others) and available bridge geometries.
6. Prepare One (1) proposed conditions model that utilizes existing ROW and open space.

7. Report summarizing data, methods, assumptions, and findings with exhibits.
8. Coordination with Design Engineer to resolve design limitations. Update models as needed.

B. Engineering – Preliminary Design Services

1. Perform two (2) site visits.
2. Prepare, review and analyze available r/w, easement, parcel, etc. data through our in-house global information system (G.I.S.) group.
3. Prepare preliminary design (plan view only) of the proposed drainage improvements (typical cross section(s) will be included with this preliminary design).
4. Prepare a preliminary construction cost estimate.

C. Meetings

1. Attend up to three (3) public meetings to discuss design(s) of project.
2. Attend up to three (3) coordination meetings with City Staff and other government agencies regarding the review and approval of the construction plans.

D. Geotechnical Investigation (Sub-Consultant)

1. A geotechnical report is needed for the levee evaluation study.
2. Prepare a geotechnical report to determine the height, width, and slope stability per FEMA certification requirements.
3. Design recommendations for the levee improvements, which include earthen and/or flood walls.
4. Materials Testing is not included in this proposal and will be submitted under a separate proposal if needed by the City.

E. Surveying Services (Sub-consultant)

1. Provide as-built topography of the existing levee.
2. Topographic cross sections at 200-foot intervals.
3. Locate all structures, fences, and other above ground features which could affect construction.
4. If needed, Land Acquisition services will include the preparation of metes & bounds description and exhibits of parcels determined to expand the existing levee. The estimated fee is \$1,000 per parcel which includes the exhibit and metes & bounds descriptions.

Please note all tasks are time critical.

We estimate the following:

A.	Topographic Survey	4 Weeks
B.	Geotechnical Investigation	16 Weeks
C.	Levee Evaluation Study	10 Weeks
D.	City Review	4 Weeks
E.	Preliminary Design	4 Weeks
F.	City Review of Preliminary Design	2 Weeks
G.	Revisions to Preliminary Design per City Comments	2 Weeks

Total Estimate	42 Weeks
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COMPENSATION – BASE SERVICES

The compensation for the previously defined scope of work is based on the following fees:

ENGINEERING SERVICES

Phase	Description	Fees
401	Preliminary Design Services (Lump Sum)	\$7,332
426	Meetings (Time and Materials not to exceed \$3,000 w/o written approval from client)	\$3,000
601	Levee Evaluation Study (Lump Sum)	\$ 57,000
ENGINEERING SERVICES SUBTOTAL		\$ 67,332

SURVEYING SERVICES (SUB-CONSULTANT)

201	Design Topography Survey (Time and Materials) (Includes 10% Markup)	\$11,000
SUB-CONSULTANT (SURVEYING SERVICES) SUBTOTAL		\$11,000

GEOTECHNICAL INVESTIGATION

426B	Geotechnical Report (Lump Sum) (Includes 6% markup)	\$156,668
GEOTECHNICAL INVESTIGATION SUBTOTAL		\$156,668

PROJECT TOTALS

ENGINEERING SERVICES	\$ 67,332
SURVEYING SERVICES (SUB-CONSULTANT)	\$ 11,000
GEOTECHNICAL INVESTIGATION (SUB-CONSULTANT)	\$156,668
REIMBURSABLE EXPENSES (TIME & MATERIALS – ESTIMATED)	\$ 5,000
GRAND TOTAL	\$ 240,000

Reimbursable expenses include, but are not limited to advertising, reproduction, deliveries, travel/mileage, GPS equipment, printing, plan review and permit fees, filing fees, recording fees, and long distance phone charges. An estimated budget is shown above.

TERMS OF PAYMENT

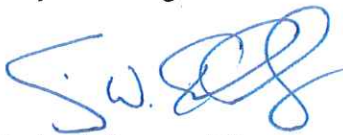
Payment for the above-mentioned services will be made on a monthly basis in accordance with the agreement between LJA Engineering, Inc. and City of League City. We will be able to start work on the project upon your written authorization. If this proposal is acceptable to you, please sign this proposal and return a copy to us.

Should you have any questions or need any additional information concerning this proposal, please feel free to give me a call at 713.358.8817.

Sincerely,



John Pickens, Jr., PE
Project Manager



Craig Kalkomey, PE
Senior Project Manager

JP/EDR/jb

**ACCEPTED BY:
CITY OF LEAGUE CITY**

By: _____

Name: _____

Title: _____

Date: _____

ATTACHMENT A STANDARD RATE SCHEDULE

Staff, Non-Principal Personnel Charges

Services performed by staff shall be billed on the basis of "labor cost" of each employee times a multiplier of 2.1.

Labor cost is defined as the Labor Cost paid to the Engineer's personnel plus payroll burden, currently 47% for social security contributions, federal and state unemployment taxes, retirement benefits, medical and insurance benefits, sick leave, vacation, and holiday pay applicable thereto.

Upon request of the Client, Engineer shall provide evidence of the then-current salaries paid to the Engineer's personnel for the purpose of verifying the accuracy of any invoices presented for payment by the Engineer to the Client.

Labor Cost Range:

	<u>Lowest</u>	<u>Highest</u>
Department Head (VP, Dept. Manager, Sr. PM)	\$50.00	\$95.00
Project Manager	\$40.00	\$80.00
Engineer (Grad. Eng., EIT, APM, Proj. Coord.)	\$30.00	\$55.00
Sr. Planner	\$45.00	\$80.00
Planner	\$30.00	\$65.00
Sr. Landscape Architect	\$35.00	\$65.00
Landscape Architect	\$29.00	\$55.00
Designer	\$26.00	\$55.00
Resident Project Representative	\$26.00	\$50.00
GIS Developer	\$35.00	\$65.00
GIS Analyst	\$25.00	\$35.00
Survey Technician	\$33.00	\$52.00
Project Surveyor	\$41.00	\$52.00
CADD Operator (CADD Technician)	\$18.00	\$45.00
Clerical (Construction Admin. Assistant)	\$18.00	\$43.00

CADD System

Intergraph CADD system will be billed at a rate of \$25.00/hour plus operator time.

Principals

Principals will be billed at a rate of \$225.00/hour.

Senior Consultants

Senior consultants will be billed at a rate of \$250.00/hour.

Expert Witness

Expert witness and certificate (merit or lender) duties will be billed at a rate of \$425.00/hour.

Surveying Services

Field party rate includes personnel/supervision, normal equipment and supplies. Client requested overtime shall be 1.5 times standard rate.

One-Man Survey Crew	\$115.00/Hour
Two-Man Survey Crew	\$145.00/Hour
Three-Man Survey Crew	\$175.00/Hour
Four-Man Survey Crew	\$205.00/Hour

Reimbursable Expenses

Reproduction, telephone, out-of-town travel expenses, and other non-labor charges directly related to the Project will be billed at cost in addition to the fees agreed upon for Services rendered. Vehicle mileage will be charged at the current IRS mileage rate per mile. Filing fees, permit fees, and other special charges which are advanced on behalf of the Client will be billed on a similar basis plus a 10% service charge.

Payments

Billings for Services rendered will be made monthly and payment is requested within fifteen (15) days of receipt of invoice. Unless special arrangements are made, a finance charge of one and one half percent (1.5%) per month will be added to unpaid balances more than thirty (30) days old as well as any costs of collection, including attorney's fees. LJA reserves the right to suspend work should invoices not be paid within the stated terms. Client affirms that the Services to be provided by LJA should not be subject to the addition of any sales tax, value added tax, stamp duty, wage withholding, or similar tax or withholding, including at the source of payment, and as such, requests that LJA not add any such taxes to its invoices. If applicable, Client shall provide LJA with appropriate exemption certificates. The amount of any excise, VAT, or gross receipts tax that may be imposed for professional services shall be added to the compensation as determined above. In the case where Client is obliged to make any deduction or withholding on account of any such addition, the amount paid to LJA by Client for any invoice shall be grossed up to the amount of the invoice so that any fees and other sums payable to LJA are not subject to such taxes.

This Rate Schedule is subject to annual change at LJA's discretion to reflect increases in costs of operation, inflation, etc.

HIGH TIDE SURVEYING, LLC
REGISTERED PROFESSIONAL LAND SURVEYORS
FEE ESTIMATE

#2019-002CofLC-Bayridge/LJA
October 22, 2019

SCOPE OF SERVICES:

Survey services, for the design and construction, related to the drainage improvements for Bay Ridge Subdivision; reduce ponding and improve drainage along League City Parkway; reduce surface water along Gum Bayou and reduce potential overflow from north to Bay Ridge. Scope of services does not include the preparation of easements and exhibits at this time-if such services are requested, fees associated with these services shall be provided as the scope of services is defined.

DESCRIPTION OF TASK: (Phase 1)

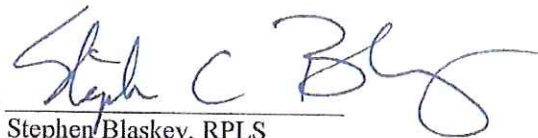
Additional cross sections and possible tighter grid for existing levee.

Not to exceed (Phase 1)

\$10,000.00

High Tide Surveying
200 Houston Ave., Suite B
League City, Texas 77573
281-554-7739

By:



Stephen Blaskey, RPLS
stephen@hightidesurveying.com

October 23, 2019



LJA Engineering
1904 W Grand Parkway N, Suite 100
Katy, Texas 77449

Attn: Mr. John Pickens, Jr., P.E., LEED AP
Project Manager

Re: Cost Estimate for Geotechnical Engineering Services
Bay Ridge Subdivision Levee
State Highway 96 and Seacrest Boulevard
League City, Texas
Terracon Document No. P91195083

Dear Mr. Pickens:

Terracon Consultants, Inc. (Terracon) understands that we have been selected based upon qualifications to provide Geotechnical Engineering services for the above referenced project. This proposal outlines our understanding of the scope of services to be performed by Terracon for this project and provides an estimate of the cost of our services.

Exhibit A	Project Understanding
Exhibit B	Scope of Services
Exhibit C	Compensation and Project Schedule

Our lumpsum fee to perform the scope of services described in this proposal is **\$147,800**. See **Exhibit C** for more details of our fees and consideration of additional services.

The work will be performed under a mutually agreed upon client's "Subconsultant Services Agreement". If you have questions regarding any aspect of this document, please feel free to contact us.

Cost Estimate for Geotechnical Engineering Services

Bay Ridge Subdivision Levee ■ League City, Texas

October 23, 2019 ■ Terracon Document No. P91195083

Terracon

We appreciate the opportunity to submit this proposal and look forward to the opportunity of working with you.

Sincerely,

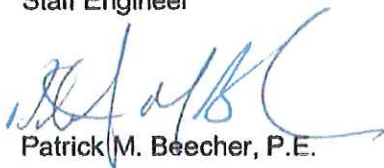
Terracon Consultants, Inc.

(Texas Firm Registration No. F3272)



Rehan Khan, E.I.T.

Staff Engineer



Patrick M. Beecher, P.E.

Geotechnical Services Manager



Rebecca L. Cummins, P.E.

Project Engineer

EXHIBIT A - PROJECT UNDERSTANDING

Our scope of work is based on our understanding of the project as described to us by the client and a site visit performed by Terracon on October 13, 2019. We understand that no civil engineering study has been performed at this site at the time of this proposal. Therefore, we have made reasonable assumptions regarding aspects of this project that are undefined. These assumptions are highlighted. We request the design team provide input to verify this information prior to authorizing us.

Site Location

The site encompasses the perimeter of Bay Ridge Subdivision in League City, Texas. The alignment of the proposed levee and improvements to the existing levee begin about 150 feet southwest of the intersection of State Highway 96 (SH 96) and Seacrest Boulevard traversing southeast for approximately 2,400 feet to Bishops Bridge. The levee is then planned to traverse in a northeast direction along Bishop's Bridge for about 2,400 feet to Gum Bayou. The levee is then planned to traverse in a northwest direction for about 2,500 feet along Gum Bayou in between Bishops Bridge and SH 96. Finally, the levee is planned to traverse in a southwest direction parallel to SH 96 for about 2,500 feet in between Gum Bayou and Seacrest Boulevard.

Existing Conditions

During our brief site visit performed on October 13, 2019, we observed the following:

- The section of the proposed levee parallel to SH 96 is a flat grassy tract of land with residential buildings and a fuel station to its south.
- The section of the proposed levee adjacent to Seacrest Boulevard is a flat grassy tract of land with residential buildings to its east. A water tower belonging to the City of League City was observed near the intersection of Seacrest Boulevard and Ocean Way.
- The section of the proposed levee adjacent to Bishops Bridge has an embankment about 2 to 3 feet above the surrounding grade. A detention pond about 8 feet deep was observed to the west of the intersection of Bishops Bridge and Gum Bayou. We understand this detention pond is planned to be used as a borrow pit to provide fill material required to construct the levee.
- The eastern portion of the site has two ditches, both about 8 feet deep, with an embankment in between them.

Planned Improvements

Based on discussions with LJA Engineering, we understand that the planned improvements at this site will consist of construction of a new levee on the northern, western, and southern portions of the site and increasing the height of the existing levee on the eastern side (the 8-foot high embankment in between Gum Bayou and another ditch that runs parallel to Gum Bayou) by 2 feet. The proposed levee will include flood walls at locations along the alignment where sufficient right-of-way is not available for construction of a levee to the proposed elevations with acceptable

Cost Estimate for Geotechnical Engineering Services

Bay Ridge Subdivision Levee ■ League City, Texas

October 23, 2019 ■ Terracon Document No. P91195083



sideslopes. We also understand that the proposed levee should be designed to meet the standards of Federal Emergency Management Agency (FEMA) 44CFR65.10.

We have made the following assumptions regarding the proposed improvements:

- The total levee height is planned to be no more than 10 feet above adjacent grade. This takes into account a minimum freeboard of 3 feet.
- The proposed flood walls are planned to be no more than 10 feet tall.
- The existing detention pond located west of the intersection of Bishops Bridge and Gum Bayou is the only borrow pit source identified for this project. If another borrow pit is identified, Terracon should be notified so we can plan for additional borings within the additional borrow pits.

EXHIBIT B - SCOPE OF SERVICES

Our proposed scope of services consists of site visit, plan preparation, field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

Site Visit

We plan to walk the entire alignment of the proposed levee prior to our field program. The purpose of the site visit will be to observe, assess, and document the general condition of the levee on the eastern portion (note any instances of sloughing or erosion of the crest and sideslopes, any active seepage along the levee, vegetation cover, etc.), the embankment on the southern portion, and the ground conditions on the northern and western portions of the site.

Field Exploration

The field exploration program is planned to consist of the following.

Number of Borings	Planned Boring Depth (feet) ¹	Planned Location
20	25	Along the alignment of the proposed levee ² .
8	80	
4	15	Within the area of the proposed borrow pit (the existing detention pond located west of the intersection of Bishops Bridge and Gum Bayou).

¹ Below existing grade. On the eastern portion of the site, existing grade refers to top of the levee in between the ditches. The total drilling footage is planned to be 1,200 feet.

² We plan to drill on top of the existing levee located on the eastern portion of the site.

Evaluation of the slope stability of existing and new slopes for the existing detention pond located west of the intersection of Bishops Bridge and Gum Bayou is not part of our scope of services for this project.

Boring Layout and Elevations: The borings will be located in the field utilizing a hand-held GPS unit with an accuracy of ± 25 feet. Field measurements from existing site features will also be utilized.

Subsurface Exploration Procedures: The field services for this project will be performed by Terracon's in-house drillers or by one of our drilling sub-contractors. We plan to use all-terrain vehicle (ATV) mounted drilling equipment to drill the borings. We request the client provide us access inside the fenced detention pond for the borrow pit borings.

Cost Estimate for Geotechnical Engineering Services

Bay Ridge Subdivision Levee ■ League City, Texas

October 23, 2019 ■ Terracon Document No. P91195083



The field program is planned to be performed in general accordance with USACE EM 1110-1-1804. Based on information provided in Appendix F of USACE EM 1110-1-1804, undisturbed cohesive soils are recommended to be obtained using a 5-inch nominal diameter open tube sampler and all borings should be sampled continuously through the full depth of the boring. Appendix F of USACE EM 1110-1-1804 also states that equipment availability and costs may dictate the selection of an alternative sampling method. Based on our previous experience with 5-inch diameter open tube samplers, low sample recovery is a common problem while sampling in stiff to very stiff clays. Therefore, we plan to use 3-inch nominal diameter open-tube samplers or the Standard Penetration Test (SPT) to obtain soil samples. Our scope includes continuous sampling to a depth of 10 feet followed by sampling at intervals of 5 feet to the termination depths of the borings.

We plan on staking and/or spray-painting our boring locations. We request the client retain a surveyor to survey our boring locations and provide us their elevations and latitude and longitude.

Terracon will provide a technician in the field on a full-time basis to log the borings on a USACE Drilling Log (ENG FORM 1836) and observe the field exploration activities. The logger will visually classify the samples in general accordance with ASTM D2487 or D2488. Final boring logs, prepared from field logs, will represent the geotechnical engineer's interpretation and include modifications based on observations and laboratory tests.

Once the samples have been collected and classified in the field, open-tube samples will be wrapped in saran wrap and aluminum foil, placed in tubular shaped plastic containers with end caps. Both ends will be taped with scotch electrician bundling tape. SPT samples will be placed in Ziploc bags. All samples will be stored in sample boxes/crates for transport to our laboratory. Excess soil cuttings from the borings are planned to be redistributed around the boring locations. We assume that drumming or removal of the excess soil cuttings from the site is not required.

Groundwater level observations will be obtained when initially observed during drilling, and at 5-minute intervals for a total of 15 minutes. After completion of drilling, the borings will be left open overnight to obtain one-day water level readings. After measuring the one-day water levels, the borings will be backfilled with cement-bentonite grout.

We understand the client will provide right-of-entry and/or permits, if needed, to conduct the exploration. This document assumes that the site can be accessed with ATV-mounted drilling equipment during normal business hours. Our scope does not include services associated with site clearing, removing the excess soil cuttings from the site, or use of special equipment for unusually soft or wet surface conditions. If such conditions are known to exist on the site, Terracon should be notified so that we may adjust our scope of services and estimated fees, if necessary.

Laboratory Testing

The project engineer will review field data and assign various laboratory tests to better understand the engineering properties of various soil strata. Based on our understanding of the project, the assigned tests may include the following:

- Moisture content
- Atterberg limits
- Percent finer than the #200 sieve
- Particle-size analysis (Sieve and Hydrometer tests)
- Unconfined compressive strength of cohesive soil
- Density (unit weight) of cohesive soil
- Unconsolidated-undrained triaxial compression test on cohesive soil
- Consolidated-undrained triaxial compression test on cohesive soil
- One-dimensional consolidation properties of soil using incremental loading
- Measurement of hydraulic conductivity using a flexible wall permeameter
- Crumb test to determine dispersive characteristics of clayey soils
- Double hydrometer test

Our laboratory testing program includes examination of soil samples by an engineer. Based on the results of our field and laboratory testing programs, we describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

Safety

Terracon is currently not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program. Our scope of services does not include environmental site assessment services, but identification of unusual or unnatural materials encountered while drilling will be noted on our logs and discussed in our report.

Exploration efforts require borings (and possibly excavations) into the subsurface, therefore Terracon complies with local regulations to request a utility location service, Texas811, to help locate public utilities within the vicinity of the site. We will consult with the owner/client regarding potential utilities or other unmarked underground hazards. Based upon the results of this consultation, we consider the need for alternative subsurface exploration methods, as the safety of our field crew is a priority.

All private utilities should be marked by the owner/client prior to commencement of field exploration. Terracon will not be responsible for damage to private utilities that are not made aware to us. If the owner/client is not able to accurately locate private utilities, Terracon can assist the owner/client by coordinating or subcontracting with a private utility locating services. Fees associated with the additional services are not included in our current scope of services. The detection of underground utilities is dependent upon the composition and construction of the utility line; some utilities are comprised of non-electrically conductive materials and may not be readily

Cost Estimate for Geotechnical Engineering Services

Bay Ridge Subdivision Levee ■ League City, Texas

October 23, 2019 ■ Terracon Document No. P91195083



detected. The use of a private utility locate service would not relieve the owner of their responsibilities in identifying private underground utilities.

Site Access: Terracon must be granted access inside the existing fenced detention pond site for the borrow pit borings. By acceptance of this proposal, without information to the contrary, we consider this as authorization to access the property for conducting field exploration in accordance with the scope of services.

Engineering and Project Delivery

Results of our field and laboratory programs will be evaluated by a professional engineer. The engineer will develop a geotechnical site characterization, perform the engineering calculations, and develop appropriate geotechnical engineering design criteria for earth-related phases of the project.

Your project will be delivered using our [GeoReport](#) system. Upon initiation, we will provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. A typical delivery process includes three basic stages:

- Stage 1: Project Planning
- Stage 2: Site Characterization
- Stage 3: Geotechnical Engineering

When utilized, a collaboration portal documents communication, eliminating the need for long email threads. This collaborative effort allows prompt evaluation and discussion of options related to the design and associated benefits and risks of each option. With the ability to inform all parties as the work progresses, decisions and consensus can be reached faster. In some cases, only minimal uploads and collaboration will be required, because options for design and construction are limited or unnecessary. This is typically the case for uncomplicated projects with no anomalies found at the site.

When services are complete, we upload a printable version of our completed final geotechnical engineering report, including the professional engineer's seal and signature, which documents our services. Previous submittals, collaboration, and final report are maintained in our system indefinitely. This allows future reference and integration into subsequent aspects of our services, as the project goes through final design and construction.

The geotechnical engineering report will include site location, exploration plan, and boring logs and will provide geotechnical engineering recommendations for the following:

Levee stability analyses

- Seepage analysis will be performed under design flood conditions using the software SLIDE (2D limit equilibrium slope stability program). Results of the seepage analysis will include the following:
 - Seepage flow (cubic feet per second) within the embankment and foundation soils,
 - Discharge velocity and exit gradient beneath the toe of levee,
 - Uplift pressure distribution at the base of levee, and
 - Design flood stage phreatic line to be utilized in slope stability analysis.
- Slope stability analysis will be performed using SLIDE for the following conditions:
 - End of construction (protected side and the high water level side)
 - Rapid drawdown from design flood stage on the high water level side
 - Steady seepage condition resulting from design flood stage
- Sliding stability against translational failure assuming that the failure surface is along the interface of the embankment and foundation of the proposed levee

Our scope includes performing slope stability and seepage analyses for up to 8 cross sections.

Settlement analyses of levees

Our scope includes an estimation of post-construction settlement of the levee as it relates to the overall loss of freeboard as a result of the settlement.

Stability of flood walls

We request the client provide us the locations and the type of flood walls planned at this site. Our scope includes analysis of the proposed walls (up to 8 cross sections) with respect to sliding, floatation, and bearing capacity for usual loading, unusual loading, and extreme loading conditions.

We request the client provide us the design flood level and the planned final cross sections, including any structures such as spillways, flood gates, flood walls, etc. along the alignment of the levee.

Suitability of borrow materials

The soil samples obtained from the borings drilled within the proposed borrow pit will be tested for evaluating their dispersion potential. Based on the results of these tests, we will form an opinion regarding the suitability of these soils for use in construction of the levee.

USACE EC 1110-2-6067 states that if the peak ground acceleration (PGA) for the 100-year earthquake is less than 0.1g, no evaluation of seismic stability is required. Based on information available from the USGS ground-motion database, the maximum PGA for Galveston County is less than 0.04g. Therefore, we do not plan to evaluate the seismic stability of the proposed improvements for this project.

Cost Estimate for Geotechnical Engineering Services

Bay Ridge Subdivision Levee ■ League City, Texas

October 23, 2019 ■ Terracon Document No. P91195083



Embankment protection including erosion and scour analysis is not included in our scope of services. We will only provide soil parameters required for erosion and scour analysis.

Upon completion of our analyses, we will submit a draft report for review by USACE. After we receive comments on our draft report, the final report will be submitted.

EXHIBIT C - COMPENSATION AND PROJECT SCHEDULE

Compensation

Based upon our understanding of the site and the project as summarized in **Exhibit A** and our planned scope of services outlined in **Exhibit B**, our base fee is shown in the following table:

Description	Estimated Costs
Field exploration	\$49,000
Laboratory testing	\$30,700
Engineering analysis and draft report	\$56,100
Addressing comments from USACE and final report	\$12,000
Total	\$147,800

Our scope of services does not include services associated with surveying of boring locations or repair of damage to existing landscape. If such services are desired by the owner/client, we should be notified so we can adjust our scope of services.

Additional consultation (such as attendance on a project conference call, engineering analysis, review of project documents, etc.) requested will be performed on a time-and-materials basis. A Senior Engineer billing rate of \$180 per hour and Project Engineer billing rate of \$130 per hour will apply. The fee to provide additional consultation services will be in excess of the above provided fee to complete the geotechnical services and will not be incurred without prior approval of the client.

Unless instructed otherwise, we will submit our invoice(s) to the address shown at the beginning of this proposal. If conditions are encountered that require scope of work revisions and/or result in higher fees, we will contact you for approval prior to initiating these services. A supplemental proposal stating the modified scope of services as well as its effect on our fee will be prepared. We will not proceed without your authorization, as evidenced by your signature on a Change Order.

Project Schedule

We developed a schedule to complete the scope of services based upon our existing availability and understanding of your project schedule. This schedule does not account for any delays in field exploration beyond our control, such as weather conditions, permit delays, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives.

Cost Estimate for Geotechnical Engineering Services

Bay Ridge Subdivision Levee ■ League City, Texas

October 23, 2019 ■ Terracon Document No. P91195083



<i>GeoReport</i> Stage	Posting Date from Notice to Proceed ^{1, 2}
Project Planning	1 week
Field Exploration	3 to 4 weeks
Laboratory Testing	5 to 6 weeks
Engineering Analyses and Draft Report	13 to 15 weeks
Addressing Comments from USACE and Final Report	2 to 3 weeks ³

- ^{1.} Upon receipt of your notice to proceed we will activate the schedule component of our *GeoReport* website with specific, anticipated calendar dates for the three delivery points noted above as well as other pertinent events such as field exploration crews on-site, etc.
- ^{2.} We will maintain a current calendar of activities within our *GeoReport* website. In the event of a need to modify the schedule, the schedule will be updated to maintain a current awareness of our plans for delivery.
- ^{3.} This date will count once we receive comments from USACE.

PSA Exhibit B

PHASE REQUIREMENTS

- I. Design Phase Services are considered "Time Critical" and subject to Liquidated Damages as outlined in Item 5 of the Professional Services Agreement. This phase must conform to the following submittal types and requirements:**

A. 30% Submittals should, at a minimum, include the following:

1. Plans that contain the following information:
 - a. Cover Sheet
 - b. Field Survey Plan Sheet
 - c. Design Plan Sheets that show Existing Conditions and proposed concepts with the existing and proposed work clearly identified
 - d. Demo Plan
 - e. Typical Cross-Sections
2. List of preliminary Utility Conflicts and contact information for appropriate utilities.
3. Updated Design Schedule
4. Preliminary Opinion of Probable Costs (OPCC)
5. Permitting recommendations/requirements
6. Traffic Impact Analysis (if needed)
7. Draft H&H Study and/or Preliminary Engineering Report (if needed)
8. Preliminary Land Acquisition Information (if needed)
9. Preliminary Geotechnical findings (if needed)
10. Preparation of Exhibits and attendance at Public Meeting (if needed)

B. 60% Submittals should, at a minimum, include the following:

1. Plans that contain the following information:
 - a. Cover Sheet w/ index
 - b. General Notes
 - c. Sheet Layout
 - d. Typical Cross-Sections
 - e. Survey Control
 - f. Demo Plan
 - g. Grading Plan (if needed)
 - h. Tree Protection and/or Landscape Plan (if needed)
 - i. Traffic Control Plan (if needed)
 - j. Proposed Drainage Area Map and calculations
 - k. Plan and Profile drawings with Station Numbers for Water, Sewer, Storm, Street
 - l. Intersection Details
 - m. Sidewalks, Traffic Signage, & Pavement Marking Plans
 - n. SW3P Plan Sheet(s) and Details
 - o. Standard CoLC Details applicable for project
 - p. Project Specific Requirements/Details/Notes such as
 - 1) Electrical Plans/Details
 - 2) Structural Plans/Details
 - 3) Signal Plans/Details
2. Final ROW Documents for Land Acquisition (if needed)
3. Completed Geotechnical Report (if needed)
4. List of Updated Utility Conflicts and contact information for appropriate utilities.

5. List of needed Permits, draft applications for needed Permits
6. List of Technical Specifications that are needed for Project
7. Updated Design Schedule
8. Preliminary Construction Schedule
9. Updated Preliminary OPCC
10. Preparation of Exhibits and attendance at Public Meeting (if needed)

C. 90% Submittals should, at a minimum, include the following:

1. Updated Design Plans noted above
2. Submittal Letter addressing previous comments made on 60% Review
3. Project Manual – Spec Book, Bid forms, etc.
4. SW3P Manual with appropriate documentations/signatures as applicable
5. Updated OPCC
6. Approved Permits
7. Final List of Utility Conflicts and contact information for appropriate utilities.

D. Resubmittals

1. Phase submittals that do not comply with the requirements set forth above may be rejected in the sole absolute discretion of City. Rejected submittals must be resubmitted for review after all comments have been addressed.
2. Professional will have \$400 deducted from its Compensation for each review by City of a phase submittal after two prior reviews for that same phase.

II. Bid Phase Services should, at a minimum, include the following:

- A. 100% Construction Plans submitted for final City signatures (a Digital Copy w/ signed cover sheet to be submitted prior to posting for bids).
- B. Completed Project Manual
- C. Completed SW3P Manual
- D. Final OPCC
- E. Updated Construction Schedule
- F. Preparation of Exhibits and attendance at Public Meeting (if needed)
- G. Assist with the advertisement of the project (if needed)
- H. Address any RFI during Bid process (if needed)
- I. Attend and Assist in running a Pre-Bid Meeting (if needed)
- J. Provide Addendums to Bid Documents (if needed)
- K. Once Bids are opened, prepare Bid Evaluation, check references, and provide recommendation of award to City

III. Construction Phase Services should, at a minimum, include the following:

- A. Preparation of Exhibits and attendance at Public Meeting (if needed) prior to Project Start
- B. Attendance at Construction Progress Meetings (if needed)
- C. Periodic Site Visits (minimum 1 visit per month of construction)
- D. Review, Track, and make recommendations related to RFIS, Material Submittals, Change Orders, etc.
- E. Address found Design Conflicts in the Field
- F. Provide paper & digital copies of As-Builts