
PROFESSIONAL SERVICES AGREEMENT

(Professional Engineering Services)

1. PARTIES

- 1.1 Parties. The Parties to this Professional Services Agreement (“Agreement”) are **Sciencetech Engineers, Inc.** (“Engineer”), and **Harris County** (“County”), on behalf of its Harris County Engineering Department (“HCED”). County and Engineer each may also be referred to individually herein as a “Party,” or collectively as the “Parties.”

2. PURPOSE

- 2.1 Project Description. County intends to provide a Corridor Study for Navigation Boulevard from Lockwood to Mack Street, located in Harris County Precinct 2 (“Project”). This Project is identified as UPIN 22102MF2D601.
- 2.2 Summary of Scope of Work. In addition to any applicable attachments to this Agreement describing the Scope of Work, County desires that Engineer provide Professional Engineering Services in the study, design, and bidding phase of the Project, as further described in Exhibit A attached.
- 2.3 Professional Engineering Services. The professional services to be performed under this Agreement are within the scope of professional engineering, as defined by state law, and will be provided in connection with the professional employment or practice of a person who is licensed or registered as a professional engineer. The professional engineering services shall be performed in accordance with Tex. Occ. Code Ann. §§ 1001.001, et. seq, as amended.
- 2.4 Professional Services Procurement Act. The work to be performed under this Agreement cannot be purchased on the basis of competitive bids since it is encompassed within Texas Government Code §2254.002(2).

3. ENGINEER’S REPRESENTATIONS

- 3.1 Applicable Expertise. Engineer and the person executing this Agreement on behalf of Engineer certify and represent that Engineer (including Engineer’s agents, employees, volunteers, and subcontractors, as applicable) possesses the skills, qualifications, expertise, experience, education, knowledge, ability, and financial resources to perform all services and/or deliverables contemplated in this Agreement without significant disruption of those deliverables.
- 3.2 Permits and Licensing. Engineer represents that Engineer (including Engineer’s agents, employees, volunteers, and subcontractors, as applicable) possesses all special certifications, licenses, inspections and permits required by law to carry out the Scope of Work contemplated in this Agreement. Engineer’s agents, employees, volunteers, and subcontractors, as applicable, shall maintain appropriate accreditation and licensing, as required, through the State of Texas or other applicable licensing entities. Prior to the performance of any services under this Agreement, Engineer shall, upon written (including electronic) request, provide proof of valid licensure to HCED (including a listing of all licenses and expiration dates).
- 3.3 Authorized to Conduct Business. Engineer represents that Engineer is authorized to conduct the business and carry out the Scope of Work contemplated in this Agreement. Prior to starting performance under this Agreement, Engineer shall, upon written (including electronic) request, provide proof to HCED of the authority to do business in this state or at the location specified in this Agreement.
- 3.4 Ability to Perform. HCED will award contracts only to the most highly qualified available responsible provider/contractor possessing the ability to perform successfully under the terms, conditions, and budget of a proposed procurement. Consideration will be given to such matters as provider integrity, compliance with public policy, record of past performance, and financial and technical resources. Engineer represents

that Engineer has the administrative, managerial, and financial capability to ensure proper planning, management and completion of the Scope of Work described in this Agreement and further has the administrative capacity and capabilities to carry out all duties and responsibilities under this Agreement.

- 3.5 Conflict of Interest Certification. Pursuant to Chapter 176 of the Texas Local Government Code, Engineer certifies that Engineer has completed any required conflict of interest disclosures or questionnaires (see www.ethics.state.tx.us). If this certification is materially incomplete or inaccurate, Engineer acknowledges that County shall have the right to terminate this Agreement without prior notice.
- 3.6 Certificate of Interested Parties Form 1295. Engineer certifies that it has accurately completed and submitted a notarized Certificate of Interested Parties Form 1295 ("Form 1295") in accordance with Texas Government Code §2252.908 and the rules adopted thereunder. Engineer acknowledges that it is responsible for making any and all necessary updates and/or corrections to the applicable Form 1295 during the term of this Agreement. Engineer must either (1) mail the completed Form 1295 to the Harris County Engineering Department at 1111 Fannin Street, 11th Floor, Houston, TX 77002, Attn: Administrative Services or (2) submit the form by email to HCEDAdminSvc@hcpid.org.
- 3.7 Disbursements to Persons with Outstanding Debt Prohibited. Engineer certifies, by execution of this Agreement, that neither Engineer nor any of Engineer's principals owe any debts as defined in Local Government Code Section 154.045 (including delinquent property taxes). Engineer understands that certain disbursements are prohibited and that County may apply any funds due to Engineer under this Agreement to any outstanding balance of certain debts pursuant to Section 154.045. If this certification is inaccurate, County may also terminate this Agreement. In addition, Engineer hereby assigns any payments under this Agreement to the Harris County Tax Assessor-Collector for the payment of any current or future delinquent taxes.
- 3.8 Internet Access. Engineer shall maintain appropriate internet access, which will enable Engineer to access any secure online invoicing, reporting, or other web-based system designed for more efficient communication with HCED. As requested, Engineer shall submit required reports, invoices and related documents through an applicable secure internet site in a manner required to protect any confidential information submitted. Engineer shall review all instruction materials and/or attend all HCED provided training that is necessary for Engineer to properly utilize applicable web-based information systems.

4. SPECIFIC SCOPE OF WORK/SERVICES AND/OR DELIVERABLES

- 4.1 Specific work, products, services, licenses and/or deliverables. Engineer shall provide the work, products, services, licenses and/or deliverables required to be provided by Engineer and as set out in this Agreement and in Attachment A and all other referenced attachments incorporated in this Agreement (altogether referred to as the Scope of Work). The provisions in this Agreement labeled 'Scope of Services' or 'Scope of Work' shall take precedence over anything conflicting in any attached Engineer proposal or correspondence. Engineer shall submit any and all project-related documents and invoices through the cloud-based project management software utilized by HCED for planning and management of all projects using real-time project data.
- 4.2 Written Authorization. From time to time during the course of this Agreement, HCED may deliver to Engineer written (including electronic) authorization (sometimes referred to as a notice-to-proceed, task-order, work-order or job-order) for providing certain work, products, services, licenses and/or deliverables contemplated in this Agreement, which Engineer shall then perform in accordance with this Agreement. Engineer shall not begin or proceed to the next design phase of the Scope of Work until Engineer receives from HCED a written (including electronic) authorization to proceed. County shall have no obligation to pay for and Engineer shall have no obligation to provide any work, services, products, or deliverables not rendered in accordance with a prior written authorization as described by this Section. Engineer shall complete the services called for by the calendar days and by the deadlines specified in this Agreement, including exhibits and written authorizations.

5. ADDITIONAL AND SPECIAL REQUIREMENTS

- 5.1 Cooperation with Other Service Providers. County may engage the services of other service providers for work related to the work, products, services, licenses and/or deliverables in this Agreement. Engineer shall reasonably cooperate with such other service providers and will not commit or permit any act that may interfere with the performance of work by any other service provider.
- 5.2 Non-Assignability. Unless otherwise authorized in this Agreement, neither party shall assign, in whole or in part, any duty or obligation of performance under this Agreement without the express written permission of the other party, except that the express written permission of HCED shall be considered the permission of County. Such written permission will not be unreasonably withheld, unreasonably conditioned, or unreasonably delayed. However, with notice to HCED, Engineer may assign this Agreement to any affiliate of Engineer that controls, is controlled by, has resulted from a merger with, or is under common control with, Engineer if the assignee is at least as capable and qualified to provide the deliverables contemplated in this Agreement. This provision is not intended to restrict any assignment that is required by Section 9.406 of the Texas Business and Commerce Code.
- 5.3 Independent Contractor/Parties. County expects Engineer to meet the high standards set forth in this Agreement and looks to Engineer for results only. Unless otherwise required by law or regulation, County shall not direct the methods used to obtain those results, and Engineer shall perform the services as an independent contractor under the sole supervision, management, direction, and control of Engineer. As an independent contractor, Engineer will accept directions pertaining to the goals to be attained and the results to be achieved, as applicable, pursuant to this Agreement, but Engineer shall be solely responsible for the manner in which Engineer will perform the services under this Agreement. Any methods that might be discussed in any training sessions given by HCED are not mandatory unless specifically required in writing in this Agreement or by law. Engineer is not obligated to maintain any set, regular hours, nor to perform any set number of hours of service in fulfilling the obligations under this Agreement, unless otherwise specifically set out in this Agreement. This Agreement is not intended to create a joint enterprise, joint venture, business partnership, agency, franchise, or employment relationship, under Texas law. The personnel and staff of Engineer are independent contractors or employees of Engineer and shall not for any purposes be considered employees or agents of County. Engineer assumes full responsibility for the actions of any employees and agents while performing any services incident to this Agreement, and Engineer shall remain solely responsible for the supervision, daily direction, control and payment, if any, of salaries (including withholding of income and social security taxes), workers' compensation or disability benefits and like requirements and obligations.
- 5.4 Employee Retention. Engineer agrees to maintain the organizational and administrative capacity and capabilities to carry out all duties and responsibilities under this Agreement. The personnel Engineer assigns to perform the duties and responsibilities under this Agreement will be properly trained and qualified for the functions they are to perform. If specific qualifications are set forth in job descriptions required by the funding entity and/or in this Agreement, unless a written waiver is granted, Engineer shall only assign personnel with the required qualifications to fulfill those functions. Notwithstanding transfer or turnover of personnel, Engineer remains obligated to perform all duties and responsibilities under this Agreement without degradation and in accordance with the terms of this Agreement.
- 5.5 Significant Organizational Change Notification. Engineer shall notify County immediately and in advance of any significant organizational change that could affect Engineer's ability to carry out all duties and responsibilities under this Agreement, including any change of Engineer's name or identity, ownership or control, or payee identification number. Engineer shall also provide written notice to County within 10 working days of the change. Engineer shall provide ownership information to County immediately upon any such change.

- 5.6 Adverse Actions Reporting. Engineer shall inform HCED, in writing, of any concluded investigation of Engineer (including Engineer's agents, employees, volunteers, and subcontractors, as applicable, providing work, products, services, licenses and/or deliverables under this Agreement) that is conducted by or on behalf of a government entity or other licensing or accreditation entity (including any state board of examiners) and whose outcome included public censure or other public sanction (or any pending investigations, administrative actions, or lawsuits, that relate to the work under this Agreement or that could adversely affect any performance or obligation in this Agreement). If at any time a license of Engineer's agents, employees, volunteers, and subcontractors, as applicable, providing work, products, services, licenses and/or deliverables under this Agreement required to be maintained to fulfill the Commitments in this Agreement is suspended, revoked or is determined to be out of compliance in Texas or any other state, this Agreement may be terminated immediately without prior notice, at the option of HCED, effective the date of the suspension, revocation or non-compliance. Engineer is not entitled to receive payment for services that were performed by Engineer while the required license was suspended or revoked. Engineer agrees to immediately inform HCED, in writing, of any adverse professional review action that is taken by a professional association or society and that is based on the professional competence or professional conduct of Engineer's agents, employees, volunteers, and subcontractors, as applicable, providing work, products, services, licenses and/or deliverables under this Agreement. County may, at its sole option, terminate this Agreement, upon notice of such adverse professional review action.
- 5.7 Subcontracts. Unless otherwise explicitly set out in this Agreement, Engineer shall not enter into any subcontract for the work, products, services, licenses and/or deliverables under this Agreement unless, prior to any written authorization to proceed with work done in part by the subcontractor, Engineer has provided to HCED the qualifications of the subcontractor to perform and meet the standards of this Agreement. Engineer shall comply with all Texas Administrative Code and Texas professional licensing agency requirements for choosing any professionally-licensed subcontractor.
- 5.8 Professional Standards. Where specifically-applicable standards are not explicitly set forth in this Agreement, as someone with expertise in the field, Engineer must provide the work, products, services, licenses and/or deliverables in accordance with generally-accepted standards applicable to Engineer's profession or industry. Engineer and County agree and acknowledge that County is entering into this Agreement in reliance on the Engineer's competence and qualifications, as those were presented to County by Engineer with respect to professional services. Engineer shall at all times utilize the skill and attention to fully, timely, and properly render professional services for the development of The Project to final completion as set out in, or reasonably inferred from, the Scope of Work/Services. This shall be done in a manner utilizing the degree of care ordinarily used by licensed professionals performing similar services on projects of a similar nature and scope within the State of Texas. A professional engineer assigned by Engineer to manage the Scope of Work who is licensed to practice in the State of Texas shall be present and represent Engineer at meetings of any official nature concerning The Project, including, but not limited to, scope meetings, status meetings, pre-bid meetings, any pre-construction meetings and any construction meetings (for construction-related projects) with County staff and/or contractors, unless otherwise set forth in the Scope of Work or approved in writing by HCED.
- 5.9 County Procedures. To effectively perform the services stated above, Engineer must become familiar with various procedures, policies, data collection systems, and other information of County. Engineer shall adhere to all applicable County engineering guidelines, standards, and design criteria (see <http://www.eng.hctx.net>). HCED will assist Engineer in obtaining the information. Unless otherwise required by law, Engineer agrees to keep any sensitive information confidential and not disclose it to outside parties without first obtaining County's written authorization.
- 5.10 Ownership of Work Product. For the purposes of assigning ownership of Engineer work product, the work performed will be deemed, to the extent authorized by law, to have been done on a works-made-for-hire basis, as that term is understood in copyright law. In the event and to the extent that such works are determined not to constitute works-made-for-hire, Engineer hereby irrevocably assigns and transfers to County all right, title, and interest in such works, including, but not limited to, copyrights. County shall be the absolute and unqualified owner of all completed or partially-completed Engineer work product prepared pursuant to this Professional Services Agreement and shall have the same force and effect as if prepared by

County, including mylar reproductions, drawings, preliminary layouts, electronic documents and drawings, record drawings, sketches, plans, cost estimates, inventions, designs, computer input/output information, computer applications, software, firmware, computations, and other documents (including the original electronic file format). Engineer may retain one set of reproducible copies for Engineer's sole use in preparation of studies or reports for County only. Engineer is expressly prohibited from selling, licensing or donating such documents, or using such documents in the preparation of other work for any other client, without the prior express written permission of HCED. Engineer warrants that Engineer's work product will not in any way constitute an infringement or other violation of any copyright, trade secret, trademark, patent, invention, proprietary information, non-disclosure, or any other right of any third party, and Engineer will defend any claim, suit, or proceeding brought against County on the issue of infringement of any copyright by virtue of anything supplied by Engineer to HCED under this Agreement.

- 5.11 Trade Secrets. In connection with the work, products, services, licenses, Scope of Work, and/or deliverables provided under this Agreement, HCED may disclose to Engineer certain documents, data, and/or other information that is proprietary, confidential, or a trade secret (Trade Secrets). Engineer must not divulge or otherwise make unauthorized use of Trade Secrets or other protected information, procedures, or policies of HCED, any former employee, contractor, client, customer, or consultant, in the exercise of duties under this Agreement. Except to the extent authorized by a third party, neither Party shall copy, recreate, or use any proprietary information of a third party in the performance of services under this Agreement.
- 5.12 Nondisclosure and Confidentiality of Information. To the extent permitted by law, Engineer must keep confidential the contents of all discussions with local, state, and federal officials, as well as the contents of all local, state, and federal records and all other information obtained during performance under this Agreement. To fulfill Engineer's obligations under this Agreement, Engineer may be provided access to information, systems, operations, or procedures that are security sensitive or have been identified as confidential. This confidential information may include information from one of the government entity funding sources, such as a Texas or federal agency. Engineer and the person executing this Agreement on behalf of Engineer acknowledge that (a) access to this information (whether electronic, written or oral, formal or informal) is provided solely to Engineer for the purpose of discharging the duties in this Agreement, (b) premature or unauthorized disclosure of this information can irreparably harm the interests of County and may constitute a violation of state and/or federal law, and (c) the information may represent confidential or proprietary information, the release of which may be restricted or prohibited by law. Therefore, Engineer must (1) not access any information without express written authorization of HCED; (2) not copy, recreate, or use any information or document obtained in connection with this Agreement other than for the performance of this Agreement; (3) to the extent permitted by law, keep confidential the contents of all discussions with county, state, and federal officials, as well as the contents of all county, state, and federal records and all other information obtained during performance under this Agreement, unless authorized in writing by appropriate HCED officials; (4) not, except to the extent required by law, or necessary for the performance of this Agreement, release, disclose, reveal, communicate, impart or divulge any information or any summary or synopsis of the information in any manner or any form whatsoever to outside parties without the express written consent of HCED; (5) take all steps necessary to protect confidential information from disclosure to third parties and have a system in effect that must include a method to ensure the confidentiality of records and other information relating to any person according to applicable federal and state law, rules and regulations; (6) not reproduce, copy, or disseminate such confidential information, except to those who need to know such information and are obligated to maintain its confidentiality, including Engineer's partners, principals, representatives or employees as necessary to fulfill obligations under this Agreement; (7) notify HCED immediately of all requests for confidential information; and (8) immediately report to HCED all unauthorized disclosures or uses of confidential information.
- 5.13 Public Comment and Public Information Act. To the extent permitted by law, all contact with the news media, citizens of County, the State of Texas or other governmental agencies concerning The Project will be the responsibility of HCED. In the event Engineer is subject to the Texas Public Information Act, upon receipt of a written request for any information by Engineer developed in the performance of services under this Agreement, Engineer shall provide written notice to HCED of the request along with a copy of the

request, and give HCED the opportunity to respond to the request prior to any release by Engineer. Unless required by law, under no circumstances shall Engineer release any material or information developed in the performance of services under this Agreement without the express prior written permission of HCED.

- 5.14 Applicable Laws. Engineer shall comply (and assure compliance by Engineer's agents, employees, volunteers, and subcontractors, as applicable, providing work, products, services, licenses and/or deliverables under this Agreement) with all applicable state, federal, and local laws, ordinances, regulations, executive orders, rules, directives, standards, guidelines, and instructions relating to the work to be performed. Engineer shall immediately bring to County's attention any conflicts between any applicable state, federal, and local laws, ordinances, regulations, executive orders, rules, directives, standards, guidelines, and instructions relating to the work to be performed. If laws or regulations change and affect any provision of this Agreement, this Agreement shall be deemed amended to conform to those changes in the laws or regulations on the date such laws or regulations become effective. If any such changes (that occur after the effective date of this Agreement and that Engineer should not reasonably have anticipated) require significant changes or additions to the Scope of Work that were not contemplated by the Parties, the Parties shall negotiate in good faith for the purpose of creating reasonable and equitable written modifications to this Agreement.
- 5.15 Records Retention and Management. Engineer shall maintain complete, accurate, and readily accessible records that are necessary to document and support the fulfillment of the obligations in this Agreement, including performance, design, underlying calculations, and financial records, as well as a copy of this Agreement. Engineer shall maintain and make available for inspection the Records for a minimum of four (4) years following either the end of the federal fiscal year in which any obligations were performed under this Agreement or the termination date of this Agreement, whichever is longer (or longer if necessary to resolve any litigation, claims, financial management review, or audit findings).
- 5.16 Authority of Harris County Engineer. The Harris County Engineer ("County Engineer") shall decide any and all questions that may arise as to the interpretation of this Agreement and all questions as to the acceptable fulfillment of this Agreement by Engineer. It is mutually agreed by both Parties that the County Engineer shall act as referee between the Parties in all questions arising under the terms of this Agreement and that the decisions of the County Engineer shall be final and binding alike on all Parties. If agreed to in writing by Engineer and the County Engineer (or designee), Engineer and the County Engineer may make adjustments to the Scope of Work that do not destroy the purposes of this Agreement. In making the aforementioned adjustments to the Scope of Work, Engineer and the County Engineer may adjust any corresponding firm fixed or maximum prices that neither increase the maximum amount of funds that Commissioners Court has authorized to be encumbered nor destroy the purposes of this Agreement. Any of the aforementioned adjustments to the Scope of Work and/or corresponding adjustments to any firm fixed or maximum prices (collectively, "Adjustments") may be reflected by a written Special Amendment to the Scope of Work in this Agreement ("Special Amendment"). Nothing contained in this section shall be construed to authorize the County Engineer to alter, vary, or amend any of the terms or provisions of this Agreement, other than the aforementioned Adjustments. The County Engineer is authorized on behalf of the County to make Adjustments (as defined herein) and execute a corresponding Special Amendment without further action by Commissioners Court. The Harris County Auditor ("County Auditor") is authorized, without further action by Commissioners Court, to certify additional funding for any Adjustments upon execution of a Special Amendment by the County Engineer.
- 5.17. Foreign Terrorists Organizations. In accordance with Tex. Gov't Code Ann. Chapter 2252 Subchapter F, Engineer warrants and represents that, at the time of execution of this Agreement and for the duration of the Term of this Agreement and any Renewal Terms, Engineer does not appear on the Texas State Comptroller's list of companies known to have contracts with or provide supplies or services to a foreign terrorist organization.
- 5.18 Anti-Boycott. In accordance with Tex. Gov't Code Ann. § 2270.002, Engineer warrants and represents that it does not boycott Israel and agrees that it will not boycott Israel during the term of this contract.

6. INSURANCE

- 6.1 Coverage and Limits. During the Term of this Agreement and any extensions thereto, Engineer at its sole cost and expense shall provide insurance of such type and with such terms and limits as may be reasonably associated with this Agreement. As a minimum, Engineer shall provide and maintain the following coverage and limits:

- (a) Workers Compensation, as required by the laws of Texas, and Employers' Liability, as well as All States, United States Longshore & Harbor Workers Compensation Act and other endorsements, if applicable to the Project, and in accordance with state law.

Employers' Liability

(i)	Each Accident	\$1,000,000
(ii)	Disease – Each Employee	\$1,000,000
(iii)	Policy Limit	\$1,000,000

- (b) Commercial General Liability, including but not limited to, the coverage indicated below. This policy will provide coverage for personal and bodily injury, including death, and for property damage, and include an endorsement for contractual liability. Coverage shall not exclude or limit the Products/Completed Operations, Contractual Liability, or Cross Liability. Where exposure exists, County may require coverage for watercraft, blasting, collapse, explosions, blowout, cratering, underground damage, pollution, and other coverage. *County shall be named Additional Insured on primary/non-contributory basis.*

(i)	Each Occurrence	\$1,000,000
(ii)	Personal and Advertising Injury	\$1,000,000
(iii)	Products/Completed Operations	\$1,000,000
(iv)	General Aggregate (per project)	\$1,000,000

- (c) Professional Liability/Errors and Omissions, in an amount not less than One Million Dollars (\$1,000,000) per claim and in the aggregate.
- (d) Umbrella/Excess Liability in an amount not less than One Million Dollars (\$1,000,000) per occurrence and in the aggregate. *County shall be named Additional Insured on primary/non-contributory basis.*
- (e) Automobile Liability insurance to include Engineer's liability for death, bodily injury, and property damage resulting from Engineer's activities covering use of owned, hired, and non-owned vehicles, with combined single limit of not less than One Million Dollars (\$1,000,000) for each accident. *County shall be named Additional Insured on primary/non-contributory basis.*

- (f) Any other coverage required of Engineer pursuant to statute.

- 6.2 Delivery of Policies. Immediately upon execution of this Agreement and before any Services are commenced by Engineer, Engineer shall provide County evidence of all of the above coverage on forms and with insurers acceptable to County. Engineer must maintain a valid Certificate of Insurance as described herein on file with County at all times during the term of this Agreement. Engineer must either (1) mail the Certificate of Insurance to the Harris County Engineering Department at 1111 Fannin Street, 11th Floor, Houston, TX 77002, Attn: Administrative Services or (2) submit it by email to HCEDAdminSvc@hcpid.org.

- 6.2.1 Issuers of Policies. Coverage shall be issued by company(s) licensed by the Texas Department of Insurance to do business in Texas, unless said coverage is not available or economically feasible except through an excess or surplus lines company, in which case the company(s) should be registered to do business in Texas. Companies shall have an A.M. Best rating of at least A-VII.

- 6.2.2 Certificates of Insurance. Engineer shall provide unaltered Certificates of Insurance which evidence the required coverage and endorsements and satisfy the following requirements:
- (a) Be less than 12 months old;
 - (b) Include all pertinent identification information for the Insurer, including the company name and address, policy number, NAIC number or AMB number, and an authorized signature;
 - (c) Include the Project name and reference numbers and indicates the name and address of the Project Manager in the Certificate Holder Box; and
 - (d) Be appropriately marked to accurately identify:
 - (i) All coverage and limits of the policy;
 - (ii) Effective and expiration dates;
 - (iii) Waivers of subrogation, endorsement of primary insurance and additional insured language, as described herein.
- 6.2.3 Certified Copies of Policies and Endorsements. Upon request, Engineer shall furnish certified copies of insurance policies and endorsements to County.
- 6.2.4 Renewal Certificates. Renewal certificates are due to County at least thirty (30) days prior to the expiration of the current policies.
- 6.2.5 Subcontractors. If any part of the Agreement is sublet, insurance shall be provided by or on behalf of any subcontractor, and shall be sufficient to cover their portion of the Agreement. Engineer shall furnish evidence of such insurance to County as well.
- 6.3 Additional Insured. Engineer shall include County and its respective officers, directors, agents, and employees as an Additional Insured on the Commercial General Liability, Automobile Liability, and Umbrella/Excess Liability insurance certificates. Engineer's coverage shall be primary insurance to any similar insurance maintained by County and must contain an endorsement stating such. Coverage to County as an Additional Insured on any of Engineer's insurance coverage shall not be subject to any deductible.
- 6.4 Deductibles. Engineer shall be responsible for and pay any claims or losses to the extent of any deductible amounts applicable under all such policies and waives any claim it may have for the same against County, its officers, directors, agents, or employees.
- 6.5 Claims-made Policies. All insurance policies written on a claims-made basis, including Professional Liability/Errors and Omissions, shall be maintained for a minimum of two (2) years following completion of all services under this Agreement ("Extended Reporting Period"). Engineer shall obtain or maintain full prior acts coverage at least to the effective date of this Agreement in the event of a carrier or policy change.
- 6.6 Waiver of Subrogation. Engineer waives any claim or right of subrogation to recover against County, its officers, directors, agents, and employees ("Waiver of Subrogation"). Each policy required under this Agreement must contain a Waiver of Subrogation endorsement.
- 6.7 Notice of Cancellation, Non-Renewal, or Material Change. Engineer shall provide County with thirty (30) days' minimum written notification in the event of cancellation, non-renewal, or material change to any or all of the required coverage.
- 6.8 Remedies for Noncompliance. Failure to comply with any part of this Section is a material breach of this Agreement. Engineer could immediately, and without notice, have all compensation withheld or suspended, be suspended from providing further Services, or be terminated from this Agreement for any lapse in coverage or material change in coverage which causes Engineer to be in noncompliance with the requirements of this Section.

7. FUNDING, COMPENSATION AND/OR BASIS FOR PAYMENT, METHOD, AND LIMITATIONS

- 7.1. Payments/Compensation. For and in consideration of the work, products, services, licenses or deliverables provided under this Agreement and during the term of this Agreement, subject to the limitations in this Agreement, County shall pay Engineer in accordance with the fee schedule and rates specified in this Agreement, including in the Attachments up to the total maximum amount specifically appropriated, encumbered, and then certified as available by the County Auditor.
- 7.2. Funding and Appropriations Limit. County shall have no obligation to pay for and Engineer shall have no obligation to provide any work, products, services, licenses and/or deliverables until sufficient funds are certified by the County Auditor. County intends to initially appropriate, encumber, and certify as available by the County Auditor the total maximum sum of **NINE HUNDRED NINETY-SEVEN THOUSAND EIGHT HUNDRED THIRTY-SEVEN AND 30/100 DOLLARS (\$997,837.30)** to pay and discharge any and all liabilities that County may incur arising out of this Agreement. Any other provision notwithstanding, County shall never be liable to pay Engineer any greater amount under this Agreement than is specifically appropriated, encumbered, and then certified as available by the County Auditor.
- 7.3. Auditor's Certification of Funds. The issuance of a purchase order pursuant to this Agreement represents certification by the Harris County Auditor that funds, in the amount of the purchase order total, are available to satisfy all financial obligations of Harris County hereunder.
- 7.4. Funding Out/Non-Appropriation. It is further understood that pursuant to Local Government Code Chapter 111, when and if the work, products, services, licenses and/or deliverables and charges provided for herein are equal to or exceed the amounts certified available, Engineer is authorized to terminate some or all of Engineer's work, products, services, licenses and/or deliverables under this Agreement unless the County Auditor certifies that additional funds are available, in which event Engineer agrees to continue to provide the products, services and/or deliverables to the extent funds are available. When all the funds certified by the County Auditor, together with any additional funds thereafter certified, are expended, County will have no further liability, and the sole and exclusive remedy of Engineer will be to immediately terminate this Agreement unless the County Auditor certifies additional funds.
- 7.5. Billing Statements/Invoices. Unless otherwise indicated in this Agreement, no later than the 10th day after the end of each calendar month within the term of this Agreement, Engineer shall submit to HCED a billing statement or invoice for all unpaid products, services and/or deliverables, along with any applicable rates, including the applicable firm fixed price and any applicable percentage completed for specific tasks/deliverables as specified in this Agreement. The data in the billing statement or invoice must be in a format designated by HCED and the County Auditor, and must include any purchase order number. An authorized agent of Engineer must certify and swear under penalty of perjury that the work was performed, the work was properly authorized in writing by HCED, and all information contained in the statement or invoice is true and correct. All products, services and/or deliverables billed must be rendered during this Agreement term. Engineer shall submit to HCED billing statements or invoices limited to work done and products, services and/or deliverables provided pursuant to this Agreement, and Engineer shall not include in such billing statements or invoices any work, products, services, licenses and/or deliverables provided, required to be performed, or billed under or pursuant to any other agreements with County. HCED will review each statement or invoice and approve it with any modifications HCED deems appropriate after mutual consultation and agreement with Engineer. HCED will then forward the approved statement or invoice to the County Auditor for payment. County will pay Engineer the proper amounts due and owing under this Agreement within thirty (30) calendar days of receipt of the approved statement or invoice to extent allowed by law. Each statement or invoice must include a monthly inventory of work, products, services, licenses and/or deliverables provided during the billing period and any other details HCED reasonably requests for verification purposes, which might include:
- (a) The date(s) work, products, services, licenses and/or deliverables were provided;
 - (b) Meetings and lists of attendees, if applicable;
 - (c) Detailed description of the work, products, services, licenses and/or deliverables provided;

- (d) The total amount billed, and any other details of the work, hours, or services as may be requested by the County Auditor;
 - (e) If applicable, the case number for which services were performed;
- 7.6. Overpayments. Within 10 calendar days after request by HCED, Engineer must reimburse to County all funds paid by County to Engineer that any funding entity or auditor determines have been improperly paid to, or expended by, Engineer. County may withhold, suspend, or reduce any and all payments due to Engineer until any overpayments are reimbursed.
- 7.7. Costs of Substitute Services. If Engineer fails to perform any of its obligations under the Agreement and County procures substitute services upon such terms as are appropriate, County shall deduct the reasonable costs for such services from any payments owed to Engineer under this or other agreements. Engineer must reimburse to County, within thirty (30) calendar days after request by County, any additional costs of such substitute services beyond what has already been deducted by County. County may also withhold, suspend, or reduce payments due to Engineer until the costs of such substitute services are reimbursed to County by Engineer. This provision is not intended to waive or preclude any other remedies the parties may otherwise have in law, equity, or elsewhere in this Agreement and is in addition to and not in lieu of any other remedies.
- 7.8. Billing Audits. County and its designee shall have the right to examine and audit all of Engineer's billings/invoices and all of Engineer's backup and support data for billings/invoices for this Agreement. Upon HCED's request, Engineer agrees to make such data and supporting documentation available to the County Auditor or designee in Harris County, Texas. Engineer shall maintain complete and accurate records necessary to fulfill any obligations in this Agreement, including a copy of this Agreement, including detailed time records identifying each person performing services that were billed on an hourly basis, the corresponding dates of the services, the applicable firm fixed price and the percentage completed for specific tasks as specified in this Agreement, any applicable hourly or cost-plus rates, the total amount billed for each person as applicable, and the total amount billed for all persons as applicable. Engineer shall maintain and make available for inspection (electronically or in Harris County during regular business hours) the Records for a minimum of four (4) years days following either the end of the federal fiscal year in which any obligations were performed under this Agreement or the termination date of this Agreement (or longer if necessary to resolve any litigation, claims, financial management review, or audit findings). All payments made by County are subject to re-evaluation and refund or withholding of future payments conditioned on the results of the audit.
- 7.9. County Auditor to Make Final Decision. The decision of the County Auditor as to the amount owed shall be final if there is any dispute between County and Engineer as to the amount owed to Engineer for any monthly statement or invoice submitted by Engineer. County agrees to notify Engineer of any questionable item and is authorized to withhold payment until all questions are resolved either by final audit or by agreement of the Parties.

8. TERM OF THE AGREEMENT

- 8.1 Time Period. The time period for performance ("Term") of this Agreement shall begin September 27, 2022 and end on the later date of (a) Project completion or (b) September 26, 2023.

9. TERMINATION PROVISIONS

- 9.1 Determination of Material and Non-Material Breaches. The County Engineer shall determine whether a breach of this Agreement by either Party is material or non-material. The County Engineer's determination shall be final and binding alike on all Parties.
- 9.2 Non-Material Breaches. If either Party refuses or fails to perform any of its non-material obligations in this Agreement, the other Party may give written notice of the failure. If the breaching Party fails or refuses to cure the failure of any non-material obligation in the notice within ten (10) calendar days after notice is

given, the other Party may terminate this Agreement immediately. HCED is authorized to give notice for County.

9.3 Material Breaches.

9.3.1 Suspension. HCED may suspend this Agreement immediately for any material breach by giving a notice of suspension. As soon as the notice of suspension is received, Engineer shall discontinue all services in connection with the performance of this Agreement. HCED is authorized to suspend on behalf of County.

9.3.2 Termination. The County may terminate this Agreement for a material breach at any time by notice in writing to the Engineer.

9.4 No Waiver of Remedies. The provisions in this Section are not intended to waive or preclude any other remedies the parties may otherwise have in law, equity, or elsewhere in this Agreement. The right to terminate for a material and non-material breach is in addition to and not in lieu of any other remedies.

9.5 Termination Statement. As soon as practicable after receiving notice of termination, Engineer must submit a statement or invoice to HCED that complies with the requirements in this Agreement. This statement or invoice must show in detail the unbilled/uninvoiced services performed for County under this Agreement to the date of termination. If the payments were to be made in lump sums and services were rendered after the last lump sum payment, the statement or invoice shall reflect the prorated amount due.

9.6 Return of Documents after Termination. If permitted by law and any established ethical requirements applicable to specific professionals, Engineer shall promptly deliver to HCED all completed or partially completed work product, designs, data, information, and documents prepared under this Agreement on behalf of County. Within 2 business days after the effective date of termination, Engineer shall return to HCED all records, files, documents, notes and other items in Engineer's possession, if any, relating to any assignments or work that Engineer has undertaken or been given under this Agreement, if permitted by law and any established ethical requirements applicable to specific professionals. Engineer shall deliver to HCED all completed or partially-completed designs, drawings and specifications prepared under this Agreement, including the original electronic file format. Nothing in this section is intended to require Engineer to surrender Engineer's own records to HCED after termination.

9.7 Agreement Transition. In the event the Agreement ends by either expiration or termination, Engineer shall, at the request of the County, assist in the transition until such time that a replacement engineer can be named. Engineer acknowledges its responsibility to cooperate fully with the replacement engineer and the County to ensure a smooth and timely transition to the replacement engineer. Such transitional period shall not extend more than ninety (90) days beyond the expiration/termination date of the Agreement, or any extension thereof. During any transition period, all other terms and conditions of the Agreement shall remain in full force and effect as originally written.

10. INDEMNIFICATION

10.1 No Waiver of Governmental Immunity. County does not waive any immunity or defense on behalf of itself, its employees or agents as a result of the execution of this Agreement.

10.2 General Indemnity. To the extent allowed by law, Engineer agrees to indemnify and hold harmless County, HCED, their officers, employees, and agents from liability, losses, expenses, demands, reasonable attorneys' fees, and claims for bodily injury (including death) and property damage to the extent caused by the negligence, intentional tort, intellectual property infringement of Engineer (including Engineer's agents, employees, volunteers, and subcontractors/consultants under contract, or any other entity over which Engineer exercises control, in the performance of the services defined in this Agreement). Engineer shall also save County harmless from and against any and all expenses, including reasonable attorneys' fees that might be incurred by the County, in litigation or otherwise resisting such claims or liabilities.

11. MISCELLANEOUS

- 11.1 Notices. Any notice required to be given under this Agreement ("Notice") may be given by hand delivery or certified United States Mail, postage prepaid, return receipt requested, addressed to the Parties at the following:

ENGINEER: David Sadeghpour, P.E.
President
Scientech Engineers, Inc.
701 Shepherd Dr, Ste 200
Houston, TX 77007-5593
Email: DSadeghpour@sci-eng.com

COUNTY: Dr. Milton Rahman, PhD, P.E., PMP, CFM, ENV SP
Executive Director & County Engineer
Harris County Engineering Department
1111 Fannin Street, 11th Floor
Houston, TX 77002
Email: AgreementInfo@hcpid.org

All other communications may be sent by electronic means or in the same manner as Notices described herein.

- 11.2 Receipt of Notice. Notice shall be considered given and complete upon successful electronic transmission or upon deposit in the United States Mail.
- 11.3 Change of Address. Each Party shall have the right to change its respective address by giving at least ten (10) days' written notice of such change to the other Party.
- 11.4 Force Majeure. Neither Party will be liable for any failure or delay in performing its obligations under this Agreement if such failure or delay is due to any cause beyond the reasonable control of such Party if such cause is generally recognized under Texas law as constituting impossible conditions. The existence of such causes of delay or failure will extend the period of performance in the exercise of reasonable diligence until after the causes of delay or failure have been removed. Each Party must inform the other in writing with proof of receipt within 10 business days of the existence of such Force Majeure event or otherwise waive this right as a defense.
- 11.5 E-Mail Addresses. Engineer affirmatively consents to the disclosure of e-mail addresses that are provided to County or HCED. This consent is intended to comply with the requirements of the Texas Public Information Act, Texas Government Code § 552.137, and shall survive termination of this Agreement. This consent shall apply to e-mail addresses provided by Engineer and any agents acting on Engineer's behalf and shall apply to any e-mail address provided in any form for any reason, whether related to this Agreement or otherwise.
- 11.6 Entire Agreement (Merger). This Agreement contains the entire agreement and understanding between the parties relating to the rights granted to and the obligations of the parties. All prior negotiations, discussions, correspondence and previous understandings are superseded by this Agreement. Any oral representation or modification concerning this Agreement shall be of no force or effect.
- 11.7 No Oral Modifications. Unless otherwise explicitly stated in this Agreement, this Agreement cannot be changed except by a written subsequent modification authorized by all parties.
- 11.8 Inducements. In making the award of this contract, County relied on Engineer's assurances and representations made in this Agreement. Any false assurances and representations by Engineer shall be immediate grounds for termination of this Agreement without prior notice at the option of County.

- 11.9 Contract Construction. The titles assigned to the various Articles of this Agreement are for convenience. Titles shall not be considered restrictive of the subject matter of any Article or other part of this Agreement. Likewise, the provisions of purpose in this Agreement are intended to be a general introduction and are not intended to expand the scope of the Parties' obligations or alter the plain meaning of the terms and conditions in this Agreement.
- 11.10 Ambiguities. Ambiguities, if any, shall not be interpreted against the drafter of this Agreement.
- 11.11 No Waiver of Default. Any waiver by either Party of one or more defaults on the part of the other Party in the performance of obligations under this Agreement is not a waiver of any subsequent defaults.
- 11.12 Remedies Cumulative. Unless otherwise specified elsewhere in this Agreement, the rights and remedies of County are not exclusive, but are cumulative of all rights and remedies that exist now or in the future.
- 11.13 No Third Party Beneficiaries. Unless explicitly provided in this Agreement, there is no intent by either Party to create or establish third party beneficiary status or rights in any third party, and no such third party shall have any right to enforce any right or enjoy any benefit created or established under this Agreement.
- 11.14 Non-Exclusivity. Unless explicitly provided in this Agreement, nothing shall prevent either Party from contracting with other parties for the provision of the same or similar services or deliverables that are contemplated by this Agreement.
- 11.15 Limited Personal Liability. Nothing in this Agreement shall be construed as creating any personal liability on the part of any officer, director, employee, or agent of County.
- 11.16 Dispute Resolution Process. The Parties will meet and confer in good faith to work together to resolve problems or disputes that may arise. In the event a dispute arises between the parties involving the provisions or interpretation of any term or condition of the Agreement, and if both parties desire to attempt to resolve the dispute prior to termination or expiration of the Agreement, or withholding payments, then the parties may refer the issue to a mutually-agreeable dispute resolution process.
- 11.17 Survivability Clause. Any provision, section, subsection, paragraph, sentence, clause or phrase of this Agreement that, by its plain meaning, is intended to survive the expiration or earlier termination of this Agreement, including indemnification provisions, shall survive such expiration or earlier termination. If an ambiguity exists as to survival, the provision shall be deemed to survive.
- 11.18 Savings/Severability Clause. If any provision, section, subsection, paragraph, sentence, clause or phrase of this Agreement, or the application of same to any person or set of circumstances, is held to be invalid, void, or unenforceable by a court of competent jurisdiction, that part of this Agreement shall be reformed, if reasonably possible, to comply with the applicable provisions of law. In any event, the remaining provisions the same shall continue in full force and effect, provided that the unenforceable or invalid provision is not material to the overall purpose and operation of this Agreement. If necessary in order to make this Agreement valid and enforceable, the Parties shall meet to confer upon an amendment or modification.
- 11.19 Time is of the Essence. Time is of the essence with respect to Engineer's performance under this Agreement, and Engineer shall perform all services diligently until completed.
- 11.20 Choice of Law. This Agreement shall be construed according to the laws of the State of Texas without giving effect to its conflict of laws provisions. Venue lies only in Harris County as per Texas Civil Practice and Remedies Code Sec. 15.015, and any alternative dispute resolution, suit, action, claim, or proceeding with respect to or arising out of this Agreement must be brought solely in the courts or locations that are situated in the State of Texas, County of Harris. Both parties irrevocably waive any claim that any proceeding brought in Harris County has been brought in an inconvenient forum.

11.21 Exhibit List. The following attachments are a part of this Agreement:

- Exhibit A. Scope of Services
- Exhibit B. Schedule
- Exhibit C. Compensation for Professional Services
- Exhibit D. Engineer Team Acknowledgments

11.22 Tax Exemption. Pursuant to Texas Tax Code §151.309, as a political subdivision, County claims exemption from sales and use taxes and will provide exemption certificates upon written request. County shall not be liable to reimburse or pay any personal property taxes, charges, or fees assessed against Engineer.

11.23 Electronic or Facsimile Signatures and Duplicate Originals. Pursuant to the requirements of the Uniform Electronic Transactions Act in Chapter 322 of the Texas Business and Commerce Code and the Federal Electronic Signatures in Global and National Commerce Act (beginning at 15 U.S.C. Section 7001), the Parties have agreed that the transactions under this Agreement may be conducted by electronic means. Pursuant to these statutes, this Agreement may not be denied legal effect or enforceability solely because it is in electronic form or because it contains an electronic signature. This Agreement may be executed in duplicate counterparts and with electronic or facsimile signatures with the same effect as if the signatures were on the same document. Each multiple original of this document shall be deemed an original, but all multiple copies together shall constitute one and the same instrument.

11.24 Signatory Authorized to Execute Agreement. The person executing this Agreement on behalf of each Party represents that he or she is duly authorized by the policy of the Party's governing body to legally obligate and execute this Agreement on behalf of the Party.

HARRIS COUNTY

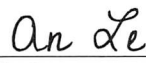
By: _____
Lina Hidalgo
Harris County Judge

SCIENTECH ENGINEERS, INC.

By:  _____
David Sadeghpour, P.E.
President

APPROVED AS TO FORM:

CHRISTIAN D. MENELEE
Harris County Attorney

By:  _____
An Le
Assistant County Attorney
CAO File Number 22GEN3320

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

SCOPE OF WORK

Road Name: Navigation Boulevard

Road Classification: P-Principal Thoroughfare

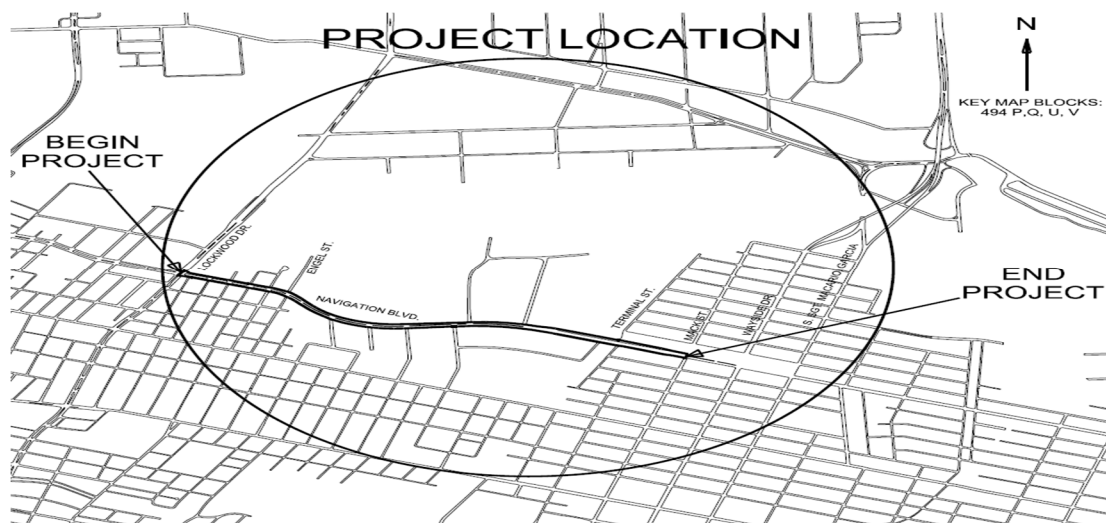
Project Limits: Lockwood to Mack Street

Project Length: 1.0 miles

Precinct Number: 2

Adjacent/Affected Agencies: City of Houston, Buffalo Bayou Partnership

Project Map:



This project is a partnership of Harris County Precinct 2 and Buffalo Bayou Partnership (BBP) to reconstruct the existing Navigation Boulevard from Lockwood to Mack Street. The project length is approximately one (1) mile long within City of Houston ROW. Existing road is 4-8 lane divided concrete curb and gutter road with asphalt overlay, with storm sewer trunk lines and inlets, in varying ROW between 80 to 120 ft. There are no signalized intersections, one school, medians with mature trees. Street lights are on utility poles and some on standalone poles. There are no dedicated bike routes along project limits. The infrastructure is old and deteriorating. Land usages vary from mostly commercial and industrial with some residential. BBP owns a building on Navigation and land at Turkey Bend with future plans for recreational areas as part of their master plan for East End revitalization.

The intent of proposed improvements for Study phase are listed below:

- Evaluate the existing pavement and make recommendation for reconstruction
- Study the addition of a mixed-use trail/bikeway along the project limits with three alternatives and evaluation of each (placed at south, north or in middle of the road) including estimated costs for each alternative. Provide a recommendation to move forward into Design Phase
- Study and recommend the creation of additional green spaces
- Coordinate with City of Houston planned improvements at Lockwood intersection
- Make improvements within existing ROW except when corner clips may be needed
- Perform traffic studies and Warrant Study at Norwood Street

- Recommend drainage improvements within ROW only with existing outfalls staying intact. Adjacent neighborhood drainage improvements are excluded from scope
- We have assumed that METRO stops stay as they are and no upgrades, Floating Bus Stops, etc. will be used on this corridor
- We have assumed the bridge over RR will stay in place (no replacement)
- We will provide presentation material, in PDF or PowerPoint for Public Involvement led by our team.

Conditions:

	Existing	Proposed
Roadway	Concrete Curb and gutter with asphalt overlay	Concrete curb and gutter with asphalt overlay (Reconstruction)
ROW Width	80 to 120 ft	80 to 120 ft- as existing
Travel Lanes	3-4 Lanes each direction. 6-8 lanes total	2-3 Lanes Each direction. 4-6 lanes total
Median	Varies- Mostly 10 ft typical	18 ft typical
Cross Streets	<p>Thru Cross Streets LOCKWOOD DR. N. STILES ST. N. BRYAN ST. N. ADAMS ST. N. EDGEWOOD ST. ENGEL ST. N GREENWOD ST. (bet.ⁿ Engel & Baywood) N GREENWOD ST. (bet.ⁿ N. Norwood & Mcfarland) MACK ST.</p> <p>Non-Thru Cross Streets N. BURR ST. BAYWOOD ST. PORTWOOD ST. N. NORWOOD ST. McFARLAND ST.</p>	<p>Thru Cross Streets LOCKWOOD DR. N. STILES ST. N. BRYAN ST. N. ADAMS ST. N. EDGEWOOD ST. ENGEL ST. N GREENWOD ST. (bet.ⁿ Engel & Baywood) N GREENWOD ST. (bet.ⁿ N. Norwood & Mcfarland) MACK ST.</p> <p>Non-Thru Cross Streets N. BURR ST. BAYWOOD ST. PORTWOOD ST. N. NORWOOD ST. McFARLAND ST.</p>
Drainage System	Storm Sewer trunk lines with inlets	Storm Sewer trunk lines with inlets
Outfalls	Buffalo Bayou	Buffalo Bayou
Detention Method	N/A	In-line Detention- Off site detention
Bridge	None	None
Traffic Signals	Lockwood	Lockwood Norwood (Pending Warrant Study)

Left Turn Lanes	LOCKWOOD	same as existing
Right Turn Lanes	ENGEL ST.	Pending Study
Sidewalks or Trails	~4-ft wide, WB and EB from Lockwood to	5 ft wide, WB and EB from Lockwood to Mack
Bike Lanes	Shared bike lanes from Lockwood to S Sgt Macario Garcia	Pending Study
Impacted Parcels	N/A	20
Railroad crossings	None	None
Pipeline Crossings	2 CenterPoint Gas Lines	same as existing
Street Lights and Pedestrian Lights	Combination of utility pole mounted and standalone light poles- No pedestrian lights	Combination of utility pole mounted and standalone light poles- Add pedestrian lights

A. Project Management

Engineer shall provide the project management of the project from initiation to completion.

1. Coordination with Sub-Engineers

Coordinate, monitor and manage the project sub-engineers per determined project duration. The Prime shall ensure all components in the Scope of Work are being met by monitoring progress and taking corrective action when necessary.

2. Schedule

Provide a detailed project baseline schedule, indicating milestones, major activities and deliverables for HCED Project Manager to review and comment as part of proposal submittal. The schedule shall reflect assumed review times necessary by the agency/ies involved. During the execution of the project the Engineer shall maintain and update the schedule. Adjustments shall be made, if necessary, due to changing circumstances.

3. Risk Management

Prepare a risk assessment summary that identifies technical, schedule and resource risks that could jeopardize the agreed upon scope, schedule, and cost. A risk plan shall be developed which shall identify tasks, sorted from highest to lowest priority that the Engineer shall manage to reduce risk to an acceptable level.

4. Status Reports

Prepare status reports of project progress and submit to HCED by the end of the month regardless of invoicing submittals.

5. Invoices

Engineer shall submit, in a format acceptable to HCED, invoices that detail all project costs based on percentage of completion for each task and Cash Flow Spreadsheet and submit to HCED by the end of the month.

6. Permits and Agreements (Interlocal, Utility, Railroad, etc.)

Engineer shall review, comment, and provide Interpose No Objection (INO) letters or Agreement documentation as required.

Deliverables: Updated Project Schedule; Risk Assessment Summary and Risk Plan; Cash Flow Spreadsheet, Project Status Report, and Invoices; Interpose No Objection letters; Agreement Documents

2.P STUDY PHASE

The Study Phase shall consist of a series of Engineering studies and technical reports to support the Study Report. Engineer shall perform all Study Phase outlined tasks in accordance to all adopted Harris County standards, guidelines, and specifications.

The Scope of Work for the Study Phase:

A. Alignment Study

Engineer shall evaluate alignment options using the current Harris County Geometric Design Guidelines. Engineer shall optimize their findings by evaluating alignment impacts to existing structures such as signals, utilities and property, environmental impacts, ROW acquisitions costs, and impacts to existing and proposed drainage. The Engineer shall review specific scoping items for preparation of the Drainage Meeting at the end of the Alignment Meeting. A value analysis/Engineering of the top 3 options (if applicable) shall be presented to HCED at the Alignment Meeting.

Once the alignment is approved by the Precinct, the Engineer may proceed with the Sight Triangle Analysis at all cross streets (refer to Traffic section).

Alignment Meeting Deliverables:

- 34" Wide Roll Plot (Plan View at a 1" = 40' scale) containing the following information:
 - Alignment alternatives with horizontal alignment data
 - Curve data on the schematic
 - Proposed planimetrics (back of curb, medians, median openings, turn lanes, etc.). All subject to change in the design phase.
 - Aerial photography
 - Existing ROW
 - Potential proposed ROW
 - Proposed clearances to structures
 - Outfall structures and channel crossings
 - Typical section(s) of the proposed design
 - Construction costs
- KMZ of project with alignment alternatives provided to HCED prior to the meeting.
- Meeting agendas, meeting minutes and action items for each meeting in electronic format submitted to HCED prior to distribution.

DRAINAGE

The drainage design shall be completed under the latest approved version of the guidelines of the HCFCF Policy Criteria & Procedure Manual.

Guidelines and Specifications

- *Harris County Flood Control District (HCFCF) Policy, Criteria and Procedures Manual (PCPM) Interim Guidelines and Criteria for Atlas 14 Implementation, July 2019 (or later version if applicable)*
- *HCFCF PCPM (July 2019 Interim Version), Appendix A-10 - Roadway Impacts and Mitigation Example*
- *HCFCF Memorandum dated October 21, 2019 – Roadway Detention Estimates with Atlas 14 Rainfall Updates, PCPM Appendix A, Example A.10.*
- *HCFCF Memorandum dated March 19, 2020 – Review of Conditional letters of Map Revision (CLOMRs) for Harris County Bridge Projects*
- *HCFCF Hydrology & Hydraulics Guidance Manual (HHGM), December 2009 (or later version if applicable).*
- *Other local references as applicable.*

2D.400 Drainage Report

All work shall be in accordance with Atlas 14 Data.

A. Data Collection and Coordination

1. Collect and review pertinent and available information on the project, any previous analyses and models, the project site, and the surrounding region. Obtain and review LIDAR topographic data from Houston-Galveston Area Council. Obtain and review as-built construction drawings of the project area. Review topographic survey and wetland data and obtain M3 Models of the watershed and available models of HCFCF Units (**G100-00-00**) if necessary.
2. Field Scoping Meeting – Visit the project site to observe and document the condition of drainage facilities and existing drainage infrastructure.
3. Coordinate as necessary with team members or other agencies including HCFCF Watershed Management Department to understand and address any additional or special requirements based on the project location.
4. Collect digital files of the hydrologic and hydraulic models, and any available previous study in the vicinity of project site. Obtain and review as built plans for the existing roadways in the vicinity of project site.
5. Determine the proper methodology to use for the project based on the complexity of the project and location in the watershed. Typical methodologies include the Rational Method, the Optional Project Routing Method, or the Watershed Modeling Method.

B. Pre-Project Conditions Analysis

1. Develop pre-project conditions drainage area map. Ensure offsite areas affecting the project are included in the analysis.

EXHIBIT A

2. Calculate pre-project conditions impervious cover for drainage areas serving the project as well as offsite drainage areas that may affect the project.
3. Calculate pre-project time of concentration using velocity-based methods appropriate for the types of sheet flow and conveyance systems present in the pre-project condition or using the City of Houston time of concentration equation.
4. Calculate peak flows the 2-, 10-, and 100-year storm events and the 500-year storm event if applicable (see HCFCD PCPM for when the 500-year calculation is necessary) at existing outfalls of the project site utilizing methodology appropriate for project scope and drainage area size.
5. Create a pre-project conditions hydrograph for each storm event at each outfall included in the analysis.

C. Post-Project Conditions Analysis

1. Modify pre-project drainage area map as necessary to reflect post-project conditions.
2. Calculate post-project conditions impervious cover for drainage areas serving the project offsite drainage areas that may affect the project. Treat the full ROW width as impervious cover for the drainage calculations.
3. Calculate post-project time of concentration using velocity-based methods appropriate for the types of sheet flow and conveyance systems present in the post-project condition or using the City of Houston time of concentration criteria.
4. Calculate peak flows for the post-project condition at the outfalls of the project site utilizing the same methodology and approach as the pre-project condition.
5. Create a post-project conditions hydrograph at each outfall included in the analysis for each storm event included in the analysis.
6. Calculate a preliminary estimate of floodplain fill that will be generated by the project using available topographic data.

D. Mitigation Alternatives

1. Estimate detention storage necessary at project outfall(s) by comparing pre- and post-condition hydrographs and adding floodplain fill mitigation volume if necessary.
2. Prepare a schematic layout of a minimum of three (3) distinct alternatives to provide the required detention storage to mitigate project impacts. Typical information includes mitigation footprint (basin, upsized pipes, LID, etc.), outfall size, total volume provided (minus freeboard requirement) and estimated right-of-way.
3. Prepare a draft Detention Alternatives client presentation (PPT) for review by HCED PM. Respond to comments and prepare final presentation.
4. Present alternatives and respond to Client comments.

E. Selected Alternative Analysis and Report

1. Based on Client selection, refine the mitigation estimate for the selected alternative by verifying assumptions included in the preliminary mitigation estimate, incorporating offsite sheet flow (if applicable), the proposed roadway profile, proposed conveyance (trunkline sewers/ditches, etc.), floodplain fill mitigation, and any other project condition in the analysis.

2. Route the post-project flows through the basin to fully design the basin outfall for the required storm events. Ensure that the analysis and layout of the basin meets HCFCD requirements and ensures no adverse impact from the project.
3. Prepare a preliminary drainage report for HCFCD review in accordance with HCFCD PCPM Section 19. Format report and all models and other attachments for electronic submittal via e-permits.
4. Respond to HCFCD and COH and/or HCFCD comments and resubmit report as necessary to obtain report approval ("interpose no objection") from HCFCD.

Deliverable: Approved Drainage Report

B. Drainage Study

Engineer shall evaluate the drainage design needs for the identified three roadway alternatives, addition of 15-foot share used path on left-side of roadway, on right-side of roadway and in median, following the latest adopted City of Houston guidelines and standards. This includes preliminary trunkline sizing and preliminary estimation of the detention needs, following the method outlined in Section 2D.400, associated with the increase in pavement width within the ROW. As each of the roadway alternatives includes the addition of the 15-foot shared used path the increase in impervious will remain the same across all alternatives, therefore, the drainage design will be consistent across all alternatives. Detention in the form of in-line storage will need to be identified within the ROW, offline detention ponds may be considered as an option.

With the selected alignment, a preliminary profile and the location and size of the storm sewer trunkline, if applicable, shall be developed. If the survey has not been authorized, then Engineer shall utilize LiDAR information to develop profiles. The Engineer may request available LiDAR information from HCFCD for the project limits. The Engineer shall present the preliminary drainage options during the Drainage Meeting and an option shall be selected at this meeting. The presentation shall include a value analysis/Engineering of up to 3 options, estimated construction and routine maintenance costs, ROW impacts, and Public impacts.

The Drainage Meeting shall review the following design elements in preparation for the Drainage Report:

- Overall drainage area
- Preliminary trunk line sizing
- Detention requirements (both in-line and offsite)
- Flood plain mitigation
- FEMA flood map review
- Critical utility conflicts
- Preliminary profile review

Deliverables at Drainage Meeting:

- 34" Wide Roll Plot (Plan View at a 1" = 40' scale) containing the following information:
 - Proposed planimetrics (back of curb, medians, turn lanes, etc.). All subject to change in the design phase.
 - Aerial photography
 - Existing ROW

- Potential proposed ROW
 - Outfall structures
 - Location of storm sewer trunkline
 - Location(s) of potential detention sites
- Profile View
 - Existing roadway profile grade line (PGL)
 - Existing ROW profile grade lines
 - Outfall structures
 - Preliminary proposed PGL
- KMZ of project with drainage alternatives provided to HCED prior to the meeting.
- Meeting agendas, meeting minutes and action items for each meeting in electronic format submitted to HCED prior to distribution.

DRAINAGE REPORT

A drainage study report will be prepared to present our study findings and recommendations for the roadway impacts and mitigation for the project. The drainage study report will be signed and sealed by a Licensed Professional Engineer. The study report will also be provided in electronic PDF format as required by COH for review and approval.

C. Right-of-Way (ROW) Meeting

The purpose of this meeting is to discuss and agree upon the construction sequencing, overall construction zone and the temporary drainage as needed. The discussion of the high-level traffic control plan (TCP) and the previous decisions made at the alignment and drainage meetings shall support identification of ROW acquisition needs. A parcel by parcel analysis on the needs for ROW acquisition shall follow the construction sequencing discussion. Development of the Metes and Bounds (Proposed ROW Maps) shall be authorized following the conclusion of the meeting.

TCP Deliverables at ROW Meeting:

- 34" Wide Roll Plot (Plan View at a 1" = 40' scale) containing the following information:
 - Proposed planimetrics (back of curb, medians, turn lanes, etc.). All subject to change in the design phase.
 - Aerial photography
 - Existing ROW
 - Potential proposed ROW
 - Construction sequencing patterns to illustrate phasing
 - Preliminary TCP typical sections
 - Temporary drainage structures
- Word Narrative of the construction sequencing for the project including temporary drainage and paving.

ROW Deliverables at ROW Meeting:

- 34" Wide Roll Plot (Plan View at a 1" = 40' scale) containing the following information:
 - Proposed planimetrics (back of curb, medians, turn lanes, etc.) All subject to change in the design phase.
 - Aerial photography
 - Existing ROW including utility easements

EXHIBIT A

- Potential proposed ROW
- Proposed detention pond(s)
- Outfall structures and other utilities impacted by ROW
- Temporary construction easements
- Parcel data
- Topographical survey data
- Existing metes & bounds
- Proposed unobstructed visual easements (UVEs) and corner clips
- Critical structure impacts
- KMZ of project with TCP and ROW with parcel descriptions, provided to HCD prior to the meeting.
- Meeting Agendas, Meeting Minutes and Action Items for each meeting in electronic format submitted to HCD prior to distribution.

D. Initial Utility Coordination Meeting

The purpose of this meeting is to begin the identification of any utility conflicts within the project limits. The surveyor shall contact 811 to locate utilities, record that information, and establish a Utility Conflict Table containing the following information at a minimum:

- Conflict number
- Station and offset
- Name of utility
- Contact information (name, address, phone, email)
- Type of utility
- Utility notification date and type
- Conflict type
- Anticipated date of conflict clearance

The Engineer shall provide the Preliminary Utility Conflict Table for review.

Utility Deliverables:

- 34" Wide Roll Plot (Plan View at a 1" = 40' scale) containing the following information:
 - Proposed planimetrics (back of curb, medians, turn lanes, etc.). All subject to change in the design phase.
 - Aerial photography
 - Existing ROW
 - Potential proposed ROW
 - Outfall structures
 - Temporary construction easements
 - Parcel data
 - Topographical survey data color coded per APWA Color Code
 - Existing metes & bounds
 - Existing utilities with potential conflicts identified
 - Locations of recommended SUE test holes
- Utility Conflict Table color coded per APWA Color Code
- KMZ of project with utilities on individual levels, provided to HCD prior to the meeting.

- Meeting agendas, meeting minutes and action items for each meeting in electronic format submitted to HCED prior to distribution.

E. Study Report

- a. Pre-Client Presentation: The Engineer shall present a draft of Client presentation to HCED for feedback.

Deliverables:

- 34" Wide Roll Plot summarizing all the data gathered in the previous meetings showing both plan and profile
 - KMZ of project, including alignment, ROW, TCP, drainage, utilities, etc.
 - Presentation (i.e. PowerPoint, Presi, Etc.)
 - Handouts of the presentation
- b. Client Presentation: The Engineer shall incorporate feedback received in the Pre-Client Presentation meeting.

Deliverables:

- 34" Wide Roll Plot summarizing all the data gathered in the previous meetings showing both plan and profile
 - Presentation (PowerPoint, Presi, Etc.)
 - Handouts of the presentation
- c. Study Report: The Engineer shall document and summarize all project findings and provide the design objectives for the preparation of the Construction Contract Documents. The format should be a concise signed and sealed Study Report (typically 3 – 5 pages) with supporting information in the appendix including overall schematic, cost estimate, drainage report with INO Letter, environmental assessment reports, geotechnical report, traffic analysis, etc. The Engineer shall incorporate feedback received to obtain Commissioner's Court approval of Study Report.

Deliverables: Study Report

ENVIRONMENTAL

2E.500 Phase I Environmental Site Assessment (ESA)

ESA is to determine whether known or possible contamination might be in the project area and encountered during construction. The Phase I ESA shall be in accordance with current ASTM standards.

- Review regulatory agency lists for records regarding possible hazardous material handling, spills, storage, and production at the site or in the vicinity that may potentially threaten the subject property. These lists include: CERCLIS, RCRIS, NPL, ERNS, PST, LPST, superfund sites and waste disposal sites.
- Review selected aerial photography for the past use activity in the site from the 1950's (or whatever available) to present to identify any signs of potential environmental concerns.
- Review additional records such as topographic maps, Sanborn maps, city directories and fire

insurance maps.

- Perform a site and surrounding area reconnaissance and on-site interviews to identify any indications of potential environmental contamination.
- Prepare a Phase I Environmental Site Assessment report describing the findings of this assessment.

Deliverables: Phase I ESA Report

2E.502 Historical/Cultural Resources- Desktop Review – The archaeology records review will be performed in accordance with the Texas Historical Commission’s Rules of Practice and Procedure, Chapter 26, Section 27, and the Council of Texas Archeologists’ (CTA) Guidelines for Cultural Resources Management Reports.

- Review identifying recorded historical and archeological sites within and around the project corridor-based records obtained from the Texas Archeological Research Laboratory (TARL) and the Texas Historical Commission (THC). All archeological properties listed on the National Register of Historic Places (NRHP) and the State Archeological Landmarks (SAL) shall be identified. The background review shall include recommendations regarding the need for an intensive cultural resources survey. HCED will submit the CR Desktop Survey to THC for review and concurrence.

Deliverables: Cultural Resources Desktop Analysis; Constraints Map

Optional Additional Services

2E.550 Phase II Environmental Site Assessment

Based on the results of the Phase I ESA, a limited site investigation may be required for sites with contamination that may be encountered during construction. The Phase II ESA will be conducted by, or under the supervision of, a Texas licensed professional geoscientist, according to current TCEQ and ASTM standards. The Phase II ESA will include comparison of contaminant levels to appropriate TCEQ action levels and recommendations for removal, remediation, site-specific health & safety plan, and waste management plan. Work is performed on a per-contaminated-site basis. Phase II ESA will be to evaluate the presence of soil and ground water contamination from the REC sites along the proposed alignment. The scope of work is generally based on the ASTM E1903 (2019).

- Perform coring in the existing pavement to access the subsurface soil.
- Drill and continuously sample nineteen (15) environmental borings each to depth of 15 feet below existing grade, near the Recognized Environmental Conditions (REC) sites utilizing Geoprobe. Assuming that there will be five (5) REC sites.
- Screen each soil sample in the field for the presence of volatile compounds using a photoionization detector (PID);
- Develop 1-inch temporary wells for groundwater (if encountered) sampling at each REC site and then plug and abandon;

- Conduct analytical tests on one (1) soil sample from each boring and one (1) groundwater sample for each REC site (if encountered);
- Prepare a Phase II environmental report documenting the field investigation and analytical test results in accordance with ASTM Practice E1903 and as modified by COH Infrastructure Design Manual

Deliverables: Soil and Groundwater Sampling and Analysis Plan; Limited Site Investigation Report

2E.553 Categorical Exclusion Documentation

The Categorical Exclusion Documentation be to evaluated whether any biological, socio-economic and historical aspects are being affected. If so, it will have recommendations to obtain no-effect determinations.

- Review reviewed, to verify any state and/or federally listed threatened or endangered species based on United States Army Corps of Engineers (USACE), Texas Parks and Wildlife Department (TPWD) and United States Fish and Wildlife Service (USFWS) databases;
- Consult Texas Historical Commission's (THC);
- Prepare Categorical Exclusion Document.

Deliverables: Categorical Exclusion Report

2E.551 Archeology Pedestrian Survey

Based on the results of the Cultural Resources Desktop Analysis, the Texas Historical Commission may require additional below-ground investigations, including shovel testing and/or deep trenching. Prior to the archeology survey, an Antiquities Permit shall be prepared in accordance with current Texas Historical Commission guidance. This task does not include collection of artifacts. An Historical/Cultural Resources Pedestrian survey will be conducted by physically walking the site and conducting the required shovel testing to determine if any archaeological or cultural resources are present within the project boundary. The survey will be conducted in accordance with Section 106 of the Historic Preservation Act and/or the State of Texas Antiquities Code. Additional details are presented in Attachment No. 2 (subconsultant's proposal).

Deliverables: Archeology Pedestrian Survey Report

E.500C – 564C Environmental Coordination

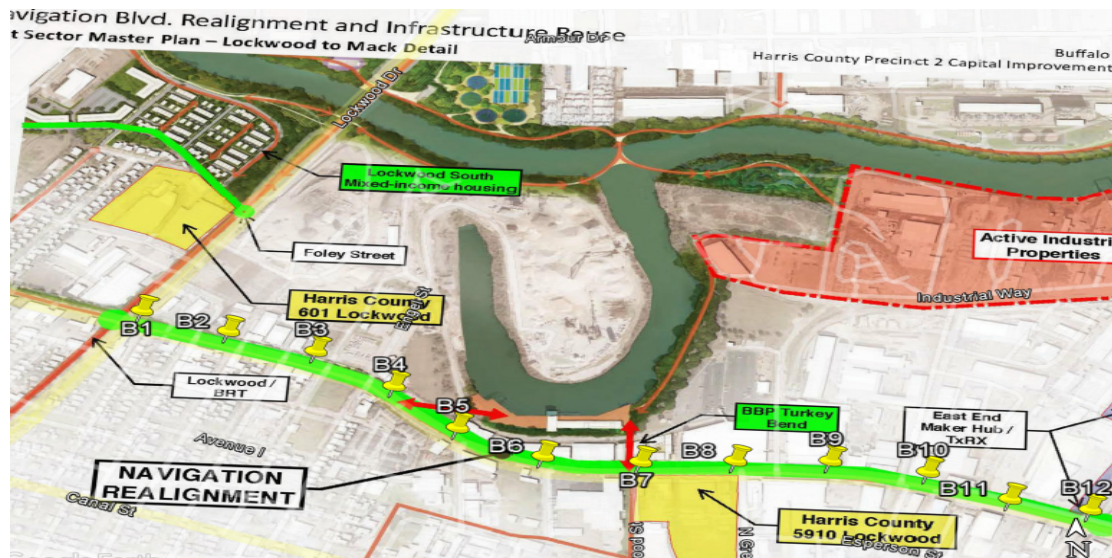
Engineer shall coordinate with environmental provider to complete the tasks, which shall be included in the Study Phase Report or Design Plans.

GEOTECHNICAL

2G.600 Roadway – Report

A. Field Investigation

1. Submit soil boring layout for approval. Shown below is the boring layout for approval.



2. Obtain utilities clearance for all the boring locations.

Prior to mobilizing geotechnical drilling equipment, we will coordinate the Texas One-Calls and review the available underground line information. Each test boring location requires coring with a coring machine and prior to soil sampling the boring location will be hand probed to a depth of 5 ft prior to drilling.

3. Provide all traffic control, labor, and equipment for the Traffic Control Plan (TCP) while performing field services in compliance with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices" and HCED Standards.
Provide traffic control (Peace Officer & Flagmen) including traffic signs, barrel and cones in compliance with "Texas Manual on Uniform Traffic Control Devices" and HCED Standards.
4. Prior to drilling and sampling soil borings, the predetermined locations on existing pavement will be cored with coring machine in order to determine existing pavement thickness.
5. Drill and sample:
 - i. 12 soil borings each to a depth of 20 feet for the proposed roadway and utilities
6. Grout all borehole borings, using non-shrink cement bentonite grout after completion of drilling and water level measurements. The use of cement bentonite grout shall eliminate the potential problems and safety hazards associated with surface settlements that might occur if boreholes are backfilled with soil cuttings.
 - i. All cored asphalt pavement will be patch with cold asphalt patch, and concrete pavement cored will be patched with lean cement concrete after grouting boreholes.

B. Laboratory Testing

1. Laboratory testing should be conducted in general accordance with the corresponding ASTM standards.
2. Perform laboratory tests on selected representative soil samples to determine Engineering properties of the soils and to select design soil parameters. The soils physical and index properties, moisture contents, unconfined compressive strength, undrained unconsolidated compressive strength, Atterberg limits, and Percent finer than No. 200 sieve.

3. Perform Engineering analyses to develop geotechnical recommendations including pavement recommendations including subgrade stabilization requirements, and for utilities replacement, including excavation stability, bedding and backfill, groundwater control, and construction considerations.

G.653 Phase I Fault Study

Desktop Geological Fault Study

1. Perform in accordance with current HGC guidelines
 2. Consist of a detailed literature review, a remote sensing study with examination of historical aerials photographs (including LIDAR and false color infra-red imagery), a study of geologic structure maps, topographic maps, and a detailed field reconnaissance
 3. Determine the likelihood of a surface fault impacting the project
 4. Delineate the fault on a map
- C. Report
1. Submit a final geotechnical report and Fault Study in accordance with HCED Guidelines.

Deliverables: Geotechnical Report and Fault Study

G.600C – 653C Geotechnical Coordination

Engineer shall coordinate with the geotechnical provider for the completion of the Geotechnical Report, which shall be included in the Study Phase Report or Design Plans.

S.700 SURVEY

All surveying activities and deliverables performed by and or for Harris County Engineering Department (HCED) shall be performed in accordance with the most current laws and minimum standards of practice as promulgated by the Texas Board of Professional Engineers and Land Surveyors (TBPELS). This document shall not reduce or minimize state laws in any way. TBPELS minimum standards of practice shall be applicable wherein this document does not cover scoped work.

The Texas Society of Professional Surveyors (TSPS) developed the Manual of Practice for Land Surveying in the State of Texas, which has long been identified and accepted as the standard level of care for Land Surveying in the State of Texas. Furthermore, the TSPS Manual has developed various categories of Land Surveying, identifying standards and specifications for each. The TSPS manual can be found here: <https://www.tsp.org/page/eManualofPractice>.

SCOPE OF WORK:

Scope of works for surveying services are listed below:

BASIC SERVICES:	
Item	Services
2S.700	Existing Right-of-Way Maps (Cat. 1B, Cond. 2)

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

2S.701	Topographic Survey (Cat. 6, Cond. 1)
2S.702	Control
2S.703	Utility Conflict Table
ADDITIONAL SERVICES:	
S.750	Proposed ROW Maps (Cat. 1A, Cond. 2)
V.910	Level A SUE (Optional Service)
V.911	Level B SUE (Optional Service)

BASIC SERVICES:

2S.700: Existing Right-of-Way Maps (Cat. 1B, Cond. 2)

Boundary Survey will be done along Navigation Boulevard as shown in the attached exhibit to define existing Right-of-way (ROW) of the said road. Survey will comply with Category 1B, Condition 2 survey of the latest TSPS Manual and Harris County survey requirements as applicable/feasible. In conformance, the scope of work will include the following:

- A. Provide deed research to determine existing rights-of-ways throughout the project routes.
- B. Tie in property corners and block corners to define the existing rights-of-ways.
- C. Prepare right-of-way map of the existing right-of-way in accordance with TSPS Category 1B, Condition (II) standards and conform to Harris County Standards.

Deliverables: Signed, sealed, and dated right-of-way map of the existing rights-of-ways; Title reports

2S.701: Topographic Survey (Cat. 6, Cond. 1)

Survey shall conform to all requirements of Harris County and Category 6, Condition 1 survey of TSPS Manual as applicable. In general, the scope for survey will be including the following tasks:

Project Corridor Survey:

- A. Perform topographic survey for 7,450 linear feet with all intersections along Navigation Boulevard, and for additional side streets as noted:
 - i. Refer to table below:

Street		From	To	Length (LF)	Total (LF)
Main Street	Navigation	Lockwood	100' east of Mack	5,550	5,550

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

Side Street	Lockwood	100' north of Navigation	100' south of Navigation	200	1,900
	N Burr	Navigation	100' south of Navigation	100	
	N Stiles	Navigation	100' south of Navigation	100	
	N Bryan	100' north of Navigation	100' south of Navigation	200	
	N Adams	100' north of Navigation	100' south of Navigation	200	
	N Edgewood	100' north of Navigation	100' south of Navigation	200	
	Engel	100' north of Navigation	100' south of Navigation	200	
	Baywood	Navigation	100' south of Navigation	100	
	Portwood	Navigation	100' south of Navigation	100	
	Norwood	Navigation	100' south of Navigation	100	
	N Greenwood	Navigation	100' south of Navigation	100	
	McFarland	100' north of Navigation	Navigation	100	
	Mack	100' north of Navigation	100' south of Navigation	200	
Total					7,450

EXHIBIT A

- B. Perform topographic survey at the following intersections for traffic signals:
 - a. None listed.
- C. Survey to include 25 feet outside of the right-of-way and up to 60 feet outside right-of-way for objects (obstructions), except those that are behind brick walls and buildings. The following tasks will be performed for additional 25' survey within Fenced Private Properties:
 - a. Coordinate for access to the site
 - b. Establish additional survey controls as necessary
 - c. Survey elevations at 25' beyond ROW in 100' c-c
 - d. Survey topo and utility features within 25' strip
- D. Establish elevations and locations of physical features including buildings, structures, signs, power poles, curbs, driveways, water meters, manholes, pedestals, ponds, light poles, etc. within the proposed and existing right-of-way. Overhead crossing utilities shall be limited to the low chord elevation.
- E. Provide pipe flow line elevations, size, material and directions of all sanitary sewer lines, storm sewer lines and driveway culverts. Top of rim or top of grate and flow line elevations shall be recorded on all inlets, manholes and drainage structures.
- F. Locate Ornamental trees or Landscape trees with a diameter of 4" and larger. Wooded/brushed areas shall be limited to an outlined area only. No Individual Trees shall be located on natural vegetation areas.
- G. Provide SUE Level C per ASCE SUE Guidelines
 - i. Perform Texas One Call for underground utility locations to mark utilities within the existing right-of-way and existing easements within the take area.
 - ii. Locate markings provided by One-Call and "visible" utilities within 25 feet of the proposed and or existing right-of-way.
 - iii. Include locations of electrical risers as a CADD callout and layer in the survey deliverable.
- H. Provide SUE Level D per ASCE SUE Guidelines
 - i. Obtain utility maps from Comcast, CenterPoint Energy, and AT&T.
 - ii. Obtain utility maps from other utilities not limited to waterline, sewer, MUD, pipelines
- I. Locate utility markings or test holes provided by SUE providers.
- J. Locate soil borings.
- K. Provide all traffic control, labor, and equipment for the Traffic Control Plan (TCP) while performing field services in compliance with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices" and HCED Standards.
- L. Prepare utility conflict table, to include risers.
- M. Attend Field Topo Verification Meeting to visibly check that all topo items are currently located as per the field notes. Objectives to be achieved during the field topo verification meeting include impacts that could affect the alignment alternatives have on the Right of Way, existing structures such as signals, utilities, and property, environmental impacts and impacts to existing and proposed improvements.
- N. Provide/meet all railroad survey requirements needed for the railroad review of the project.

DTM/Contour:

- O. DTM will be prepared for delineation of ground contours. A Geopak TIN file of the existing paving corridor will be generated.

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

Utility Plan & Profile:

P. Utility plan and profile drawings will be prepared in MicroStation as base maps for design work.

Deliverables: CADD file along with ASCII point file, DTM with 1-foot contours and TIN file and XML file with break lines; 22"x34" 1" = 20' plan sheets (color coded per APWA Color Code) for the topo field walk (6 copies).

2S.702: Control

- A. Horizontal Survey Control shall be referenced to the Texas State Plane Coordinate System, South Central Zone, NAD83.
- B. Vertical Control shall be based on the nearest existing Harris Reference Marker, NAVD 1988, 2001 Adj.
- C. Provide adequate number of control points that are set and recoverable.
- D. Request information from HCED for directions on tying controls to adjacent projects.

Deliverables: Survey Control Map and three-point sketches, signed and sealed by a Texas RPLS.

2S.703: Utility Conflict Table

Perform utility research by obtaining record drawings from City of Houston, Harris County PID, contact Municipal Utility Districts for water & wastewater information, contact private utility companies such as CenterPoint Energy, AT&T and Comcast and obtain their record drawings. Texas one-call system will be notified and pipeline companies will be contacted to probe and mark their pipeline locations to be tied to the survey.

We will prepare a table showing the ownership, contact person and contact information, size and location of all utility lines within the project alignment.

Deliverables: Utility Conflict Table (color coded per APWA Color Code)

ADDITIONAL OPTIONAL SERVICES:

S.750 Proposed ROW Maps (Cat. 1A, Cond. 2)

Boundary survey will be performed for preparing parcel plat and metes and bounds description for acquiring right of way/easement **parcels** in reference to this project as required. At this point the locations and number of parcels are not decided.

Survey will comply with Category 1A, Condition 2 survey of the latest TSPS Manual and Harris County survey requirements as applicable/feasible. Horizontal and vertical controls will be established and tied

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

to the Texas State Plane Coordinate System, South Central Zone NAD 83 (CORS 96) and datum NAVD 88. In conformance, the scope of work will include the following:

- A. Surveying the parcel area as necessary to reflect latest condition and to include any structures 60' outside the right-of-way if impacting the acquisition parcel
- B. Review deeds as necessary
- C. Preparing plat map drawing for each parcel
- D. Preparing metes and bound description for the parcel
- E. Map check closure for the parcel
- F. Setting the parcel on the ground as appropriate

Deliverables: Signed and sealed parcel plat, field notes and supporting last deed of record for each parcel.

V.910: Level A SUE

Level A SUE survey will be done at designated locations in compliance with the ASCE C-I 38-02 standards, as applicable. Scope of work will include the following:

- A. Mark horizontal locations of the lines with non-destructive geophysical technique and/or probing as applicable
- B. Contact One Call to notify intent of Level A SUE survey
- C. Excavate Level A test holes via non-destructive vacuum excavation
- D. Determine orientation, size, depth, and material of the line as found
- E. Survey test holes information to the project datum
- F. Prepare a data sheet with information for each hole and update topo survey plan and profile drawing

Deliverables: Signed and sealed test hole data sheet and updated topo and utility plan and profile drawing.

V.911: Level B SUE

Scope of work for Level B SUE survey will include the following:

- A. Provide utility designation, which is collected using geophysical equipment operated from the surface to designate the locations of underground utilities.
- B. Provide all traffic control, labor, and equipment for the Traffic Control Plan (TCP) while performing field services in compliance with the regulations of the most recent edition of the "Texas Manual on Uniform Traffic Control Devices" and HCED Standards.
- C. Perform work according to HCED guidelines and ASCE SUE Guidelines - <https://www.fhwa.dot.gov/programadmin/asce.cfm>

Deliverables: CADD Files; Signed, sealed, and dated Level B SUE layouts. The facilities should be marked out and recorded on the map and included with plan documents.

T.810 TRAFFIC

Project Management and Coordination

We will participate in meetings with Harris County project management staff as requested throughout the project. We will participate in up to six agency coordination meetings to present study findings/recommendations and gather input from agency stakeholders (City of Houston, METRO, Buffalo Bayou Partnership, East End District, etc.). We will prepare agendas, materials, and minutes for these meetings.

T.810 Traffic Study

A. Data Collection

- Available previous traffic studies or counts
- TxDOT database for historic counts in the region.
- Submit a memo outlining the sources for traffic count data and methodology used to estimate the traffic volumes before proceeding to the analysis phase.
- Conduct peak hour turning movement counts at all intersections and median openings along the study corridor (not to exceed 14 locations)
- 24-hour speed and volume counts (not to exceed 3 locations)

Safety data:

- TxDOT CRIS crash records within the study corridor for a recent five-year period, including pedestrian and bicycle-involved crashes.
- City of Houston Vision Zero High Injury Network information and

Area Mobility and Public Space Plans

- BBP East End Master Plan and related supporting studies
- Houston Bike Plan & East End Bike Plan
- H-GAC Livable Centers Studies
- METRO Long Range Plan (METRONext)
- S. Lockwood Roadway Design Plans
- Development plans for announced projects along the corridor

B. Existing Condition Analysis

- Existing condition capacity analysis for the intersections listed above for typical weekday AM and PM peak conditions and provide outputs in the form of delays, volume to capacity (v/c) ratios, 50% and 95% queue length, and level of service (LOS).

C. Traffic Projections

- Based on the direction provided by the County, assume the built-out year for this project is five years past the existing year.

- Develop traffic projections for the study corridor for the future built out year using a growth rate to be approved by the County and City. H-GAC's regional travel demand model, TxDOT historic data and traffic counts from previous studies shall be used to estimate the growth rate.
- D. Future Conditions Analysis and Recommendations
- Estimate future conditions capacity including delay, v/c ratios, traffic queues, and LOS for the study area intersections listed under Task 2 for typical weekday AM and PM peak hours. This shall be used as a base condition scenario for comparison with proposed alternative scenario. Any capacity limitations in no-build scenario shall be identified and recommendations shall be made as part of a preferred alternative.
 - Synchro software shall be used to analyze signalized and unsignalized intersections, whereas Sidra shall be used to estimate operations at proposed Roundabouts.
- E. Project Memorandum
- Prepare a memorandum summarizing all the Traffic Operational Analysis along the corridor. In addition to reporting the study process and findings, corridor and intersection recommendations shall be documented to meet the traffic demands for future year.

Deliverables:

- Report section documenting existing traffic and safety conditions
- Summary of area plan goals and recommendations related to the study corridor

Alternative Evaluation and Screening

We will perform a high-level, primarily qualitative evaluation of four basic alternatives for the general corridor cross-section of Navigation from Lockwood to Wayside/SSMG:

- 1) Conversion of the south half of Navigation Boulevard to a greenway
- 2) Conversion of the north half of Navigation Boulevard to a greenway
- 3) Moving curbs inward to create back-of-curb greenway space
- 4) Expansion of the esplanade to create greenway space in the center of the street

This evaluation will compare the relative magnitude of impacts or outcomes related to the following considerations:

- Level of comfort for people walking and biking
- Conflicts between traffic movements and people walking and biking
- Access to businesses and adjacent properties
- Traffic operations including number of lanes, availability of turn lanes
- Street and drainage reconstruction
- Mature trees

One preferred alternative will be advanced to concept development for each of three segments on the corridor:

- Lockwood Drive to McFarland Street
- Navigation Overpass – McFarland Street to Cesar Chavez Blvd including access to adjacent developments
- Cesar Chavez Blvd. to Staff Sargent Macario Garcia Drive (east of Navigation overpass)

Deliverables:

- Report section presenting the alternative evaluation and recommended alternative for the corridor.
- Recommendations for safe crossing and transitions to adjacent corridors to be refined in concept development.

Concept Development

We will develop the concept for the recommended corridor cross-section to a sufficient level of detail to define the proposed improvement project, corresponding roughly to a 15% design deliverable for traffic and transportation components of the project. We will also provide analysis supporting the traffic and transportation feasibility of the proposed improvements and alignment with the project vision.

Concept development will include the following:

- Cross-section figures for up to three typical sections along the corridor.
- Capacity analysis for the corridor and any signalized intersections recommended for capacity changes.
- Intersection control recommendations including examination of an additional signalized or controlled location, tentatively at Norwood, and warrant study suitable for COH coordination.
- Schematics up to 6 key locations (one sheet each, 20 scale, 11x17, aerial base).
- Review and comment on related corridor schematics.

Deliverables:

- Report section presenting the project definition including cross-sections, capacity analysis and intersection geometry recommendations for up to controlled intersection, safe crossing recommendation and supporting warrant studies.
- Warrant study memo for up to two signalized or controlled location.
- Review of overall corridor design concept based on multimodal design best practices.

Project Assumptions: Public involvement tasks are not included in this scope. Additional stakeholder and/or general public engagement could be added as part of an additional task and scope.

T.805 Sight Distance Triangle Evaluation and Exhibits

Engineer shall evaluate all street (private and public) intersections in project limits and create exhibits that depict both 15' and 25' setbacks to evaluate need and area required for Unobstructed Visibility Easements (UVEs) or for Road ROW/corner clips. At signals, sight triangles are to evaluate for right turn on red.

Deliverables: Sight Distance Triangle Exhibits

T.800C – 810C Traffic Coordination

Engineer shall coordinate with the traffic provider for the completion of the Traffic tasks, which shall be included in the Study Phase Report or Design Plans.

Traffic Control Plans, phasing, sections and any meetings are excluded from scope.

LANDSCAPING AND URBAN DESIGN

Landscape Architect shall provide schematic design for the Navigation Boulevard Reconstruction Project located in Houston, Texas. Elements include: roadway realignment and incorporation of greenway hike and bike trail, pavement markings, signals, site lighting, surface design for vehicles, bicyclists and pedestrians, tree plantings and street furnishings. The Study Phase includes the schematic design for the reconstruction of the full project area from Lockwood to Mack Street, including a strategy for the greenway negotiating the bridge condition between McFarlane Street on the west and North 67th Street on the east, and assuming that the existing bridge will stay.

Landscape Architect will lead the planning for all pedestrian conditions in coordination with the team including: landscape preparations, landscape grading, all pedestrian and landscape surfaces.

Following services will also be provided:

- a. Arborist — assessment of existing trees and protection plans
- b. Cost Estimation — cost estimates provided at completion of Study Phase and Design Phase.

SCOPE OF SERVICES

A. SUMMARY OF BASIC SERVICES

The project area, defined as Navigation Boulevard between Lockwood Drive at the west and Mack ve at the east.

1. STUDY PHASE

The Study Phase will illustrate the principal components and materials of the design. The phase will build on the Turkey Bend Redevelopment Concept Plan (Buffalo Bayou Partnership Report, 2021) as well as planning and engineering assumptions from the ongoing reconstruction project at the intersection of Lockwood Drive and Navigation Boulevard, slated for construction in September 2022. Alternatives for the roadway alignments and greenway design to be narrowed to a single scheme by the end of the Study Phase. This phase also includes the development of preliminary drawings, sufficient to assess all aspects of site costs, for pricing a package at the beginning of November 2022.

TASKS

- Coordinate with traffic engineer to design curb alignments, pavement markings, crosswalks, traffic signal placement, street lighting, pedestrian & bicyclist areas, plantings, furnishings, and related site elements.
- Coordinate initial site utilities and drainage by others.
- Coordinate tree assessment survey and develop mitigation plan.

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

- Develop three design alternatives for review by Harris County, City of Houston, and Turkey Bend project stakeholders to be narrowed to one final schematic plan
- Develop concept for identity and character of the Navigation Boulevard Greenway
- Provide information on materials for preliminary costing
- Provide preliminary cost estimate for landscape scope.
- Coordination with private property owners (ie CEMEX, and Buffalo Bayou Partnership)

DELIVERABLES

- Layout Plan (plot roll) showing curb alignments, pavement markings, crosswalks, traffic signals, street lights, sidewalk areas, bicycle trail, plantings, furnishings and related site elements.
- Enlargement Plans at all intersections
- Typical streetscape sections
- Final schematic sketch plan
- Schematic planting & irrigation plan
- Material strategies
- Preliminary planting strategy and palette
- Study Report Landscape Narrative & Exhibits with cost estimates

MEETINGS

- Attend bi-weekly (every two weeks) Client & Stakeholder Meetings. Stakeholders to include: Buffalo Bayou Partnership, Texas Department of Transportation, Union Pacific Railroad (UPRR), Metro (by zoom)
- Attend bi-weekly (every two weeks) design team coordination meetings with consultants (by zoom)

2. COMMUNITY ENGAGEMENT SCOPE (CONCURRENT WITH TASK 1)

We will lead the community engagement scope in support of Harris County, conducting one in-person meeting with key community stakeholders. Services will include:

DELIVERABLES

- Illustrative Plans
- Illustrative Sections
- Sketch Renderings

MEETINGS

- Coordinate and conduct one Public Meeting
- Participate in one pre-meeting with County to coordinate Public Meeting content (via zoom)

B. OPTIONAL ADDITIONAL SERVICES

Project : Navigation Boulevard from Lockwood to Mack Street

UPIN 22102MF2D601

EXHIBIT A

Additional Services (services other than those outlined above) shall be provided on a time basis in accordance with the RH hourly rate schedule and shall be performed only upon prior approval of the Client. Additional Services include but are not limited to:

1. Services required because of changes to the Project including but not limited to changes in size, quality and complexity, schedule, program, or budget.
 2. The preparation of alternate conceptual directions and/or alternate solutions after the completion of 50% Design Development.
 3. Services in conjunction with permit submissions, applications, and/or presentations to regulatory agencies other than services outlined above.
 4. Management, administration or coordination of submission process for LEED certification.
 5. The preparation of special presentation drawings at request of Client for project promotion and fundraising purposes.
 6. Plan preparation for and construction observation of portions of the project let on a segregated bid basis.
 7. The observation and administration of construction for discrete projects or items which may begin prior to completion of design development.
 8. Services required as a result of the default or insolvency of the contractor.
 9. Preparation of record drawings or of measured drawings of existing conditions.
 10. Professional services in site civil, electrical, or structural engineering, or other technical expertise required for the project, other than as outlined above.
 11. Additional time required in the construction administration phase other than the hours indicated in the Basic Services of the agreement.
 12. Additional meetings other than the number indicated in Basic Services of the agreement
 13. MEP or Irrigation design not anticipated at Study Phase. If requested by County, it will be
- Additional Services



EXHIBIT C - Compensation for Professional Services
Harris County Engineering Department
Reconstruction of Navigation Boulevard from Lockwood to Mack- Pre-Planning- Study Phase Only
Precinet 2, UPIN 22102MF2D601
Construction Cost Estimate: **\$11,731,186.67**

2.P	Pre-Design Phase		\$	424,072.00
3.P	Design Phase		\$	-
4.P	Bid Phase		\$	-
	Drainage			
2D.401	25% additional detention analysis- Not in Scope	\$	-	
2D.401C	Drainage Coordination	\$	-	
2D.402	Drainage Report	\$	55,020.00	
2D.402C	Drainage Coordination	\$	5,502.00	
			\$	60,522.00
	Environmental			
2E.500	Phase I ESA	\$	5,620.00	
2E.500C	Environmental Coordination	\$	562.00	
2E.501	Wetland Delineation and Approved Jurisdictional Determination	\$	-	
2E.501C	Environmental Coordination	\$	-	
2E.502	Threatened & Endangered Species Habitat Survey	\$	-	
2E.502C	Environmental Coordination	\$	-	
2E.503	Cultural Resources Desktop Survey	\$	3,860.00	
2E.503C	Environmental Coordination	\$	386.00	
			\$	10,428.00
	Geotechnical			
2G.600	Roadway - Report	\$	35,416.00	
2G.600C	Geotechnical Coordination	\$	3,541.60	
2G.653	Phase I Fault Study	\$	9,570.00	
2G.653 C	Fault Study Coordination	\$	957.00	
			\$	49,484.60
	Survey			
2S.700	Existing Right-of-Way Maps (Cat. 1B Condition II)	\$	36,030.00	
2S.700C	Survey Coordination	\$	3,603.00	
2S.701	Topographic Survey (Cat. 6 Condition II)	\$	74,490.00	
2S.701C	Survey Coordination	\$	7,449.00	
2S.702	Control	\$	9,130.00	
2S.702.C	Control Coordination	\$	913.00	
	Utility Conflict List preparation	\$	2,825.00	
2S.701C	Utility Conflict List Prep. Coordination	\$	282.50	
			\$	134,722.50
	Traffic			
2T.805	Sight Distance Triangle Evaluation and Exhibits	\$	16,652.00	
2T.805C	Traffic Coordination	\$	-	
2T.806	Traffic and Warrant Study	\$	84,796.00	
2T.806C	Traffic Coordination	\$	8,479.60	
2T.807	Traffic Control Plan- Not in scope	\$	-	
2T.807C	Traffic Coordination	\$	-	
			\$	109,927.60
	Landscape/Urban Design			
3V.9	Landscape/Urban design	\$	106,090.00	
3V.9C	Landscape Coordination	\$	10,609.00	
			\$	116,699.00
Subtotal Basic Services				\$ 905,855.70
	Optional Additional Services including, but not limited to:			
2.P.150	Change Drawings	\$	15,000.00	
3.P.252	Street Lights	\$	1,000.00	
2E. 551	Categorical Exclusion Documentation	\$	8,375.00	
2E..551 C	Environmental Coordination	\$	837.50	
2E.551	Archeology Pedestrian Survey	\$	9,510.00	
2E.551C	Environmental Coordination	\$	951.00	
2E.552	Phase II ESA	\$	18,851.00	
2E.552C	Environmental Coordination	\$	1,885.10	
2S.750	ROW Parcel Acquisition (\$3,250.00/parcel- assume 4)	\$	13,000.00	
2S.750C	Survey Coordination	\$	1,300.00	
2S.751	Level A SUE (\$2,185.00/pothole- assume 2)	\$	4,370.00	
2S.751C	Survey Coordination	\$	437.00	
2S.756	Level B SUE (\$2/foot/Pothole)	\$	4,000.00	
2S.756C	Survey Coordination	\$	400.00	
2S.752	25' Topographic Survey- within Fenced Property (\$425.00/property- assume 6)	\$	2,550.00	
2S.752C	Survey Coordination	\$	255.00	
2SP.754	Encroachment Table	\$	2,000.00	
2G.600	Phase III Fault Study	\$	6,600.00	
2G.600 C	Fault Study Coordination	\$	660.00	
Subtotal Optional Additional Services				\$ 91,981.60
TOTAL SERVICES (BASIC & OPTIONAL ADDITIONAL)				\$ 997,837.30



EXHIBIT D: ENGINEER TEAM ACKNOWLEDGMENTS

1. The following is the group of providers selected to perform the obligations described in the Agreement.
2. If any firm listed below actively holds certification in any of the following categories, that information shall be identified in the table under "Special Designation" Box:
 - **MWBE** (Minority and Women Owned Business Enterprise)
 - **HUB** (Historically Underutilized Business)
 - **DBE** (Disadvantaged Business Enterprise)
3. Also, all contract values must be identified in the table under "Contract Value".

Responsibility	Firm	Special Designation	Contract Value
Prime	Sciencetech Engineers, Inc.		\$507,734.30
Surveying	Kuo & Associates	MWBE	\$146,395.00
Geotechnical	Associated Testing	MWBE	\$51,586.00
Environmental	Geotest Engineering	MWBE	\$46,216.00
Traffic Engineering	TEI Engineers		\$84,796.00
Drainage	CivilTech (a Woolpert Company)		\$55,020.00
Landscape and Urban Design	Reed Hilder Brand		\$106,090.00

Percent of contract in dollars allocated to (MWBE, HUB or DBE) Consultants 24%

- The Engineer understands that it is solely responsible and liable to the County for the completion of all obligations under the Agreement.
- If the contract value of the subconsultant fee(s) are modified from the original amount, it must be approved by the Engineering Department's MWBE, HUB or DBE Compliance Officer.

ORDER OF COMMISSIONERS COURT

The Commissioners Court of Harris County, Texas, met in regular session at its regular term at the Harris County Administration Building in the City of Houston, Texas, on _____, with all members present except _____.

A quorum was present. Among other business, the following was transacted:

ORDER AUTHORIZING AGREEMENT BETWEEN HARRIS COUNTY AND SCIENTECH ENGINEERS, INC. FOR PROFESSIONAL ENGINEERING SERVICES

Commissioner _____ introduced an order and moved that Commissioners Court adopt the order. Commissioner _____ seconded the motion for adoption of the order. The motion, carrying with it the adoption of the order, prevailed by the following vote:

	Yes	No	Abstain
Judge Lina Hidalgo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. Rodney Ellis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. Adrian Garcia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. Tom S. Ramsey, P.E.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comm. R. Jack Cagle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The meeting chair announced that the motion had duly and lawfully carried, and this order was duly and lawfully adopted. The order adopted follows:

IT IS ORDERED that:

1. The Harris County Judge is authorized to execute the attached Agreement between **Harris County** and **Scientech Engineers, Inc.** for Professional Engineering Services. The attached Agreement, including any addendums, may be executed with an electronic or facsimile signature. The Harris County Engineering Department is authorized to request the Harris County Purchasing Agent to expend up to **\$997,837.30** in consideration of the work, products, services, licenses and/or deliverables provided under this Agreement.
2. The Harris County Engineering Department and all other Harris County officials and employees are authorized to do any and all things necessary or convenient to accomplish the purpose of this Order.