

**CITY OF HOUSTON
AND
FREESE AND NICHOLS, INC.**

**PROFESSIONAL ENGINEERING SERVICES
FOR DESIGN OF**

KINGWOOD CENTRAL WASTEWATER TREATMENT PLANT (FN 518) IMPROVEMENTS

WBS NO. R-000265-0165-3

TABLE OF CONTENTS

ARTICLE 1. GENERAL	2
1.1 DEFINITIONS.....	2
1.2 REVIEW OF EXISTING INFORMATION.....	5
1.3 CONTRACT TERM.....	5
ARTICLE 2. DUTIES OF ENGINEER.....	5
2.1 SERVICES IN GENERAL.....	5
2.2 PHASE I – PRELIMINARY DESIGN	8
2.3 PHASE II - FINAL DESIGN	9
2.4 PHASE III – CONSTRUCTION PHASE SERVICES	13
2.5 ADDITIONAL SERVICES	18
2.6 TIME OF PERFORMANCE	25
2.7 ENGINEER’S INVOICES	25
2.8 INSURANCE	27
2.9 INDEMNIFICATION	28
2.10 OWNERSHIP OF DOCUMENTS	28
2.11 CONSULTANTS	29
2.12 PAYMENT OF CONSULTANTS	29
2.13 PARTICIPATION IN BIDDING AND CONSTRUCTION	30
2.14 EQUAL EMPLOYMENT OPPORTUNITY	30
2.15 MINORITY AND WOMEN BUSINESS ENTERPRISES PARTICIPATION	30
2.16 DRUG ABUSE DETECTION AND DETERRENCE	32
2.17 CONFIDENTIALITY	33
2.18 LICENSES AND PERMITS	33
2.19 TITLE VI ASSURANCES.....	33
2.20 PAY OR PLAY	33
2.21 COMPLIANCE WITH CERTAIN STATE LAW REQUIREMENTS.....	33
2.22 ZERO TOLERANCE POLICY FOR HUMAN TRAFFICKING AND RELATED ACTIVITIES.....	33
2.23 PRESERVATION OF CONTRACTING INFORMATION.....	34
2.24 CONSENT DECREE COMPLIANCE	35
ARTICLE 3. DUTIES OF THE CITY	35
3.1 FEES, IN GENERAL.....	35
3.2 FEES FOR BASIC SERVICES.....	36
3.3 FEES FOR ADDITIONAL SERVICES.....	37
3.4 LIMIT OF APPROPRIATION.....	37
3.5 METHOD OF PAYMENT	38
3.6 CERTAIN DUTIES OF THE CITY.....	38
3.7 PARTIAL PAYMENTS.....	38
ARTICLE 4. TERMINATION.....	42
4.1 TERMINATION BY THE CITY FOR CONVENIENCE.....	42
4.2 TERMINATION BY THE CITY FOR CAUSE.....	42
4.3 TERMINATION BY ENGINEER FOR CAUSE	43
ARTICLE 5. MISCELLANEOUS PROVISIONS	43
5.1 INDEPENDENT CONTRACTOR.....	43
5.2 BUSINESS STRUCTURE AND ASSIGNMENTS	43
5.3 PARTIES IN INTEREST	43
5.4 NON-WAIVER.....	43
5.5 GOVERNING LAW AND VENUE.....	44
5.6 NOTICES	44
5.7 CAPTIONS.....	44
5.8 ACCEPTANCES AND APPROVALS.....	44
5.9 INSPECTIONS AND AUDITS.....	44
5.10 INSPECTIONS UNDER CONSENT DECREE	44
5.11 CONSTRUCTION BUDGET	45
5.12 SITE CONDITIONS.....	45

5.13	AMBIGUITIES	45
5.14	ENTIRE AGREEMENT	45
5.15	SURVIVAL	45
5.16	ENGINEER'S DEBT	45
5.17	CONSENT DECREE ACKNOWLEDGEMENT	45
5.18	RELATIONSHIP BETWEEN SERVICES AND CONSENT DECREE	46

SIGNATURES	47
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EXHIBITS

- "A" ADDITIONAL TERMS
 - "A-1" SCOPE OF WORK
- "B" PROJECT SCHEDULE
- "C" FULLY-BURDENED LABOR RATES
- "D" FORM OF CERTIFICATE OF INSURANCE
- "E" DRUG POLICY COMPLIANCE AGREEMENT
- "F" DRUG POLICY COMPLIANCE DECLARATION
- "G" ENGINEER'S CERTIFICATION OF NO SAFETY IMPACT POSITIONS IN PERFORMANCE OF A CITY CONTRACT
- "H" SUBCONTRACTOR'S ASSIGNMENT OF COPYRIGHTS
- "I" FORM POP 2 - CERTIFICATION OF AGREEMENT TO COMPLY WITH PAY OR PLAY PROGRAM
- "J" CERTIFICATION OF AGREEMENT TO COMPLY WITH STANDARD DOT TITLE VI ASSURANCES
APPENDIX A LANGUAGE
- "K" FEDERAL PROVISIONS
- "L" CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS - PRIMARY COVERED TRANSACTIONS
- "M" CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS
- "N" ASSURANCES OF COMPLIANCE WITH CIVIL RIGHTS REQUIREMENTS IF AGREEMENT IS FUNDED BY AMERICAN RESCUE PLAN ACT FUNDS OR U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT FUNDS

CONTRACT
FOR
PROFESSIONAL ENGINEERING SERVICES
FOR
KINGWOOD CENTRAL WASTEWATER TREATMENT PLANT (FN 518) IMPROVEMENTS
WBS NO. R-000265-0165-3

THE STATE OF TEXAS §
 §
COUNTY OF HARRIS §

THIS CONTRACT FOR PROFESSIONAL ENGINEERING SERVICES ("Contract") is made on the date countersigned by the City Controller, by and between the **CITY OF HOUSTON, TEXAS** (the "City"), a municipal corporation and home-rule city of the State of Texas principally situated in Harris County, and **FREESE AND NICHOLS, INC.** (the "Engineer"), acting by and through its duly authorized officer. The initial addresses of the parties, which one party may change by giving notice to the respective other party, are as follows:

<u>City</u>	<u>Engineer</u>
Director Houston Public Works City of Houston P.O. Box 1562 Houston, Texas 77251	David Munn, Principal/ Vice President FREESE AND NICHOLS, INC. 801 Cherry Street, Suite 2800 Forth Worth, TX 76102

RECITALS:

WHEREAS, the City desires to obtain professional engineering services in connection with the planning and/or design of the Project hereinafter described; and

WHEREAS, the Engineer desires to provide such services in exchange for the fees hereinafter specified;

NOW, THEREFORE, for and in consideration of the premises and mutual covenants herein contained, it is agreed as follows:

ARTICLE 1

GENERAL

- 1.1 **Definitions:** The following Definitions are used throughout this Contract, including Exhibit "A". See Exhibit "A" for any additional Definitions applicable to this Contract.
- 1.1.1 **Additional Services:** Services completed by Engineer in support of the Project that are not part of Basic Services, but are included in Article 2 of this Contract and as further described in Exhibit "A", Exhibit "A-1", and the Notice(s) to Proceed.
- 1.1.2 **Basic Services:** Services completed by Engineer in support of the Project, included in Article 2 of this Contract and as further described in Exhibit "A", Exhibit "A-1", and the Notice(s) to Proceed.
- 1.1.3 **City:** As defined in the preamble of this Contract, including its successors and assigns.
- 1.1.4 **City Design Manual:** "City of Houston Infrastructure Design Manual" in effect at the time of execution of this Contract, a current version of which can be found on the internet at the following URL:
<https://www.houstonpermittingcenter.org/media/6371/download?inline>
- 1.1.5 **City Personnel:** All City employees, but not elected officials.
- 1.1.6 **Consent Decree:** The document entitled Consent Decree between the City and the United States, and the State of Texas entered on April 1, 2021 in *United States and the State of Texas v. City of Houston*, Civil Action No. 4:18-cv-03368, in the United States District Court for the Southern District of Texas, Houston Division. A copy of the Consent Decree is attached as Appendix A, and electronically available at the following URL:
<http://www.publicworks.houstontx.gov/wastewater-cd>
- 1.1.7 **Consent Decree Obligations:** Any and all obligations or requirements set forth in the Consent Decree that are applicable to all, or any part of the Services covered by the Consent Decree that are performed by Engineer and its Consultants or agents under this Contract or amendments thereto, including Additional Services, if any.
- 1.1.8 **Construction Documents:** All of the graphic and written information prepared or assembled by Engineer for communicating the design and for administering the bidding and construction of the Project.
- 1.1.9 **Construction Package:** The services and deliverables that make up a whole or a part of the Project, as further described in this Contract.

- 1.1.10 **Consultant (also “Subcontractor”)**: The professional Consultant, contractor or other professional entity subcontracted by Engineer to provide a portion of engineering services or Work required under the City-Engineer Contract.
- 1.1.11 **Consultant Subcontract Cost**: The ordinary and reasonable cost of Consultant subcontracts made by Engineer and approved by the Director for the principal purpose of obtaining the professional services of others in connection with the performance of any service under this Contract.
- 1.1.12 **Director**: The Director of the Houston Public Works, or such other person designated from time to time by the Director by notice to Engineer to administer this Contract on behalf of the City.
- 1.1.13 **Documents**: The reports, charts, analyses, maps, letters, tabulations, exhibits, notes, models, photographs, the original transparencies of all drawings, Construction Documents, computer programs including source and object codes, and all other records, information, communications and correspondence (including in electronic form, such as email), Works and other work products obtained by or prepared by Engineer, its Consultant or Subcontractor as part of its services under this Contract. The Director shall specify the medium and format in which Engineer shall provide such documents.
- 1.1.14 **Engineer**: As defined in the preamble of this Contract, including its successors and assigns.
- 1.1.15 **FEMA**: the Federal Emergency Management Agency.
- 1.1.16 **Fully-Burdened Labor Rate**: The Engineer’s fixed hourly rates, which includes all payment due Engineer for Raw Salary, salary burdens, benefits, insurance, overtime premium, payroll taxes, bonuses, overhead, profit and clerical and management support, vacations, holidays and non-productive time of all kinds. The categories of service for which Fully Burdened Labor Rates are payable are set out in Exhibit “C.” All other categories of service are treated as overhead and should be included in Engineer’s Fully-Burdened Labor Rate. Payments to contract personnel and personnel employed through employment agencies will be paid based on actual costs and are not subject to enhancement by the above included costs.
- 1.1.17 **Geographic Information System (GIS)**: A system designed to capture, store, manipulate, analyze, manage, and present all types of geographical information.
- 1.1.18 **Negotiated Lump Sum**: An amount negotiated with Engineer consistent with the terms of this Contract that City shall pay Engineer for the completed performance of services in each Work Order, not to exceed the estimated total cost of the following:
- 1.1.18.1 Fully-burdened labor rates for services performed directly by Engineer and Engineer’s employees, plus
 - 1.1.18.2 Reimbursable Expenses, plus

- 1.1.18.3 Consultant Subcontract Costs, plus
 - 1.1.18.4 Reasonable fees paid to contract personnel and personnel employed through employment agencies.
 - 1.1.18.5 Under no circumstance is Engineer permitted to bill, nor will the City pay, costs calculated as a percentage of actual costs incurred.
- 1.1.19 **Notice to Proceed:** A written communication from the Director that authorizes Engineer to begin performance of work. Multiple Notices to Proceed should be anticipated for contracts that include multiple projects/subprojects. A Notice to Proceed will contain the following:
- 1.1.19.1 A declaration that the City has allocated adequate funds for that phase or service;
 - 1.1.19.2 The Negotiated Lump Sum for all work described in the Notice to Proceed;
 - 1.1.19.3 A work description for each service Engineer, Consultants, or suppliers will perform under the Notice to Proceed;
 - 1.1.19.4 The maximum cost and portion of the Negotiated Lump Sum associated with each work description;
 - 1.1.19.5 Whether the work description represents a Basic or Additional Service;
 - 1.1.19.6 The phase of the Project to which the work is attributable; and
 - 1.1.19.7 Acceptance of the preceding Phase, when applicable.
- 1.1.20 **Project:** As identified in the title of this Contract.
- 1.1.21 **Project Schedule:** The schedule of project activities and events, showing initiation point, duration, and ending points using the form attached as Exhibit "B." The schedule will indicate time to be allowed for reviews by the City staff. The Project Schedule shall be drafted by Engineer in consultation with the Director, approved by the Director, and updated monthly at the time of invoice submittal.
- 1.1.22 **Reimbursable Expenses:** Reimbursable Expenses are limited to the following: (1) the ordinary and reasonable cost of copying, printing, postage, delivery services, long distance telephone calls and any additional expenses listed in Exhibit "A" incurred by the Engineer in the course of his performance of services under this Contract, including any sales tax Engineer is legally required to pay for Reimbursable Expenses; and (2) the ordinary and reasonable costs of travel including meals and lodging to and from points outside of Houston by representatives of the Engineer, not-to-exceed the amounts established under the City's then current travel reimbursement policy for its employees, if such travel is reasonably necessary to accomplish a task and authorized by the Director.
- 1.1.23 **Subcontractor (also "Consultant"):** The professional Consultant, contractor or other professional entity subcontracted by Engineer to provide a portion of engineering services or Work required under the City-Engineer Contract.

1.1.24 **Supplemental Notice to Proceed:** A Notice to Proceed amending a preceding Notice to Proceed, which must be issued before services commence, containing the elements required for the original Notice to Proceed and the following:

- 1.1.24.1 A description of the changes in the scope or quality of work between the Supplemental Notice to Proceed and the preceding Notice to Proceed;
- 1.1.24.2 Acceptance for work completed under the previous Notice to Proceed, when applicable;
- 1.1.24.3 The percentage difference between the original Notice to Proceed for that Phase and all subsequent Supplemental Notices to Proceed; and
- 1.1.24.4 The incremental cost of the services in the Supplemental Notice to Proceed.

1.1.25 **Work or Services:** The entire construction work or services required to be provided by the Construction Documents. The Work or services may constitute the whole or a part of the Project and may be one or more Construction Packages.

1.2 **Review of Existing Information:**

- 1.2.1 Existing utility information, existing record drawings of previous projects, and existing survey information are readily available to the Engineer and the public. The Director shall provide access to such information. It is the responsibility of the Engineer to physically gather this information from available sources.
- 1.2.2 The Engineer shall review applicable existing information and develop independent recommendations based on the information.

1.3 **Contract Term:** This Contract is effective on the Countersignature Date and expires upon the completion of the Work.

ARTICLE 2
DUTIES OF ENGINEER

2.1 **Services in General:** Engineer agrees to provide prompt and efficient professional services and Work in relation to the design and management of the Project for the fees hereinafter specified. Engineer shall perform its Work in accordance with the professional skill and care ordinarily provided by competent engineers, practicing in the same or similar locality and under the same or similar circumstances and professional license; and as expeditiously as is prudent considering the ordinarily professional skill and care of a competent engineer, except that for Work covered by the Consent Decree, Engineer shall perform its Work in connection with the standards and requirements of Article 2.24.1.

2.1.1 All Services and Work performed under this Agreement is deemed to be Services and Work covered by the Consent Decree unless Contractor submits a request, in writing, for a determination that a portion of the Services and Work is not covered by the Consent Decree and the City declares in writing that a portion of the Services and work is not covered by the Consent Decree.

- 2.1.2 Additionally, this Contract will be funded in whole or in part by the Federal Emergency Management Agency (FEMA). As such, Engineer shall certify that during the performance of work under this Contract Engineer will comply with all applicable local, state, and Federal laws, regulations, executive orders, Federal policies, procedures, and directives, including any regulations relating to, but not limited to, the FEMA Public Assistance Grant Program.
- 2.1.3 In anticipation of the City's potential use or application for reimbursement of restricted federal funds to pay for some or all of the Services provided under this Agreement and any change orders, Exhibits "K," "L," "M," and "N" are incorporated into this Agreement. The parties agree to take such action as is necessary to amend this Agreement, if the Director determines that it is necessary to incorporate additional state or federal laws and regulations or grant requirements into this Agreement. Any ambiguity in this Agreement shall be resolved to permit the parties to comply with the applicable state and federal laws and regulations and grant requirements.
- 2.1.4 Engineer also agrees to perform such specific tasks as are set forth in Exhibit "A-1", when directed to do so by a Notice to Proceed, which is attached hereto and made a part hereof for all purposes. In the event of an inconsistency between these terms and conditions and the terms of Exhibit "A-1", the terms of Exhibit "A-1" shall control, except for those terms and conditions specifically related to Services covered by the Consent Decree, in which case the terms specifically related to the Services covered by the Consent Decree control.
- 2.1.5 The Basic Services in this Contract are divided into three distinct phases:
- 2.1.5.1 Phase I - Preliminary Design;
 - 2.1.5.2 Phase II - Final Design; and
 - 2.1.5.3 Phase III - Construction Phase Services.
- 2.1.6 Preliminary and Final Designs shall conform to the latest City Design Manual as well as other design criteria that may be provided for this Contract by the Director.
- 2.1.7 The City may use a construction project manager as well as City personnel to review portions of the design; however, Engineer acknowledges that while others may suggest design ideas and components of the Project, such suggestions do not relieve Engineer of its professional responsibility to the City for complete design of the Project.
- 2.1.8 Engineer shall make periodic verbal or written reports and recommendations to the Director with respect to conditions, transactions, situations or circumstances encountered by Engineer relating to the services to be performed under this Contract and shall attend meetings determined to be necessary by the Director.
- 2.1.9 The Engineer shall reference the City's Project Title and City's Project WBS Numbers on all correspondence and submittals.
- 2.1.10 The Engineer shall manage the efforts of the Project team members and Consultants, assign manpower, delegate responsibilities, review work progress, monitor conformance to the scope regarding the budget and schedule, and otherwise direct the progress of the work.
- 2.1.11 Periodic meetings shall be held to review the progress of the engineering effort or to address other issues which may arise. The Director shall initiate meetings that include the Engineer and his Consultants, and if necessary, the Director and other applicable parties. The Engineer shall prepare

- and deliver meeting record memorandum of decisions and action items to the City within two business days after each meeting.
- 2.1.12 The Engineer shall notify the Director immediately of any deviation from the Scope of Services and/or Fee agreed to in this Contract. The Engineer shall not perform services outside of the Contract scope without a duly executed Amendment to this Contract.
- 2.1.13 The Engineer shall route all written communication with regulatory agencies, neighborhood associations, and City Council through the Director.
- 2.1.14 Engineer shall, upon written request, provide the Director with a written and/or electronic copy of materials prepared and/or referenced by Engineer or made available to it as a result of its performance under this Contract.
- 2.1.15 Engineer shall coordinate performance of the Services hereunder with the Director and such other persons as the Director may specify.
- 2.1.16 Engineer shall perform the Basic Services or Additional Services required for any Phase of this Contract only upon receipt of a Notice to Proceed.
- 2.1.17 Engineer understands and acknowledges that the City may determine not to proceed with this Contract after completion of Engineer's Services for any Notice to Proceed. Engineer understands and acknowledges that the City may determine not to proceed with this Contract after completion of Engineer's services for either Phase I - Preliminary Design or Phase II - Final Design.
- 2.1.18 Engineer shall review Notices to Proceed to ensure the work descriptions specified within the Notices to Proceed and change order forms are adequately detailed. Engineer shall report to the Director any work description that does not adequately detail the Services Engineer intends to provide. Engineer may not receive payment for work if the work description in a Supplemental Notice to Proceed does not appear different in scope from the work description in a previous Notice to Proceed.
- 2.1.19 Engineer shall coordinate the performance of Services hereunder with the Director and governmental agencies and other bodies having jurisdiction over this Project or City consultants performing Services related to the Project.
- 2.1.20 Engineer agrees that the Director may reduce the scope of Services for any of the Services identified in the Notice to Proceed or may divide the Project into separate Construction Packages by issuing a written notice describing: (1) the scope of the reduced Project or the scope of each Construction Package; and (2) the revised Time of Performance.
- 2.1.21 Engineer understands and acknowledges that this Contract contains the entirety of potential Services the City may request from Engineer through issuance of Notices to Proceed and that the inclusion of any particular Service in this Contract does not guarantee that Engineer will be requested to perform that Service during the performance of this Contract.
- 2.1.22 Time is of the essence to the performance by the Engineer under this Contract. Timely performance by both parties is essential to the Contract. However, with regard to Services covered by the Consent Decree, neither Party is liable for delays or other failures to perform its obligations under the Contract to the extent the delay or failure is caused by a Force Majeure. For Services covered by the Consent Decree, Force Majeure shall mean any event arising from causes beyond the control of the City or Engineer, its Consultants, Subcontractors, or its agents, that delays or prevents the performance of any

Services despite the Engineers', Consultants', Subcontractors', or agents' best efforts to fulfill the obligation. "Best efforts" include using efforts to anticipate reasonably foreseeable Force Majeure events and to address the effects of any such event (a) as it is occurring, and (b) after it has occurred, such that the delay is minimized to the extent reasonably practicable.

- 2.1.23 If any event occurs that may delay or prevent the performance by Engineer, its Consultants, Subcontractors, agent, or supplier of any Services under the Contract covered by the Consent Decree, Engineer must provide the City written notice immediately, but no later than 48 hours from the date Engineer, its Consultant, Subcontractor, agent, supplier, or any entity controlled by the Engineer or Consultant first knew, or by the exercise of due diligence, should have known, that the event might cause a delay. Within 10 days thereafter, or such other time as the City and Engineer agree in writing, Engineer shall provide to the City in writing the following: an explanation and description of the reasons for the delay; the anticipated duration of any delay; all actions taken to prevent or minimize the delay; a schedule for implementing any measure to be taken to prevent or mitigate the delay or the effect of the delay; and the Engineer's rationale for attributing the delay to a Force Majeure event, if it intends to assert such a claim. Failure to comply with the requirements of this paragraph may, at the City's option, preclude the Engineer from asserting any claim of Force Majeure. The Engineer shall be deemed to know of any circumstance of which the Engineer, its Consultants, Subcontractors, its agent, supplier, or any entity controlled by the Engineer or Consultant knew or, through best efforts, should have known.
- 2.1.24 If Engineer presents a claim of Force Majeure for any delay related to Services covered by the Consent Decree, and the City considers the claim, in its sole and absolute discretion, to be a good faith claim of Force Majeure, the City may present the claim of Force Majeure to the United States and the State of Texas under the terms of the Consent Decree. If the United States and the State of Texas agree that the delay or anticipated delay is attributable to a Force Majeure event, the time for the Engineer to perform the Services covered by the Consent Decree under this Contract that are affected by the Force Majeure event will be extended by the amount of the extension afforded to the City under the Consent Decree.
- 2.1.25 If the City presents a claim for Force Majeure under the Consent Decree and an extension of time is not granted, no extension of time will be extended under this Contract. It is within the City's sole and absolute discretion whether to invoke the Dispute Resolution procedures of the Consent Decree regarding any denied claim for Force Majeure.
- 2.1.26 Notwithstanding any other provision in this Contract, Engineer's failure to comply with the Force Majeure provisions for Services covered by the Consent Decree will constitute a material breach of this Contract and an event of default.
- 2.1.27 Engineer shall identify all government agencies having regulatory jurisdiction and obtain authorization from the City prior to communication with the agencies.

2.2 Phase I – Preliminary Design

- 2.2.1 Engineer shall submit to the Director, within ten days of the Notice to Proceed for Phase I, a Project Schedule reflecting actual dates for activities and reviews set forth therein. The Project Schedule shall

commence on the date of the Notice to Proceed and be based upon the number of calendar days established in this Contract.

- 2.2.2 Once the Engineer has billed for the entire Limit on Phase I Compensation, Engineer shall complete the Phase I work for no further compensation.
- 2.2.3 Engineer shall submit 6 electronic copies of the preliminary design and outline specification Documents to the Director in hard copy format and one electronic copy in the format requested by the Director.
- 2.2.4 Engineer shall attend preliminary conferences with officials from local, state, and federal agencies, utility companies, and other entities as necessary for the Project.
- 2.2.5 Engineer shall conduct a thorough utility plan review, and Engineer shall follow the City's Utility Coordination Ordinance and procedures.
- 2.2.6 The Notice to Proceed for Phase I shall specify Phase I milestones and the Engineer's Fully-Burdened Labor Rate with corresponding job classifications, Reimbursable Expenses, and Consultant Subcontract Cost necessary to reach each milestone. Engineer shall perform all services necessary to complete each milestone.
 - 2.2.6.1 The City will utilize the documentation provided by Engineer related to Fully-Burdened Labor Rates, Reimbursable Expenses, and Consultant Subcontract Cost in order to determine the cost reasonableness for the Negotiated Lump Sum in each Notice to Proceed.
- 2.2.7 After receiving the Notice to Proceed for Phase I, Engineer shall perform the following Phase I services during the Project:
 - 2.2.7.1 Prepare a Preliminary Engineering Report (PER) which contains the findings and recommendations resulting from this Phase of work. Follow the guidelines in Exhibit A-1, at a minimum, and as further described in the Notice to Proceed;
 - 2.2.7.2 Prepare and participate in the Technical Review Committee (TRC) meeting, as further described in Article 2 of this Contract;
 - 2.2.7.3 Determine the hydraulic impact and mitigation options of the proposed drainage improvements to the existing drainage system HGL of an interconnected City system including but not limited to in-line system storage and in-line system restriction as part of these services;
 - 2.2.7.4 Identify hydraulic impacts and mitigation options of the proposed drainage improvements to the receiving system of other governmental agencies including, but not limited to, detention basin, or low impact design (LID) method; and
 - 2.2.7.5 Engineer understands and acknowledges that standard engineering practice typically requires multiple modeling iterations for development of a sound proposed condition and determination of the best viable level of service.

2.3 Phase II - Final Design

- 2.3.1 The Engineer shall submit to the Director within ten days of any Notice to Proceed for Phase II, the Project Schedule updated to reflect firm dates for the beginning and end of each activity set forth therein and the review dates for such activities.

- 2.3.2 The Engineer shall submit a detailed construction cost estimate at the 60%, 90%, and Bid Ready Drawings stages:
 - 2.3.2.1 Engineer shall inform the Director of any adjustments to previous estimates of the Project construction cost which are indicated by market conditions or authorized changes in the scope and requirements of the Project within five business days of determining the adjustment; and
 - 2.3.2.2 Engineer does not guarantee that bids will not vary from the final construction cost estimate.
- 2.3.3 The Engineer shall submit 8 electronic copies of the recommendations, analyses and other deliverables identified in this Contract in hard copy format and one electronic copy in the format requested by the Director.
- 2.3.4 Agency Approvals and Signatures
 - 2.3.4.1 The Engineer shall design the Project in compliance with the standard of care in the industry and the requirements of applicable laws, codes, and regulations, including the City of Houston Building Code. The Construction Documents shall conform to applicable federal, state, and City regulations.
 - 2.3.4.2 The Engineer shall prepare the Documents necessary to obtain approval of governmental authorities having jurisdiction over the design or operation of the Project and all public and private utilities including pipeline transmission and railroad companies affected by the Project; obtain the signatures of representatives of such governmental authorities and public and private utilities; and obtain the signatures of City officials indicated by the City's standard title block for drawings.
 - 2.3.4.3 The Engineer shall obtain required signatures from other governmental agencies, public utilities, and private utilities, which may impact the Project prior to final approval by the Houston Public Works. Governmental agencies include, but are not limited to, Harris County and Harris County Flood Control District. Utility signatures include, but are not limited to, AT&T, Centerpoint Energy-Electric, Centerpoint Energy-Gas, and cable TV.
- 2.3.5 Additional Requirements
 - 2.3.5.1 The Engineer is responsible for quality and completion of the Final Design as requested by the Director.
 - 2.3.5.2 The Engineer shall specify the minimum acceptable performance and/or material standards associated with temporary facilities and structures that are determined necessary to implement the Project, that are potentially cause for significant disruption to local communities or businesses, and that are not solely for the convenience of the construction contractor.
 - 2.3.5.3 The Engineer shall review results from Additional Services prior to submittal to the City and where applicable, incorporate this information into the Final Design documents. Such Additional Services may include, but not be limited to, survey, geotechnical, environmental, traffic control, storm water pollution prevention plans, street lighting plans, tree mitigation/planting plans, and special studies.

- 2.3.5.4 The Engineer shall incorporate the City Standard Details as applicable. The Engineer shall review each Standard Details and edit as necessary to suit Project-specific requirements and to meet the design intent of the Project. Revisions to the Standard Details shall not be incorporated based solely on Engineer's preference, but are subject to review and acceptance by the Director. The Engineer shall notify the Director of all proposed changes to Standard Details and provide reasons for such proposed changes. The Engineer shall prepare additional nonstandard details necessary for bidding and construction of the Project.
- 2.3.5.4.1 The Engineer shall incorporate and utilize Capital Projects Standard drawings and details as applicable.
- 2.3.5.5 The Engineer shall verify findings from Utility Plan Review with the results of the Survey Services (see Additional Services) and identify potential conflicts during construction. Proposed designs shall strive to avoid conflicts where physically and financially feasible. Relocations of private utilities shall be coordinated with the City of Houston as early in design process as possible.
- 2.3.5.6 The Engineer shall obtain the written approval for the necessary Right of Entry to the properties affected by the Project, using the City's designated form that is currently in use. The Engineer shall turn in all acquired Rights of Entry to the City before proceeding to Phase III, Construction Phase Services. The Engineer shall perform its due diligence prior to coordinating with the City for additional assistance. Engineer shall identify and prepare encroachment letters.
- 2.3.5.7 The Engineer shall prepare a construction duration estimate for the proposed project. The construction duration estimate shall be based upon tasks, subtasks, critical dates, milestones, and deliverables and shall consider the interdependence of the various items, and adjacent construction projects. Scheduling software or other available industry methodologies may be used to assist in the construction duration estimate preparation. The Engineer must substantiate the construction duration estimate to the City and assist the City in interpreting the estimate. The construction duration estimate shall be submitted no later than the Final Drawing and Specification milestone submittal.
- 2.3.5.8 For Water Plant projects, the Engineer shall perform the following work:
- 2.3.5.8.1 Develop valve and water plant shut-down sequences for situations in which construction could necessitate a partial or entire shut-down;
- 2.3.5.8.2 Plan sequences in coordination with the assigned project manager of the City Drinking Water Operations Branch of the Houston Public Works Public Utilities Division ("Drinking Water Operations"), and include sequences in Bid Documents; and
- 2.3.5.8.3 Prepare a plan view showing locations of existing valves, and required working condition status to operate during construction.
- 2.3.5.9 For projects with paving and drainage improvements and other projects, as applicable:

2.3.5.9.1 Design of in-line system storage and or restriction shall be include in Basic Services; and

2.3.5.9.2 Floodplain Management Office approval is part of Basic Services.

2.3.6 Bidding Services

2.3.6.1 The Engineer shall prepare specifications in accordance with the Construction Specification Institute (CSI) standard format adopted by the City. The Engineer shall use the City Standard Specifications Table of Contents for Construction Documents as a guide for organization of the Contract Documents. The City Standard Specifications (Divisions 00-16) are prepared to include the requirements, features, construction materials, and related items desired by the City based on the City's experience and needs. The Engineer shall review each Standard Specification and supplement as necessary to suit Project-specific requirements and to meet the design intent of the Project. Supplements to the Standard Specifications shall not be incorporated based solely on the Engineer's preference. Supplements are subject to review and acceptance by the Director. The Engineer shall prepare additional nonstandard specifications necessary for bidding and construction of the Project. Incorporate Guide Specifications necessary for bidding and construction of the Project.

2.3.6.2 The Engineer shall incorporate the CSI Division 00 front-end documents provided by the City into the Project specifications.

2.3.6.3 The Engineer shall prepare detailed Construction Documents and Conformed Drawings based on the guidelines provided by the Director. The Construction Documents shall set forth recommended alternate bid items for the Project in a manner that permits ready evaluation and comparison. The Engineer shall furnish copies of the Construction Documents and the Conformed Drawings to the City within ten business days after bid award, or as otherwise stated by the City, in the following numbers and formats: 10 full size sets; seven reduced size drawings (11 inches by 17 inches); eight sets of the project manual; and one compact disc of all associated reports. Conformed Drawings represent the Bid Documents revised to reflect all addenda changes made during the bid period.

2.3.6.3.1 The Engineer shall furnish the City with a CD or DVD of the final plans in a format usable by AutoCAD 2016 or later.

2.3.6.4 The Engineer shall assist the City in conducting the pre-bid conference and submit meeting minutes within three business days.

2.3.6.5 The Engineer shall prepare necessary addenda to address issues or clarifications necessary for completion of the bidding process.

2.3.6.6 The Engineer shall furnish three copies of the tabulation of bids received with a written recommendation for the award of a construction contract, and submit within three business days after the bid opening.

- 2.3.6.7 The Engineer shall provide clarification, correct discrepancies, correct errors and omissions; assist the City in evaluating the bid proposals; and assist in the preparation of a construction contract between the City and the successful bidder.

2.4 Phase III – Construction Phase Services

- 2.4.1 Upon issuance of a Notice to Proceed for Phase III, Engineer shall provide professional services during construction to assist in obtaining a completed Project in accordance with the purpose and intent of the Construction Documents.
- 2.4.2 The Engineer shall participate in pre-construction conferences and monthly construction progress meetings. When requested by the construction project manager, the Engineer shall attend other meetings related to project design in lieu of attending the monthly construction progress meetings.
- 2.4.3 The Engineer shall make visits to the Project site at appropriate intervals as construction proceeds to observe and provide a written construction site observation report on the progress and the quality of the executed Work.
 - 2.4.3.1 The frequency of these visits should be monthly, after the construction contractor has mobilized and is constructing the proposed improvements. Site visits should occur during times when the construction contractor is actively performing major construction activities. Site visits should be coordinated with the construction project manager. These monthly visits shall be combined with any site visits made to resolve field problems relating to the construction or monthly progress meetings.
 - 2.4.3.2 The personnel provided by Engineer to perform site visits shall be experienced in the administration of construction contracts and shall be under the supervision of a professional engineer registered by the State of Texas. Supporting personnel shall be provided from the Project design team when specialized knowledge of the Project design is required.
 - 2.4.3.3 Site Observation Reports
 - 2.4.3.3.1 The report shall be included in the Engineer's monthly invoice, unless otherwise approved by the Director.
 - 2.4.3.3.2 The report shall be in writing, shall include all referenced supporting documents, and shall advise the Director of deviations from the Construction Documents, the contractor's construction schedule, or other items as set forth below, observed by or brought to the attention of the Engineer at the time of the Site Observation.
 - 2.4.3.3.3 Provide percentage of completion of the Work and an overall map, showing complete and incomplete areas.
 - 2.4.3.3.4 The report shall be submitted to the construction project manager within three business days after the site visit.
 - 2.4.3.3.5 The following guidelines are intended to provide consistency when preparing the required Construction Site Observation Reports. These

guidelines are intended to be the minimum requirements and do not replace sound professional judgment.

2.4.3.3.5.1 A brief narrative of the type of construction activities occurring at the time of the site visit is to be prepared. The narrative should include a description of the progress to date and the general quality of the ongoing work (based upon the Contract Documents). The following items should be observed and reported for each project site:

2.4.3.3.5.1.1 The date and time period on the job site;

2.4.3.3.5.1.2 The station and street work in progress or facility location observed;

2.4.3.3.5.1.3 The description of work should include the type of activities the construction contractor was performing (e.g., excavating, backfilling, paving, etc.), approximate size of crew, number and type of equipment in use (e.g., 1 back hoe, 3 dump trucks, etc.), and where these activities were occurring (e.g., Along Misty Valley, between Foggy Lane and Rainy Day);

2.4.3.3.5.1.4 Whether the work is in general conformance with the Contract Documents or report the observed deficiencies;

2.4.3.3.5.1.5 Identify whether the traffic control plan is being followed by the construction contractor or report the observed deficiencies and the impact the construction is having on traffic;

2.4.3.3.5.1.6 Whether NPDES storm water pollution prevention plan (SWPPP) is being followed by the construction contractor or report the observed deficiencies;

2.4.3.3.5.1.7 Whether trench safety system is in compliance with the construction

the Construction Documents; (2) to conform the Construction Documents to the requirements of all applicable laws, codes, and regulations, including the City of Houston Building Code (which is expressly made applicable to this Project) as it was in effect at the time of execution of this Contract; or (3) with respect to Work covered by the Consent Decree, to make the Work conform with the requirements of the Consent Decree.

- 2.4.6 The Engineer shall review laboratory, shop, and mill tests of material and equipment for general conformance with Contract Document requirements and report to the Director in writing on such matters.
- 2.4.7 The Engineer shall provide design clarifications and recommendations to assist the City in resolving field problems relating to the construction. Requests for Information (RFIs) will normally be generated by the construction contractor when a situation or condition is anticipated or encountered in the field that may not be fully addressed in the construction Contract Documents. RFIs are to be reviewed, a complete and fully responsive written answer provided, and returned to the construction project manager with a copy to the design project manager within five business days depending upon the criticality and impacted cost of the condition as described in the RFI. Engineer's response to RFI's concerning proposed modifications or unforeseen conditions shall only address the technical and design aspect of the issue. Any cost or schedule impacts shall be addressed to the construction contractor by the construction project manager.
- 2.4.8 The Engineer shall evaluate construction contractor change and cost proposals and substitutions and recommend to the City to either approve or disapprove the construction contractor's proposal or substitution, unless instructed not to do so by the Director.
- 2.4.9 No less than 30 days and no more than 45 days before the expiration of the correction period established by the Construction Documents, Engineer, in company with the Director, shall observe the construction site. Within 14 days after such observation, Engineer shall furnish the Director with a written report enumerating items which require repair or replacement as provided under the correction period provisions of the Construction Documents.
- 2.4.10 To avoid misunderstandings or questions, Engineer understands and agrees that the Director shall have the responsibility for the general administration of the construction contract. Accordingly, Engineer shall not have the authority or responsibility to issue direct instructions to the construction contractor, to reject work done by the construction contractor, or to require special inspections or tests. Engineer, however, shall provide continuing counsel to the Director throughout the construction of the Project.
- 2.4.11 Within 30 calendar days of receipt of construction contractor's "as-built" drawings, the Engineer shall prepare and submit the Record Drawings to the design project manager. The Record Drawings shall become the property of the City and shall show significant changes made in the Work by the construction contractor during the construction of the Project. Record Drawings shall be prepared on the original as-bid drawings in the format specified by the Director at the time of execution. The Engineer shall prepare the record documents based solely upon the marked-up "as-built" drawings, addenda, revisions, change orders and other data furnished by the City and the construction contractor. The "as-built" drawings provided by the construction contractor shall clearly depict:
 - 2.4.11.1 Any deviations from the proposed utilities alignments shown in the as-bid drawings;
 - 2.4.11.2 Actual alignments of utilities if different from alignment shown in the as-bid drawings;

- and
- 2.4.11.3 The presence of existing utilities that are either not shown or shown incorrectly in the as-bid drawings should be accurately depicted.
 - 2.4.11.4 Other revisions to be shown include:
 - 2.4.11.4.1 PPCM (Potentially Petroleum Contaminated Material) encounters;
 - 2.4.11.4.2 Lengths for proposed utilities that differ from that shown in the as-bid drawings;
 - 2.4.11.4.3 Deviations from proposed tunneling lengths;
 - 2.4.11.4.4 Existing pavement composition, *e.g.*, "unreinforced concrete with asphalt overlay";
 - 2.4.11.4.5 The name of the manufacturer for installed valves that are 20 inches and larger in diameter;
 - 2.4.11.4.6 Deviations from proposed restrained joint lengths for water line project only;
 - 2.4.11.4.7 Identify type of pipe material installed;
 - 2.4.11.4.8 Revisions due to construction contractor's Requests for Information; and
 - 2.4.11.4.9 Other changes made by the construction contractor.
 - 2.4.11.5 Project RFI's (construction contractor's Request for Information) should be reviewed to ensure the accuracy of the record drawings.
 - 2.4.11.6 Changes shall be made electronically using the Conformed Drawings as a baseline. Actual alignments of utilities shall be shown. Incorrectly shown utilities shall be crossed out and drawn correctly. Inaccurate callouts shall have a line drawn through them. Revised callouts shall be noted in the Conformed Drawings.
 - 2.4.11.7 All record drawing revisions shall be accompanied by a revision number contained within a triangle. The revision shall then be dated and initialed in the revision block. Any revisions made by, or under the supervision of, an Engineer other than the one whose seal appears on the subject drawing shall be signed and sealed by the Professional Engineer responsible for the revision.
 - 2.4.12 Provide, in the event the Project construction exceeds the time stated in the Construction Documents by more than 30 days, the continuing services required to be done by Engineer during construction of the Project.
 - 2.4.13 For contracts that require the construction contractor to service, calibrate, maintain or provide periodic site inspections for a period of one year after the date of substantial completion, the Engineer shall accompany the construction contractor and construction project manager during such visits. For projects involving startup, testing, calibration, training and operation of facilities or systems, the Engineer shall assist the construction project manager in accomplishing such tasks in accordance with the Contract Documents.
 - 2.4.14 When requested by the Director, the Engineer shall visit manufacturers' facilities in order to prequalify major products and materials to be incorporated into a construction contract or verify manufacturers'

compliance with the Contract Documents. The Engineer shall accompany City staff or may travel unaccompanied, as approved by the Director. A written report shall be generated to document the results of the trips. Cost for travel shall be considered a Reimbursable Expense.

2.4.15 Within 30 calendar days of receipt of the construction "as-built" drawings, the Engineer shall provide field verified GPS'ed information of all newly installed assets. All GIS information shall be delivered in the required format detailed in the Houston Public Works Infrastructure Design Manual.

2.5 **Additional Services:** Engineer shall perform the Additional Services specified below if and when the Director authorizes such services.

2.5.1 Survey Services

2.5.1.1 Perform in accordance with the City Design Manual and other City design requirements as designated in writing by the Director.

2.5.1.2 Where new City of Houston monumentation is required in accordance with the City Design Manual, provide separate cost for task under surveying Additional Services.

2.5.2 Drug Detection and Deterrence. Conduct random, reasonable suspicion, and post-accident drug testing necessary to comply with this Contract.

2.5.3 Geotechnical Investigation. Perform in accordance with the City Design Manual and other City requirements as designated in writing by the Director.

2.5.4 Environmental Site Assessment. Perform in accordance with the City Design Manual and other City requirements as designated in writing by the Director.

2.5.5 Special Licenses and Permits (Payment)

2.5.5.1 The actual cost of special licenses and permits, including required inspection fees, shall be reimbursed by the City.

2.5.5.2 This Additional Service does not include engineering work associated with Basic Services.

2.5.6 Traffic Control Plan (TCP)

2.5.6.1 The specific traffic control work consists of the completed TCP, appropriate specifications and general notes, and traffic control construction cost estimates.

2.5.6.2 The TCP shall show detailed construction sequences and the necessary traffic control phases, complete with all barricades, signing, striping, delineation, detours, temporary traffic signals and any other devices, to protect the traveling public and provide safety to the construction forces.

2.5.6.3 The TCP should be accomplished with the least inconvenience to the traveling public consistent with expeditious completion of the Project in time and costs.

2.5.6.4 Construction Sequencing and TCP shall be in accordance with general traffic engineering principles and practices governing traffic control during construction as prescribed by the guidelines of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), and City of Houston requirements.

2.5.6.5 Standards and Guidelines

- 2.5.6.5.1 The construction of the Project should be scheduled or sequenced to minimize the down time for the construction contractor and to maximize the utilization of space for the travel ways. Sequencing is accomplished by partitioning the Project into construction phases, which may be further segmented into steps. A “*phase*” is a major portion of the construction, scheduled in a logical progression toward Project completion. A “*step*” is a minor portion of the construction, subordinate to a particular phase.
- 2.5.6.5.2 The TCP should clearly distinguish areas of construction with areas of traffic for each phase. The work zone is also to be distinguished from the actual construction limits.
- 2.5.6.5.3 Maintain minimum emergency travel lane width of ten feet at all times. If space is not available within the existing roadway, temporary widening of the pavement section may be necessary to provide a minimum 10-foot emergency travel lane.
- 2.5.6.5.4 The TCP should contain the following basic elements:
 - 2.5.6.5.4.1 Project approach signing;
 - 2.5.6.5.4.2 Phasing overview (as applicable);
 - 2.5.6.5.4.3 Detailed plans for each phase of construction and any designated steps; and
 - 2.5.6.5.4.4 Necessary TCP details, including appropriate City standards (Barricade & Construction, etc.), typical lane closures, and intersection details.
- 2.5.6.6 Drawings
 - 2.5.6.6.1 Engineer shall verify and show existing field conditions of roadways and access to adjacent properties.
 - 2.5.6.6.2 Engineer shall show traffic control devices and location of traffic flow, indicated by direction arrows, for each phase of the Project.
 - 2.5.6.6.3 Engineer shall define construction areas by appropriate identifications, such as cross-hatching. Show all barricades, traffic signing, traffic signal changes, detour routing, and special intersection treatment details.
 - 2.5.6.6.4 Engineer shall show only roadways that are existing or to be constructed under the Project. Do not show roadways that have been removed or that will be constructed in future contracts.
 - 2.5.6.6.5 Engineer shall prepare cross sections for major thoroughfares and for each roadway variation showing the traffic lanes, construction pavement markings, delineators, barriers, buffer zone for barrels and concrete traffic barriers (CTBs), pavement drop-off, and construction details.

- 2.5.6.6.6 Engineer shall pictorially represent all construction signing and label with appropriate identification number as shown in TMUTCD. Show and identify all other traffic control devices in the plans and cross sections.
- 2.5.6.6.7 Engineer shall use a "typical" TCP detail for portions of the Project wherever possible.
- 2.5.6.6.8 Engineer shall prepare traffic control construction quantities and estimate of construction cost.
- 2.5.6.6.9 Engineer shall add general notes to the drawings or to the City's Standard General Note Drawing, as required for clarity.
- 2.5.6.6.10 Engineer shall include the City of Houston Standard Specifications for Traffic Control, and supplement as required.
- 2.5.6.7 For paving projects, include the following.
 - 2.5.6.7.1 Engineer shall show temporary traffic control measures required during construction, such as temporary adjustments to traffic signal configurations, revisions to signal timing sequences, installations of contractor-supplied equipment and conduit to provide for proper signal operation, and parking restriction signs in areas where parking is not currently restricted but added roadway capacity is required.
 - 2.5.6.7.2 Where substantial roadway capacity is being lost during construction, the Engineer shall show placement of contractor-supplied changeable message signs with proposed messages to encourage use of alternative routes by the traveling public.
- 2.5.7 Storm Water Pollution Prevention Plan (SWPPP). Perform in accordance with the City Design Manual and other City requirements.
- 2.5.8 Existing Conditions Survey and Analysis
 - 2.5.8.1 The Engineer shall perform a survey and analyses of the existing conditions at designated locations. The Engineer shall submit the results of this work in a separate report.
 - 2.5.8.2 This special service is used where a separate deliverable is desired, and where the survey/analysis is not directly related to the scope of the new work, thus the engineering cost would not be included in the Basic Services.
- 2.5.9 Street Lighting Plans
 - 2.5.9.1 For new roadway construction or complete roadway reconstruction, it is the City of Houston's practice to upgrade street lighting along all roadways to current recommended levels as part of the Capital Improvement Projects.
 - 2.5.9.2 Proposed Street Lighting locations shall be provided at 1"=40' scale (minimum) consistent with project overall layouts.
 - 2.5.9.3 Design consultant will prepare the lighting layout, spacing the streetlights in accordance with the current published CenterPoint Energy Guidelines and Specifications.

- Distances shall avoid driveway/utility conflicts. The design should include any existing street lighting and generally begin layouts at intersections working away from them.
- 2.5.9.4 Street Lighting plans shall show the proposed street lighting locations, electrical conduits, pull boxes and power feed locations provided by CenterPoint Energy in accordance with published CenterPoint Energy specifications.
 - 2.5.9.5 The approved layout will be submitted to CenterPoint Energy for review and cost estimate preparation for temporary or new fixtures. Conduit and pull box costs shall be included in the Engineer's Project construction cost estimate.
 - 2.5.9.6 Street Lighting Plans shall include a table showing the locations of the existing and proposed streetlights by station number.
- 2.5.10 Tree Protection, Mitigation, and Planting Plan. Perform in accordance with the City Design Manual and other City requirements, as designated in writing by the Director.
- 2.5.11 Traffic Signals. Perform in accordance with the City Design Manual and other City requirements, as designated in writing by the Director.
- 2.5.12 Impact Analysis and Mitigation Report for projects requiring drainage and pavement improvements.
- 2.5.12.1 Perform Impact Analysis and Mitigation Report when authorized by the City as designated in writing by the Director.
 - 2.5.12.2 A separate hydraulic analysis and report as required by government agencies having regulatory jurisdiction.
 - 2.5.12.3 Includes quantification of existing and proposed outflows and water surface elevation at outfall to the receiving system.
- 2.5.13 Design of detention pond or low impact development. For mitigation of adverse impacts; perform in accordance with the City Design Manual and other City requirements as designated in writing by the Director.
- 2.5.14 Technical Review Committee (TRC) Meeting
- 2.5.14.1 The Engineer shall attend a Pre-TRC meeting, as scheduled by the Director.
 - 2.5.14.1.1 The purpose of the Pre-TRC is to allow the Director to review the preliminary design, presentation materials, and recommendations.
 - 2.5.14.1.2 The Engineer shall have completed and submitted the Preliminary Engineering Report (PER) prior to the Pre-TRC meeting.
 - 2.5.14.1.3 As part of the Pre-TRC, the Engineer shall prepare a Microsoft PowerPoint presentation, a TRC agenda and an executive summary showing the alternatives, recommendations, and estimated construction and project costs.
 - 2.5.14.2 The Engineer will have two weeks to revise the report and presentation based on comments from the Pre-TRC. Once revisions have been made, the Engineer shall submit to the Director one copy of the report with all exhibits, maps, and computer model output listed in other parts of this Contract. The Executive Summary from the report will be included with the notice of TRC distribution.

- 2.5.14.3 Upon successful completion of the Pre-TRC meeting, the Engineer shall attend a TRC Meeting.
 - 2.5.14.3.1 The purpose of the TRC meeting is to present the preliminary engineering recommendations to the City's Technical Review Committee for approval to proceed to Final Design.
 - 2.5.14.3.2 The Engineer will provide equipment for preparation and presentation of the TRC meeting.
 - 2.5.14.3.3 Members of the TRC are City staff and may include senior managers representing engineering, operations, maintenance, and construction divisions. Other stakeholders may attend at the City's direction.
 - 2.5.14.3.4 The TRC will evaluate the Engineer's recommendations and approve or modify as appropriate.
 - 2.5.14.3.5 Within three business days following the TRC Meeting, the Engineer shall submit a summary of the decisions and action items from the meeting, and a revised construction cost estimate.
 - 2.5.14.3.6 At the conclusion of the TRC, Engineer shall:
 - 2.5.14.3.6.1 Submit a revised estimate of probable construction cost, based on the outcome of the TRC;
 - 2.5.14.3.6.2 Revise the PER in response to the Technical Review Committee's record of decisions and action items and furnish three final copies of the PER; and
 - 2.5.14.3.6.3 Submit final PER in PDF Format on a CD in a single file with a Table of Contents.
 - 2.5.14.3.6.4 Engineer shall make such revisions to the preliminary design as may be required by the Director as a result of Committee recommendations.
 - 2.5.14.3.7 Upon acceptance by the TRC of the need to acquire additional right-of-way or easements for the project, the Director may issue to the Engineer a Notice to Proceed for the preparation of right-of-way and easement documents. These documents shall be delivered to the Director within the time specified in the Notice to Proceed.
- 2.5.15 Independent Quantity Take-Off
 - 2.5.15.1 Engineer shall perform the following service(s).
 - 2.5.15.1.1 Have an independent third party (Estimator) perform a quantity take-off from the Bid Ready Drawings and Specifications prior to Final Submittal. Engineer may provide other documents that will assist the Estimator to complete the task; however, these documents shall in no way compromise the independent judgment of the Estimator. Estimator shall identify each bid item and prepare the quantities for each bid item in accordance with the City of Houston's Standard

- Construction Specifications and/or Custom Specifications, as applicable, that is part of the detailed construction cost estimate.
- 2.5.15.1.2 Engineer is to review the quantity take-off with the Estimator and resolve all discrepancies in the bid items and quantities.
- 2.5.15.1.3 Engineer is to submit a signed letter confirming that an independent quantity take-off was performed, identifying the independent third party who performed the quantity take off, and certifying the accurateness of the bid items and quantities that are included in the detailed construction cost estimate.
- 2.5.15.1.4 The Engineer shall submit evidence of the third party review and mark-up of an independent quantity take-off to accompany the signed letter deliverable.
- 2.5.16 Other Additional Services
- 2.5.16.1 Provide the services of a Consultant to perform subsurface investigations, including performance of test borings, soil samples, and other foundation investigations, laboratory analyses of the samples, and engineering analyses. Engineer or the Consultant shall prepare a detailed report of all findings, and Engineer shall deliver to the Director two bound copies of the report and an electronic copy in the form requested by the Director.
- 2.5.16.2 Prepare special studies and reports, such as environmental Documents (including representation and testimony at hearings and community meetings), grant applications, etc.
- 2.5.16.3 Provide the services of an independent cost estimator as a consultant to make a comprehensive construction cost estimate for the Project, in a form satisfactory to the Director. The independent cost estimate shall be in addition to the cost estimates prepared by Engineer.
- 2.5.16.4 Provide value engineering services including the review of other engineers, either within the same organization or in other firms, to determine whether a proposed solution is optimum and, if not, to suggest a better approach for meeting the Project's functional and financial criteria.
- 2.5.16.5 Provide a scale model of the Project.
- 2.5.16.6 Reproduce Construction Documents, reports, and other materials, other than those reproductions included in the Basic Services, and excluding reproductions for the office use of Engineer and Engineer's Consultants.
- 2.5.16.7 Provide, in the event of termination of Engineer's services pursuant to this Contract, such services as are reasonable and necessary for preserving partially finished work products or for the recording of work products in a particular manner (including the making of record prints of drawings, etc.).
- 2.5.16.8 Provide construction management services on the site during Project construction.

- 2.5.16.9 During the Final Design or Construction Phase, make revisions to Construction Documents, prepare addenda, or prepare change orders to reflect Project scope changes requested by the Director, required to address changed conditions or change in direction previously approved by the Director, mandated by changing governmental laws, or necessitated by City's acceptance of substitutions proposed by the construction contractor.
- 2.5.16.10 Prepare supporting data and other services in connection with change orders, other than those change orders and related services included in Section 2.4 of Article 2 of this Contract.
- 2.5.16.11 Consult with the City concerning replacement of any construction work damaged by fire or any other causes and furnish professional services as may be required in connection with the replacement of such work.
- 2.5.16.12 Prepare or obtain the services of a Consultant to prepare Operation and Maintenance (O & M) Manuals.
- 2.5.16.13 Prepare for, present to, and attend public engagement, preliminary conferences with the City, as requested by the Director. In addition to the foregoing, Engineer shall attend all other meetings as required by the Director.
- 2.5.16.14 Perform services in the event the Basic Services are suspended by the Director for a period exceeding 12 months, and the Engineer provides evidence satisfactory to the Director that additional effort is necessary to resume the Basic Services.
- 2.5.16.15 Unless instructed otherwise by the Director, cooperate fully with surety's representative in the event of construction contractor default; permit surety to copy all relevant documents at surety's expense.
- 2.5.16.16 Provide any Additional Services or other design services related to the Project and not otherwise included in the Basic Services or Additional Services as requested by the Director.
- 2.5.16.17 Travel to points outside Houston and its extraterritorial jurisdiction, if such travel is reasonably necessary to accomplish a task under this Contract and is authorized in writing by the Director. Travel costs shall include common carrier fares, ground transportation expenses and parking fees, and for overnight trips, the costs of lodging and meals and shall not exceed the appropriation limits of this Contract.
- 2.5.17 Public Engagement
- 2.5.17.1 Engineer shall prepare for, present to, and attend the public engagement meetings. This includes but is not limited to:
- 2.5.17.1.1 Initiation Meetings with the City's Public Engagement;
 - 2.5.17.1.2 Public Meetings Design and Construction; and
 - 2.5.17.1.3 Stakeholder Meetings Design and Construction.
- 2.5.17.2 Engineer shall create/produce project exhibits for virtual and in-person presentations. These include but are not limited to:
- 2.5.17.2.1 Pre-Existing and Proposed Conditions Renderings and Exhibits;

- 2.5.17.2.2 Construction Phasing Maps;
- 2.5.17.2.3 Proposed Improvement Map;
- 2.5.17.2.4 Typical Sections; and
- 2.5.17.2.5 Required Design Features Exhibits.

2.6 **Time of Performance:** Engineer shall perform the Basic Services in accordance with the following:

- 2.6.1 Phase I - Preliminary Design - 260 calendar days for each Construction Package separately;
- 2.6.2 Phase II - Final Design - 410 calendar days for each Construction Package separately;
- 2.6.3 Phase III - Construction Phase Services shall be completed at reasonable intervals in conjunction with the progress of the Project construction and for the period of construction time stated in the Construction Documents;
- 2.6.4 Time taken for review of Phase I and Phase II designs by City personnel shall be in addition to the calendar day periods specified above. In the preparation of the Project Schedule, Engineer shall allow at a minimum, 40 calendar days for City review of Phase I, and 40 calendar days for City review of Phase II; and
- 2.6.5 Upon written request of Engineer to the Director and the Director's approval, and with respect to Projects covered by the Consent Decree, subject to the terms in Paragraphs 2.1.22 through 2.1.26 inclusive, the City shall grant time extensions during each Phase for any delays caused by the City or other agencies with which the services must be coordinated and over which Engineer has no control.
- 2.6.6 The Engineer's failure to meet the Consent Decree timeline for this Project could impact future project awards as a prime consultant related to other Consent Decree projects.
- 2.6.7 Notwithstanding any other provision in this Agreement, to the extent that a delay related to milestone review of Services covered by the Consent Decree is solely caused by the City's failure to comply with its specified deadlines for review times, then the time for delivery of the Services will be extended by the number of days that the City's milestone review exceeds the applicable review period.

2.7 **Engineer's Invoices**

- 2.7.1 Unless instructed otherwise in writing by the Director, Engineer must invoice the City for all Phase I amounts plus all Phase I-related Additional Services and Reimbursable Expenses before the Director issues a Notice to Proceed for Phase II.
- 2.7.2 Unless instructed otherwise in writing by the Director, Engineer must invoice the City for all Phase II lump sum payments plus all Phase II-related Additional Services and Reimbursable Expenses before the Director issues a Notice to Proceed for Phase III.
- 2.7.3 The amounts set out in the Phases I, II, and III Notices to Proceed shall constitute Engineer's total compensation under the Contract for a Construction Package unless the Director requests in writing an Additional Service or Reimbursable Expense not related to any of the above phases.
- 2.7.4 If Director and Engineer do not agree to the lump sum amount for such Construction Package, then the Director may send notice to the Engineer deleting such Construction Package from the Contract.
- 2.7.5 To receive fees for Phase I Services, Engineer shall submit copies of original invoices showing the corresponding Phase I Services and associated costs performed for each Construction Package and

- not previously invoiced. The invoice must include itemizations supporting the costs included. The itemization shall include, where applicable:
- 2.7.5.1 A breakdown of the type and cost of each item included within the definition of Reimbursable Expenses;
 - 2.7.5.2 A breakdown of the individual expenditures allowable as travel costs in the definition of Reimbursable Expenses;
 - 2.7.5.3 The actual invoice cost of Consultant Subcontract Cost, including a copy of the Consultant's invoice;
 - 2.7.5.4 The number of hours expended by Engineer's employees times the Fully-Burdened Labor Rate for said employee for each Construction Package and upon request by the Director a copy of employee time sheets;
 - 2.7.5.5 Reasonable costs of contract personnel and personnel employed through employment agencies; and
 - 2.7.5.6 A breakdown of the work performed in the Construction Package and a percent of the total that is completed.
- 2.7.6 To receive fees for Additional Services, Engineer shall submit copies of original invoices showing the corresponding Additional Services performed and not previously invoiced. The invoice must include itemizations supporting the costs included. The itemization shall include, where applicable:
- 2.7.6.1 A breakdown of the type and cost of each item included within the definition of Reimbursable Expenses;
 - 2.7.6.2 A breakdown of the individual expenditures allowable as travel costs in the definition of Reimbursable Expenses;
 - 2.7.6.3 The actual invoice cost of Consultant Subcontract Cost, including a copy of that the Consultant's invoice;
 - 2.7.6.4 The number of hours expended by Engineer's employees times the Fully-Burdened Labor Rate for each Additional Service and upon request by the Director a copy of employee time sheets;
 - 2.7.6.5 Reasonable contract personnel cost of personnel and personnel employed through employment agencies; and
 - 2.7.6.6 A reference to the work description in the applicable Notice to Proceed that authorized the item.
- 2.7.7 With each monthly invoice Engineer shall submit a copy of the updated Project Schedule, a brief narrative of the services performed in the preceding month, and a list of the planned activities for the following month. Any request for modification of the approved Project Schedule shall be submitted by Engineer in writing for the Director's consideration.
- 2.7.8 Claims for Additional Services shall be submitted for payment within a maximum of 60 days from the date of completion of the Additional Service.
- 2.7.9 Upon request of the Director, Engineer shall submit reports to the Director for informational purposes, showing all of the information set out in this Section, although such information shall not affect the method by which Engineer is paid.

2.8 **Insurance.** Engineer shall provide and maintain certain insurance in full force and effect at all times during the term of this Contract and any extensions thereto. Such insurance is described as follows.

2.8.1 **Risks and Limits of Liability**

2.8.1.1 Engineer shall maintain the following insurance coverages in the following amounts:

<u>COVERAGE</u>	<u>LIMIT OF LIABILITY</u>
Workers' Compensation	<ul style="list-style-type: none"> • Texas Statutory for Workers' Compensation
Employer's Liability	<ul style="list-style-type: none"> • Bodily Injury by accident \$500,000 (each accident) • Bodily Injury by Disease \$500,000 (policy limit) • Bodily Injury by Disease \$500,000 (each employee)
Commercial General Liability: Including Broad Form Coverage, Bodily Injury and Property Damage (Products and Completed Operations required when Physical Operations performed)	<ul style="list-style-type: none"> • \$1,000,000 Limit each Occurrence and \$2,000,000 aggregate per 12-month period
Automobile Liability	<ul style="list-style-type: none"> • \$1,000,000 combined single limit for (1) Any Auto or (2) All Owned, Hired, and Non-Owned Autos
Professional Liability	<ul style="list-style-type: none"> • \$2,000,000 Limit per claim; \$4,000,000 aggregate
Excess Liability, as needed	<ul style="list-style-type: none"> • As needed, Commercial General Liability, Automobile Liability, and/or Professional Liability limits required above may be satisfied by any combination of Primary and Excess Limits
Aggregate Limits are per 12-month policy period unless otherwise indicated.	

2.8.2 **Insurance Coverage.** At all times during the term of this Contract and any extensions or renewals, Engineer shall provide and maintain insurance coverage that meets the Contract requirements. Prior to beginning performance under the Contract, at any time upon the Director's request, or each time coverage is renewed or updated, Engineer shall furnish to the Director current certificates of insurance evidencing adequate coverage, as necessary. Engineer shall be responsible for and pay (a) all premiums and (b) any claims or losses to the extent of any deductible amounts. Engineer waives any claim it may have for premiums or deductibles against the City, its officers, agents, or employees. Engineer shall also require all subcontractors or consultants to provide proof of insurance coverage meeting all requirements stated above.

2.8.3 **Form of insurance.** The form of the insurance shall be approved by the Director and the City Attorney; such approval (or lack thereof) shall never (a) excuse non-compliance with the terms of this Section, or (b) waive or estop the City from asserting its rights to terminate this Contract. The policy issuer shall (1) be admitted and authorized to transact insurance business in Texas, or (2) be an eligible non-admitted insurer in the State of Texas and have a Best's rating of at least B+, and a Best's Financial Size Category of Class VI or better, according to the most current Best's Key Rating Guide.