

ENGINEERING SERVICES AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

THIS AGREEMENT is between **Harris County**, a body corporate and politic under the laws of the State of Texas, hereinafter called "County", acting herein for the **Harris County Toll Road Authority (HCTRA)**, a division of the County, and **HNTB Corporation**, hereinafter called the "Engineer" or "Company".

WITNESSETH:

WHEREAS, the County proposes to hire the Engineer to provide engineering design and analysis required for the sequence of construction, traffic control phasing and narratives and revenue protection during construction for the permanent transition of Toll Road Operations to an all-electronic roadway environment - Countywide in Harris County, Texas, hereinafter called the "Project";

WHEREAS, the Engineer has represented to the County that it is qualified and prepared to perform all of the services described in the Scope of Services, Appendix A, attached hereto and incorporated herein by reference as if copied herein verbatim (Scope of Services), and has submitted a proposal to provide professional engineering services for the Project;

WHEREAS, the County is satisfied that the Engineer is capable of performing the necessary services required for the Project and desires to contract with the Engineer to perform the services described in the Scope of Services;

WHEREAS, the provisions of Chapter 262, Texas Local Government Code, Competitive Bidding Law do not apply to the proposed agreement because the contract is for professional engineering services;

WHEREAS, the County has determined and found that it would be in the best interest of the County to delegate to the Executive Director of HCTRA supervisory and management authority over the Engineer; and

WHEREAS, the Engineer will control the methods and means in performing the work set out in the Scope of Services;

NOW, THEREFORE, in consideration of the mutual covenants and conditions set forth below, the parties agree as follows:

1. General

- a. In performing professional engineering services under this Agreement, the Engineer will function solely and exclusively for the benefit of the County and not for the benefit of the contractors for the Project or any other party. All services rendered by the Engineer under this Agreement shall be performed under the supervision of HCTRA. The Engineer shall render services in accordance with generally accepted professional standards and use the degree of care and skill reasonably necessary to ensure compliance with all applicable laws and regulations.
- b. The Engineer shall be responsible for the professional quality, technical accuracy and the coordination of all deliverable documents and services furnished by the Engineer under this Agreement. The Engineer shall, without additional compensation, correct or revise all errors and deficiencies in its documents.
- c. The Engineer will collaborate with the County's personnel to facilitate the implementation of a Project Database within the County's Electronic Document Management System known as "CAPTRAC". The Electronic Document Management System will provide electronic management that shall govern the distribution and file copies of all Project related correspondence, reports, plans, and technical data. The County and the Engineer will use "CAPTRAC" to facilitate the effective electronic exchange of Project information and documents with members of the design team and other interested stakeholders.
- d. The Engineer will collaborate with the County's personnel to facilitate the maintenance of the Project Database. Project files shall be entered into the database by the Engineer on a timely basis and made available by the County on "CAPTRAC" at all times for performance of daily Project activities. Other documents, including those used for legal review, audit requests/requirements, and open records request purposes, shall be entered by the County staff assisting the Engineer team. The Engineer shall also ensure that all Project files are appropriately entered into the database:
 1. At all critical milestones;
 2. At established periodic intervals; and
 3. Following completion of the work as a final Project record, including applicable record drawings.

2. Scope of Services

The services to be provided herein in regard to the Project are defined in Appendix A ("Scope of Services").

3. Compensation and Payment

a. The Engineer shall be entitled to payments based on hourly rates and reimbursement as set forth in this section, and the Engineer agrees that such payment will constitute full compensation for the performance of services under this Agreement. The County shall not be obligated to pay in excess of **\$5,516,500.00** and the Engineer shall not be obligated to perform further services hereunder once such sum has been earned, except to the extent that HCTRA has given prior written authorization to perform additional services and receive compensation therefore from funds in excess of such figure and within the maximum sum available under 3.c.

(1) The Engineer shall be entitled to payments based upon hourly billing for defined services and any additional services not included in the Scope of Services under this Agreement, including changes in the contractual scope of work and revision of work satisfactorily performed, provided that such additional services will be performed only when approved in advance and authorized by the County, and will be reimbursed at the raw salary rates in effect at that time, times a multiplier as set forth below, to the extent that such direct salary costs and subcontracts are reasonable and necessary for the performance of such services. The reimbursable hourly raw salary rates cannot exceed those set forth in Appendix B. The Engineer shall also be entitled to expense reimbursement as set forth in Appendix B, provided that miscellaneous expenses, if any, may be reimbursed hereunder only when HCTRA determines that incurring such expenses is not required as part of the original Scope of Services and provides written approval of such expense in advance of it being incurred. Payment will be made on the basis of certified time and expense records and in accordance with those payment procedures set forth in subparagraph b., below. Billing rates will have a 3.0 multiplier on raw salary rates.

(2) Where subcontractors are employed by the Engineer to perform services specified in this Agreement, the Engineer will be reimbursed for subcontractors' salaries and hourly rates, including overtime rates, on the same basis as described for the Engineer's own personnel in subparagraph a. (1), of this Paragraph. Reimbursement to the Subcontractor for non-salary costs incurred by subcontractors will be on the same basis as if the costs were incurred by the Engineer. The Engineer will be paid a subcontract administrative fee equal to ten percent (10%) of all subcontractor invoiced amounts. Total contract amounts shall include subcontractor fees.

b. It is understood and agreed that monthly payments will be made to the Engineer by the County based on the following procedures: On or about the

fifteenth day of each month during the performance of services hereunder and on or about the fifteenth day of the month following completion of all services hereunder, the Engineer shall submit to the County two (2) copies of invoices showing the amounts due for services performed during the previous month, set forth separately for work under this Agreement and for additional services (accompanied by supporting certified time and expense records of such charges in a form acceptable to the County Auditor). It is specifically understood that any requests for travel reimbursements shall comply with those procedures for travel reimbursement to County employees established by the Harris County Auditor. HCTRA shall review such invoices and approve them within ten (10) calendar days with such modifications as are consistent with this Agreement and forward same to the County Auditor. The County shall pay each such invoice as approved by the County Auditor within twenty (20) calendar days after the County Auditor's approval of same. Invoices are due and payable net 30 days from receipt.

- c. It is expressly understood and agreed that the County has available the total maximum sum of **\$5,516,500.00** as hereinafter certified available for the purpose of satisfying the County's obligations under the terms and provisions of this Agreement. The County shall not be liable under any circumstances or any interpretations hereof for any costs under the Agreement except for those certified available for this Agreement by the Harris County Auditor, as evidenced by the issuance of a purchase order by the Harris County Purchasing Agent for the certified amount. Once the funds are expended for the purpose of satisfying the County's obligations under the terms and provisions of this Agreement, the County shall have no further obligations nor shall the Engineer be required to perform further services hereunder.

4. Time of Performance

It is understood and agreed that the time for performance of the Engineer's services under this Agreement shall begin with receipt of the Notice to Proceed and end **1460** calendar days from that date, except to the extent continued performance after that date is authorized in writing by the Executive Director of HCTRA or his designee. The Engineer is responsible for notifying HCTRA thirty days prior to the end of the contract.

5. The County's Option to Terminate

- a. The County has the right to terminate this Agreement at its sole option at any time, with or without cause, by providing written notice of such intention to terminate and by stating in said notice the "Termination Date." Upon such termination, the County shall compensate the Engineer in accordance with Paragraph 3., above, for those services that were provided under this Agreement prior to its termination and that have not been previously invoiced to the County. The Engineer's final invoice for said services will be presented

to and paid by the County in the same manner set forth in Paragraph 3. b., above.

- b. Termination of this Agreement and payment in settlement as described in subparagraph a. of this Paragraph shall extinguish all rights, duties, obligations, and liabilities of the County and the Engineer under this Agreement and this Agreement shall be of no further force and effect; provided, however, such termination shall not act to release the Engineer from liability for any previous default either under this Agreement or under any standard of conduct set by law. No termination of this Agreement shall have the effect of terminating the Engineer's obligations under Sections 7 (Delays and Damages), 8 (Inspection of the Engineer's Books and Records), 12 (Appearance as Witness), or 15 (Indemnification).
- c. If the County shall terminate this Agreement as provided in this Paragraph, no fees of any type, other than fees due and payable at the Termination Date, shall thereafter be paid to the Engineer.
- d. The County's rights and options to terminate this Agreement, as provided in any provision of this Agreement shall be in addition to, and not in lieu of, any and all rights, actions and privileges otherwise available under law or equity to the County by virtue of this Agreement or otherwise. Failure of the County to exercise any of its rights, actions, options or privileges to terminate this Agreement as provided in any provision of this Agreement shall not be deemed a waiver of any rights, actions or privileges otherwise available under the law or equity with respect to any continuing or subsequent breaches of this Agreement or of any other standard of conduct set by law.
- e. Copies of all completed and partially completed documents prepared under this Agreement shall be delivered to the County upon the Engineer's receipt of termination payment when and if this Agreement is terminated.

6. Source of Fee Payments

The County intends to pay for design and construction with the proceeds from the sale and issuance of bonds and a yearly revenue fund account. It is expressly acknowledged that all payments owing for Engineering services performed under this Agreement shall be made solely from these sources of funds for financing design and construction of the Project. The County shall be under no liability under this Agreement to make payment to the Engineer from any other source. In addition, the County reserves the right, at its sole discretion, at any time prior to issuance by the County of the written notice to proceed as provided in Paragraph 4., above, to cancel this Agreement and in the event of such cancellation, the Engineer shall not be entitled to any payment, nor have any claim for compensation or damages resulting from such cancellation. In no

event shall the liability of the County under this Agreement exceed the amount hereunder certified as available by the County Auditor.

7. Delays and Damages

Except as otherwise provided herein, the Engineer agrees that no other charges or claims for damage shall be made by it against the County for any delays or hindrances occurring during the progress of the Engineer in providing to the County the services specified in this Agreement.

8. Inspection of the Engineer's Books and Records

The Engineer will permit the County, or any duly authorized agent of HCTRA, to inspect and examine the pertinent books and records of the Engineer, but only for the purpose of verifying the direct salary costs, overtime work, and out-of-pocket expenses for additional services charged to the Project described in and contemplated by Paragraph 3. a., above.

9. Personnel, Equipment, and Material

- a. The Engineer represents that it presently has, or is able to obtain, adequate qualified personnel in its employment for performance of the services required under this Agreement and that the Engineer shall furnish and maintain, at its own expense, adequate and sufficient personnel and equipment, in the opinion of HCTRA, to perform the services when and as required and without delays. It is understood that HCTRA will approve assignment and release of all key engineering personnel and that the Engineer shall submit written notification of all key engineering personnel changes monthly for HCTRA's approval prior to the implementation of such changes. Services described in this Agreement shall be performed under the direction of an engineer licensed to practice professional engineering in the State of Texas.
- b. All employees of the Engineer or a subcontractor of the Engineer shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of the Engineer or a subcontractor of the Engineer who, in the opinion of HCTRA, is incompetent or by his conduct becomes detrimental to the Project shall, upon request of HCTRA, immediately be removed from association with the Project.
- c. Except as otherwise specified, the Engineer shall furnish all equipment, transportation, supplies, and materials required for its operations under this Agreement.

10. Subletting

The Engineer shall not sublet, assign, or transfer all or any part of the services in this Agreement without the prior written approval of HCTRA. Responsibility to HCTRA for sublet work shall remain with the Engineer.

11. Conferences

At the request of HCTRA, the Engineer shall provide appropriate personnel for conferences at its offices, or attend conferences at the various offices of HCTRA, or at the site of the Project, and shall permit inspections of its offices by HCTRA, or others when requested by HCTRA.

12. Appearance as Witness

If requested by the County, or on its behalf, the Engineer shall prepare such engineering exhibits and plats as may be requested for all hearings and trials related to the Project and, further, it shall prepare for and appear at conferences and shall furnish competent expert engineering witnesses to provide such oral testimony and to introduce such demonstrative evidence as may be needed throughout all trials and hearings with reference to any litigation relating to the Project. Compensation for trial preparation and appearance by the Engineer in courts regarding litigation matters will be made in accordance with the provisions of Paragraph 3. a. (1), above.

13. Compliance with Laws

The Engineer shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any matter affecting the performance of this Agreement, including, without limitation, Worker's Compensation laws, minimum and maximum salary and wage statutes and regulations, licensing laws and regulations. When required, the Engineer shall furnish the County with certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees specified above.

The Engineer shall strictly comply with Section 2251.022 Texas Government Code, and shall require that its subcontractors fully comply with Section 2251.023 Texas Government Code.

14. Insurance

The Engineer shall obtain, keep and maintain any and all insurance that may be required by law or that may be required by any agreement the County has with any other party concerning the Project. The Engineer's insurance policies shall be the primary policies. Under no circumstances will the County be liable for any

policy premiums or deductibles. The Minimum Insurance Requirements are attached hereto as Appendix C.

15. Indemnification

TO THE EXTENT ALLOWED BY LAW, THE ENGINEER AGREES TO INDEMNIFY AND HOLD HARMLESS THE COUNTY, ITS 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 THE ENGINEER (INCLUDING THE ENGINEER'S AGENTS, EMPLOYEES, VOLUNTEERS, AND SUBCONTRACTORS/CONSULTANTS UNDER CONTRACT, OR ANY OTHER ENTITY OVER WHICH THE ENGINEER EXERCISES CONTROL) IN THE PERFORMANCE OF THE SERVICES DEFINED IN THIS AGREEMENT. THE ENGINEER SHALL ALSO SAVE THE COUNTY HARMLESS FROM AND AGAINST ANY AND ALL EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, IN PROPORTION TO THE ENGINEER'S LIABILITY, THAT MIGHT BE INCURRED BY THE COUNTY, IN LITIGATION OR OTHERWISE RESISTING SUCH CLAIMS OR LIABILITIES.

16. Delivery of Notices, Etc.

- a. All routine written notices, invoices, change orders, etc. are to be delivered to the Deputy Director, Tolling Operations at the Harris County Toll Road Authority, 7701 Wilshire Place Drive, Houston, Texas 77040, or at such other place or places as the County may designate by written notice delivered to the Engineer.

All formal notices and demands under this Agreement shall be delivered to the Harris County Toll Road Authority, 7701 Wilshire Place Drive, Houston, Texas 77040, Attention: Executive Director.

- b. All written notices, demands, and other papers or documents to be delivered to the Engineer under this Agreement shall be delivered to HNTB Corporation, 1301 Fannin Street, Suite 2000, Houston, Texas 77002, Attn: Michael Welfl, PE, or at such other place or places as the Engineer may designate by written notice delivered to the County.

17. Reports of Accidents, Etc.

Within 24 hours after the occurrence of any accident or other event which results in, or might result in, injury to the person or property of any third person (other than an employee of the Engineer), whether or not it results from or involves any action or failure to act by the Engineer or any employee or agent of the Engineer and which arises in any manner from the performance of this Agreement, the

Engineer shall send a written report of such accident or other event to the County, setting forth a full and concise statement of the facts pertaining thereto. The Engineer shall also immediately send the County a copy of any summons, subpoena, notice, or other documents served upon the Engineer, its agents, employees, or representatives, or received by it or them, in connection with any matter before any court arising in any manner from the Engineer's performance of work under this Agreement.

18. The County's Acts

Anything to be done under this Agreement by the County may be done by such persons, corporations, or firms as the County may designate.

19. Limitations

Notwithstanding anything herein to the contrary, all covenants and obligations of the County under this Agreement shall be deemed to be valid covenants and obligations only to the extent authorized by the Act creating the County and permitted by the laws and the Constitution of the State of Texas.

20. Captions Not a Part Hereof

The captions or subtitles of the several sections and divisions of this Agreement constitute no part of the content hereof, but are only labels to assist in locating and reading the provisions hereof.

21. Controlling Law, Venue

This Agreement shall be governed and construed in accordance with the laws of the State of Texas. This Agreement shall be performed entirely in Harris County, Texas and the parties hereto acknowledge that venue is proper in Harris County, Texas, for all disputes arising hereunder and waive the right to sue or be sued elsewhere.

22. Successors and Assigns

The County and the Engineer bind themselves and their successors, executors, administrators and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of the other party, in respect to all covenants of this Agreement.

23. Independent Contractor

Notwithstanding any provision of this Agreement, the Engineer shall at all times act as an independent contractor, and not as an employee of the County, and the

Engineer shall be responsible for the means and methods employed in performing services hereunder.

24. Certificate of Interested Parties (Form 1295)

Texas law requires all parties who enter into any contract with the County that must be approved by Commissioners Court to disclose all Interested Parties. Texas Ethics Commission Form 1295 must be completed in its entirety. If changes to this Form are necessary during this Agreement, the Engineer will notify and send the County an updated and complete version.

25. Additional Statutory Requirements

Company represents and certifies that, at the time of execution of this Agreement, Company (including any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same) is not listed by the Texas Comptroller of Public Accounts pursuant to Chapters 2252 or 2270 of the Texas Government Code, nor will Company engage in scrutinized business operations or other business practices that would cause it to be listed during the term of this Agreement.

26. Historically Underutilized Business Requirements

The State of Texas maintains a Historically Underutilized Business Program, which identifies any business at least 51 percent owned by an Asian Pacific American, African American, Hispanic American, Native American, woman and/or Service Disabled Veteran, who reside in Texas and actively participate in the control, operations and management of the entity's affairs as a Historically Underutilized Business.

In accordance with Section 284.007 of the Texas Transportation Code, the County shall make a good faith effort to meet or exceed goals provided under Section 284.007(b) for awarding contracts and subcontracts associated with a project it operates, maintains, or constructs to historically underutilized businesses. For purposes of this section, the term "historically underutilized business" has the meaning given to such term in subsection (d) of Section 284.007, Transportation Code.

The Contractor agrees to reasonably assist the County in its efforts to meet or exceed the goals provided under Section 284.007(b) for awarding contracts or subcontracts to historically underutilized businesses.

The Contractor will take affirmative steps to assure that minority firms and specifically women's business enterprises are used when possible and will not be discriminated against on the grounds of race, color, religious creed, sex, or national origin in consideration for an award.

Affirmative steps shall include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises; and
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises.

The Contractor shall submit evidence of compliance to Appendix X when requested by County.

[SIGNATURE PAGE FOLLOWS]

APPROVED AS TO FORM:

CHRISTIAN D. MENEFFEE
County Attorney

HARRIS COUNTY

DocuSigned by:
Marcy Linebarger
By: 0B97D5E185374E3...
MARCY LINEBARGER
Assistant County Attorney

By: _____
LINA HIDALGO
County Judge

Date: _____

HNTB CORPORATION

DocuSigned by:
Michael Voinis
By: FF3BB9AC2243481...
Name: Michael voinis
Title: Vice President
Date: 7/15/2022

APPENDIX A

SCOPE OF SERVICES

HNTB Corporation

Engineering Design and Analysis Related to the Implementation and Revenue Protection of the All-Electronic Toll Conversion Project

PROJECT LOCATION / DESCRIPTION

Services shall be performed by HNTB (“Engineer”) in support of the All-Electronic Toll (“AET”) Conversion Project (“Project”) for the entire Harris County Toll Road System including related projects developed as part of the AET Project analysis. The Project has been divided into nine Sections (“Sections”) for the purpose of this contract and are defined as:

- Section 1 – Sam Houston Tollway North from IH 45 to US 290
- Section 2 – Sam Houston Tollway Central from US 290 to IH 10
- Section 3 – Sam Houston Tollway South from IH 10 to US 59 / IH 69
- Section 4 – Sam Houston Tollway Southwest from US 59 / IH 69 to SH 288
- Section 5 – Sam Houston Tollway Southeast from SH 288 to IH 45
- Section 6 – Sam Houston Tollway East from IH 45 to SH 225
- Section 7 – Fort Bend Parkway Extension (in Harris County)
- Section 8 – Hardy Toll Road South from IH 610 to Beltway 8
- Section 9 – Hardy Toll Road North from Beltway 8 to IH 45

Additional segments of the HCTRA system may require AET Conversion or revenue protection support to maintain consistent operations across the entire HCTRA system. Support on these segments will be performed as requested by HCTRA and include:

- Sam Houston Tollway East at the Ship Channel Bridge from SH 225 to IH 10
- Sam Houston Tollway Northeast from US 90 to US 59 / IH 69
- Hardy Toll Road Airport Connector
- Hardy Toll Road Downtown Connector from IH 610 to IH 10
- Westpark Tollway from IH 610 to Harris County line
- Katy Managed Lanes from IH 610 to SH 6

GENERAL REQUIREMENTS

Program Management Consultant (PMC). The Harris County Toll Road Authority (HCTRA) has designated Entech Civil Engineers, Inc. (ECE) as its Program Management Consultant (PMC). ECE shall be the prime point of contact for the Engineer.

The Engineer, as requested, shall support HCTRA and the PMC related to the implementation and construction sequencing of the Project to: i) minimize driver impact, ii) account for public safety and iii) to protect toll system revenue. This includes supporting development of AET Design Guidelines and Criteria and updates to HCTRA's toll policies and business rules for the conversion and operations of an AET system. The objectives of the AET Project are to increase safety; improve system reliability; provide resilience and sustainability; provide equity and accessibility for the users; incorporate innovative and evolving technology; and provide stewardship and accountability to the community.

The Engineer shall function as an extension of HCTRA and the PMC's resources by providing qualified technical and professional personnel to perform the duties and responsibilities assigned under the terms of this Agreement. HCTRA, at its option, may elect to expand, reduce or delete the extent of each work element as described below in Services to be Provided by the Engineer, provided such action does not alter the intent of this Contract.

There is no guarantee that all of the services described in this Contract will be assigned by HCTRA during the term of this Contract. HCTRA, at its option, may elect to have services set forth herein performed by other consultants or HCTRA staff.

For design services performed, the Engineer shall prepare all work in accordance with the latest version of applicable HCTRA and/or TxDOT procedures, specifications, manuals, guidelines, standard drawings, standard specifications or previously approved special provisions and special specifications to include *HCTRA Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, May 2017 and May 2019 update, the Roadway Design Manual May 2022 update, Hydraulic Design Manual 2019 update, the Texas Manual on Uniform Traffic Control Devices (TMUTCD) 2011 Revision 2, Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014*, and other TxDOT approved manuals. When design criteria are not identified in TxDOT's manuals, the Engineer shall notify HCTRA and refer to the *American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Street, Latest Edition*. All tolling design work will comply with HCTRA's latest guidelines.

SERVICES TO BE PROVIDED BY THE ENGINEER

SCOPE OF SERVICES

(Function Code 102 - Feasibility Studies)

I. DATA COLLECTION

- A. Data Collection. The purpose of this task is to collect available data to support of the design of the Project.

1. Support the PMC with the collection of data and perform review of the following:
 - a) Copies of as-built or existing plans for the roadway, toll plaza, etc.
 - b) Traffic information, including number and width of toll lanes and, if applicable, shoulders for each toll location.
 - c) Tolling equipment layout.
 - d) Toll system Integrator's design criteria and requirements.
 - e) Existing and forecasted traffic volumes.
 - f) Accident reporting data along the system.
 - g) Existing HCTRA Business Rules.
 - h) Existing HCTRA Tolling Policies.
 - i) Available Corridor Major Investment Studies and System Investment Grade Traffic and Revenue Studies.
 - j) Roadway inventory information, including the number of lanes, speed limits, pavement widths and rating, bridge widths and ratings, and ROW widths.
 - k) Local Major Thoroughfare Plan and Houston-Galveston Area Council (H-GAC)'s Regional Transportation Plan.
 - l) EZ Tag Information by ZIP code and/or US Census geography.

II. SCHEMATIC CONCEPT DEVELOPMENT

The Engineer shall take a systemwide approach to the implementation of the AET Project that considers all Sections and will analyze various concepts, construction methods and toll technologies to minimize disruption to traffic and reduce the loss of toll revenue. The Engineer shall develop diagrammatic concepts, construction sequencing and system phasing exhibits that can be used as an overall, and consistent method for the individual Sections. These concepts will be used to develop an overall traffic control and phasing approach for Sections 1 through 9 noted in the Project Location/ Description above.

A. Concept Layout Review.

The Engineer shall review the schematic layouts (prepared by others). The Engineer will take a systemwide approach while analyzing the design

alternatives submitted for the Engineer's review and will focus on systemwide traffic operations and compatibility with the toll collection equipment requirements. The Engineer will consider toll integrator constraints, ROW limitations, system equipment and network limitations, alternative toll technologies, traffic and revenue impacts during the review. If ROW is a limiting factor to meet one or more of the Project's objectives, the Engineer will provide recommendations to the Section design leads to examine the feasibility, impact, and cost for potential ROW acquisition as part of the alternative concept. Conceptual alternatives related to traffic movement may include ramp relocation, ramp reversals, addition of auxiliary lanes to mainlanes and/or frontage roads, and improvements to cross-streets and/or intersections. During the review, the Engineer shall consider the following:

1. Efficient use of the allocated ROW.
2. Control of Access (COA) and driveway locations.
3. Roadway and intersection geometry.
4. Cross-Sections.
5. Bicycle and Pedestrian design.
6. Drainage and Hydraulic design.
7. Stopping Sight distance.
8. Level-of-Service.
9. Traffic and signal operations.
10. Construction, ROW, easement, and utility costs.
11. Construction sequencing.
12. Traffic control during construction.
13. Roadside safety appurtenances.
14. Large guide signage.
15. Environmental mitigation (For example: Noise Walls, Storm Water Best Management Practices (BMP's), etc.).
16. Bridge Layouts and Clearance.
17. Accommodation of ultimate corridor configuration.

18. Accommodation of future cross street expansion as described in local thoroughfare plan if applicable.
19. Avoidance of utility lines, if feasible.
20. Impact of construction delays due to utility relocation delays.
21. Location of gantries, ITS, solar panels, and tolling equipment.
22. Demolition of existing mainline toll gantries.
23. Toll integrator, equipment, and network limitations.
24. Innovative toll technologies.
25. Traffic and revenue impacts.

B. Construction Sequence and Narrative.

The Engineer shall develop requirements for construction sequencing, phasing, and traffic control guidance narratives that can be utilized by the Section engineers during the schematic and detailed design process (see Section definitions above). This includes required narratives for toll system installation and scheduling coordination between contractors. As requested by HCTRA, the Engineer shall provide construction phasing requirements to the PMC and provide preliminary Traffic Control Plan (TCP) layouts at complex locations.

C. Preliminary Cost Estimates.

The Engineer shall prepare high-level cost estimates for each implementation concept and associated costs for each Section listed above. These estimates will be used to provide an overall implementation plan to minimize impact to traffic and revenue.

(Function Code 145 – Project Management)

I. PROJECT MANAGEMENT

The purpose of this task is to provide the overall management of the contract. The Engineer will set up Project files for the Engineer's use so that overall coordination and contact will be maintained with the Project Team Members (PTM), HCTRA, and the PMC.

- A. Provide general coordination with the PTMs and the PMC concerning administrative and technical issues.
- B. Quality Assurance/Quality Control Plan.

1. The Engineer shall develop, update, and maintain a Quality Assurance / Quality Control (QA/QC) Plan to document the Engineer's quality control program. The Engineer shall conduct Quality Control procedures under respective work tasks and sub-tasks.
- C. Prepare and submit monthly progress reports and invoices to HCTRA through the PMC for review and approval. The invoices will include the progress report, invoice, and schedule, and will be confirmed by the PMC based on in-progress deliverables received. The Engineer's written progress report shall describe activities performed during the reporting period by scope task; activities planned for the following period, problems encountered and actions taken to remedy them, a list of meetings attended, a list of deliverables submitted in the reporting period, a list outstanding issues that need resolution, overall status including a physical percent complete, and a financial percent complete by scope task, and estimated completion dates for the work.
 - D. Invoices are to be submitted on a monthly basis. The Engineer will prepare each invoice in the format provided by the PMC. When directed by the PMC and/or HCTRA, the Engineer shall modify the information and/or format. Invoice shall be delivered to an email address to be provided by the PMC or HCTRA at the project kick-off meeting. For contracts with Time and Materials and/or contingency work, timesheets shall be submitted with the invoice.
 - E. The Engineer will be responsible for internal documentation and administration of the Project files.

II. MEETINGS AND CONFERENCES

- A. Attend Project "kick-off" meeting held by the PMC and HCTRA. The Engineer shall also attend coordination meetings with HCTRA and PMC which will be scheduled on an as-needed basis.

(Function Code 163 – Miscellaneous)

I. PROJECT SCHEDULE

- A. Assess Alternative Schedules. The Engineer shall develop comparison of alternative schedules for various construction phasing and delivery options.

II. RISK MANAGEMENT

- A. Update Risk Register. The Engineer shall support the PMC with updates to the risk register to track, manage, and resolve identified program risks. Updates will be developed in a Word or Excel format provided by the PMC.

- B. Apply Risk Register Concepts. Where applicable, apply risk register concepts to the project and alternative cost and schedule estimates via risk-based quantitative analysis methods.

III. PERFORMANCE METRICS

- A. Develop Key Performance Indicators and Metrics. The Engineer shall support the PMC with development of goals for success measurement including a readiness scoring system to determine if and when a Project is ready to move forward into the next stage of implementation. Key performance indicators and metrics shall be developed to gauge the success of the Project, as well as individual project elements. These metrics will serve as valuable decision-making tools useful for identifying trends and proactively implementing course corrections.
- B. Identify Criteria and Establish Tracking Mechanisms. The Engineer shall identify exit criteria for all stages of the Project and set up tracking mechanisms for the for each stage of implementation.
- C. Update, Monitor and Report Metrics. The Engineer shall update, monitor, and report on metrics via project meetings and briefing reports.

IV. CAPITAL IMPROVEMENT PLANNING

- A. Capital Improvement Plan (CIP) Development. As requested by HCTRA, the Engineer shall develop a CIP that identifies both near-term and long-term project improvements that will increase safety, reliability and provide equity and accessibility to the community. The CIP will include high-level project cost estimates and projected years of expenditure based on project needs. The Engineer will develop a Draft and Final version of the CIP which will be reviewed by the PMC and HCTRA.

V. COORDINATION WITH TRAFFIC MODELERS

- A. Traffic Modeling shall be performed by others. The Engineer shall support traffic modeling coordination by developing the AET Design Guidelines and Criteria. If requested by HCTRA, The Engineer shall review traffic models to respond to changing development and assess impacts of changes to adjacent and intersecting roadways under local agency jurisdiction with respect to HCTRA's toll policies and business rules for the conversion and operations of an AET system. The Engineer will provide comments on the Traffic Model to HCTRA and the PMC but will not be responsible for updating or maintaining the model.

VI. BUSINESS RULES AND TOLL POLICIES

- A. Identify Updates to Existing Customer Service Center Requirements and Business Rules. As requested by HCTRA, the Engineer shall review the existing Customer Service Center requirements and Business Rules for necessary updates and modification generated from the AET Project. The Engineer shall coordinate with HCTRA and to identify “must haves,” “nice to haves,” and “not necessities”, including technical, functional, and performance requirements. A list of draft requirements and Business Rules revisions shall be submitted to the PMC and HCTRA for consideration.
- B. Identify Updates to Existing Tolling and Violation Policies. As requested by HCTRA, the Engineer shall review the existing Tolling and Violation Policies with special consideration given to AET impact and potential revenue loss. The Engineer shall develop a list of potential customer service updates to improve customer equity while minimizing revenue loss for HCTRA’s consideration. The Engineer will support HCTRA in the development and implementation of selected customer service updates.

VII. REVENUE PROTECTION PLAN

- A. The Engineer will review HCTRA’s current and future traffic and revenue studies and prepare a near-term revenue plan that incorporates this gross revenue forecast along with agency operating and maintenance costs to estimate net revenues. The plan will also incorporate impacts from future operational changes such as new business rules, equity programs, and violation changes.
- B. The plan will also incorporate the CIP cash flow estimates.
- C. The Engineer will regularly monitor and document actual revenues, collections, leakage, agency costs, operational changes, actual CIP implementations and other items impacting cash flow.
- D. The Engineer will update from time to time the revenue protection plan and provide recommendations to HCTRA, as needed, to improve/protect future revenues.

VIII. WHITE PAPERS, BRIEFINGS, AND STUDIES

As directed by HCTRA, the Engineer shall conduct special studies and develop white papers concerning Toll Operations Implementation and Revenue Protection of the AET Project for the countywide system, including related projects developed as part of the AET Project analysis. The Engineer shall support HCTRA and the PMC by developing white papers, briefings, and studies on various topics to investigate and develop recommendations for specialty items such as the following:

- A. Toll system improvements and technology advancements. The Engineer will review and advise HCTRA on the latest toll technology advancements and innovations used in the industry. If requested, the Engineer shall prepare an analysis of operational and cost impacts associated with the implementation of new technology on the HCTRA system.
- B. Industry Best Practices. The Engineer will conduct industry scans to identify lessons learned and best practices from other toll agencies and toll system vendors and contractors that have converted to AET. This may include site visits, establishing working groups, agency/vendor interviews resulting in documented minutes and summary briefings.
- C. Toll System Performance. If requested, the Engineer shall evaluate the performance of the existing roadside toll collection system, support troubleshooting of the existing system, and provide report recommendations for improvements to increase transaction accuracy and revenue collection.
- D. EZ Tag Penetration. The Engineer shall evaluate the current EZ Tag penetration rates along the system and provide recommendations to increase tag penetration.
- E. Equity and Accessibility. Support development of non-traditional payment options for the unbanked customer and the impact to HCTRA's revenues. Other analyses on this topic may include improving access in and around the HCTRA System.
- F. Customer Service Center. If requested, analyze existing customer service center operations, and provide recommendations to improve operational efficiency.
- G. Implement Results of Special Studies. The Engineer shall develop a plan to implement results of special studies as directed by HCTRA.

APPENDIX B

Maximum Raw Salary Rates HNTB Corporation

JOB CLASSIFICATION	Maximum Raw Salary Rate	
Sr. Technical Advisor	\$180.00	
Project Principal	\$165.00	
Project Manager	\$130.00	
Deputy Project Manager	\$110.00	
Toll Specialist	\$125.00	
Sr. Project Engineer	\$106.00	
Project Engineer	\$85.00	
Engineer III	\$70.00	
Engineer-In-Training II	\$55.00	
Engineer-In-Training I	\$40.00	
Sr. ITS Designer	\$82.00	
CADD Supervisor	\$68.00	
CADD Technician	\$62.00	
Sr. Public Involvement Representative	\$85.00	
Public Involvement Representative	\$55.00	
Sr. Planner/Designer	\$85.00	
Planner/Designer	\$60.00	
GIS Specialist	\$45.00	
Sr. Project Scheduler	\$80.00	
Project Scheduler	\$60.00	
Sr. Construction Inspector	\$65.00	
Construction Inspector	\$45.00	
Project Administrator	\$60.00	
Document Control Specialist	\$50.00	
Admin/Clerical	\$40.00	
Note: Maximum Raw Salary Rates shown above are effective for the first year of the approved contract and are subject to an annual escalation rate of 4% effective on the contract anniversary date.		
Maximum Reimbursable Expense		
Mileage	Per mile	IRS Approved Rate
Delivery	Each	At cost
Reproduction	Each	At cost

APPENDIX C

MINIMUM INSURANCE REQUIREMENTS

During the term of the Contract, the Contractor at its sole cost and expense shall provide primary commercial insurance of such type and with such terms and limits as may be reasonably associated with the Contract. As a minimum, the Contractor 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, USL&H (United States Longshore & Harbor Workers Compensation Act) and other endorsements if applicable to the project, and in accordance with state law.

Employers' Liability

- Each Accident: \$1,000,000
- Disease—Each Employee: \$1,000,000
- Policy Limit: \$1,000,000

- B. Commercial General Liability**, including but not limited to the coverage indicated below. Coverage shall not exclude or limit Products/Completed Operations, Contractual Liability, or Cross Liability. Where exposure exists, the County may require coverage for watercraft, blasting, collapse, explosions, blowout, cratering, underground damage, pollution, or other coverage. *Harris County shall be named Additional Insured on primary/non-contributory basis.*

- Each Occurrence: \$1,000,000
- Personal and Advertising Injury: \$1,000,000
- Products/Completed Operations: \$1,000,000
- General Aggregate (per project): \$2,000,000

- C. Automobile Liability**, including coverage for all owned, hired, and non-owned vehicles used in connection with the contract. *Harris County shall be named Additional Insured on primary/non-contributory basis.*

- Combined Single Limit-Each Accident: \$1,000,000

- D. Umbrella/Excess Liability** (*Harris County shall be named Additional Insured on primary/non-contributory basis*).

- Each Occurrence/Aggregate: \$1,000,000

- E. Professional/Errors & Omissions Liability**

- Per Claim/Aggregate: \$1,000,000

The County reserves the right to require additional insurance if necessary. Coverage shall be issued by companies licensed by the Texas Department of Insurance (TDI) to do business in Texas and who have an A.M. Best rating of at least A-. Contractor shall furnish evidence of such insurance to the County in the form of unaltered insurance certificates. If any part of the contract is sublet, insurance shall be provided by or on behalf of any subcontractor, and shall be sufficient to cover their portion of the contract. Contractor shall furnish evidence of such insurance to the County as well.

Policies of insurance required by the contract shall waive all rights of subrogation against the County, its officers, employees and agents. If any applicable insurance policies are cancelled, materially changed, or non-renewed, contractor shall give written notice to the County at least 30 days prior to such effective date and within 30 days thereafter, shall provide evidence of suitable replacement policies. Failure to keep in force the required insurance coverage may result in termination of the contract. Upon request, certified copies of original insurance policies shall be furnished to the County.

The requirements stipulated in this attachment do not establish limits of contractor liability.

APPENDIX X**Disclosure of M/WBE Participation**

Name of MBE/WBE Certified Firm	B2Z Engineering, LLC
Certified by:	City of Houston
Address / City / State / Zip:	900 Threadneedle, Suite 120, Houston, TX 77079
Name of Contact Person:	Aisha Gonzalez
Email address for Contact Person:	aisha@b2zeng.com
Telephone number for Contact Person:	956-585-3773
Percent of Subcontract:	15.2%
Description of services:	GIS and Base Mapping Services
6-digit NAICS code for work to be performed:	541370 and 541380

Name of MBE/WBE Certified Firm	Disha Services Inc.
Certified by:	City of Houston
Address / City / State / Zip:	2809 Miller Ranch Road, #417, Pearland, TX 77584
Name of Contact Person:	Dhirendra Srivastava
Email address for Contact Person:	info@dishausa.com
Telephone number for Contact Person:	832-687-9551
Percent of Subcontract:	4.4%
Description of services:	Engineering Services
6-digit NAICS code for work to be performed:	236220 and 541330

Name of MBE/WBE Certified Firm	IEA Inc.
Certified by:	City of Houston
Address / City / State / Zip:	1225 North Loop West, Suite 320, Houston, TX 77008
Name of Contact Person:	Shakeel Ahmed
Email address for Contact Person:	sahmed@ieaworld.com
Telephone number for Contact Person:	832-494-3800
Percent of Subcontract:	15.4%
Description of services:	Fiber Optic Cable, Highway/Street/Bridge Construction
6-digit NAICS code for work to be performed:	236220 and 237130

**ORDER OF COMMISSIONERS COURT
Authorizing an Agreement with HNTB Corporation**

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 AN AGREEMENT WITH
HNTB CORPORATION TO PROVIDE ENGINEERING DESIGN AND ANALYSIS
REQUIRED FOR THE SEQUENCE OF CONSTRUCTION, TRAFFIC CONTROL
PHASING AND NARRATIVES AND REVENUE PROTECTION DURING
CONSTRUCTION FOR THE PERMANENT TRANSITION OF TOLL ROAD
OPERATIONS TO AN ALL-ELECTRONIC ROADWAY ENVIRONMENT -
COUNTYWIDE**

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 County Judge thereupon announced that the motion had duly and lawfully carried and that the order had been duly and lawfully adopted. The order adopted follows:

IT IS ORDERED that:

1. The Harris County Judge is authorized to execute on behalf of Harris County an agreement in an amount not to exceed \$5,516,500.00 with HNTB Corporation to provide engineering design and analysis required for the sequence of construction, traffic control phasing and narratives and revenue protection during construction for the permanent transition of Toll Road Operations to an all-electronic roadway environment - Countywide. The Agreement is incorporated by reference and made a part of this order for all intents and purposes as though set out in full word for word.

2. All Harris County officials and employees are authorized to do any and all things necessary or convenient to accomplish the purposes of this order.