CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

February 25, 2026
AGENDA ITEM #6

Discuss and consider approving an agreement with STV Incorporated for the design and construction phase services for the 183A Added Capacity Project

Strategic Plan Relevance:	Stewardship, Collaboration and Safety
Department:	Engineering
Contact:	Mike Sexton, P.E., Director of Engineering
Associated Costs:	$9,991,090.75
Funding Source:	Project Funds/General Fund/Operating Fund/Bond Sale Funds
Action Requested:	Consider and act on draft resolution

Project Description/Background: 183A Phases I and II constructed three tolled lanes northbound and southbound from SH 45 to Hero Way, opening to traffic in March 2007 and April 2012, respectively. Since opening, significant growth along the 183A corridor prompted CTRMA's extension of tolled lanes northward to SH 29, with the 183A Phase III project opening to traffic in April 2025.

The continued growth along the corridor has resulted in increased traffic volumes on the existing tolled lanes with projections of congestion occurring along 183A Phases I and II in the near term.

The 183A Added Capacity Project consists of the widening of 183A Phases I and II tolled lanes adding a fourth lane to the northbound and southbound lanes from State Highway 45 to Hero Way.

Previous Actions & Brief History of the Program/Project: Staff issued a request for qualifications for design and construction phase services for the 183A Added Capacity Project on October 15, 2025. On December 17, 2025, the Board authorized the Executive Director to negotiate with the most highly qualified provider.

The Executive Director has negotiated a satisfactory agreement with STV Incorporated in accordance with Policy Code 401.035.

Financing: Project Funds/General Fund/Operating Fund/Bond Sale Funds

Action requested/Staff Recommendation: Approve the proposed agreement with STV Incorporated and authorize the Executive Director to finalize and execute the agreement on behalf of the Mobility Authority, in the form or substantially the same form attached hereto as Exhibit "A".

Backup provided:
Draft Resolution
Draft agreement

GENERAL MEETING OF THE BOARD OF DIRECTORS
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

RESOLUTION NO. 26-0XX

APPROVING AN AGREEMENT WITH STV INCORPORATED FOR DESIGN AND CONSTRUCTION SERVICES FOR THE 183A ADDED CAPACITY PROJECT

WHEREAS, the Mobility Authority is developing the 183A Added Capacity Project, which consists of the widening of the existing 183A Phase II tolled lanes and adding a fourth lane within the center median to the northbound and southbound lanes from SH 45 to Hero Way; and

WHEREAS, following the preliminary design and environmental study conducted by the Mobility Authority for the 183A Added Capacity Project, on October 15, 2025, the Mobility Authority issued a request for qualifications (RFQ) to firms interested in providing the design and construction phase services; and

WHEREAS, on December 17, 2025, the Board approved the selection of STV Incorporated as the most highly qualified respondent to provide design and construction phase services to the Mobility Authority for the 183A Added Capacity Project to the Mobility Authority, and authorized the Executive Director to negotiate an agreement with STV Incorporated; and

WHEREAS, the Executive Director has negotiated an agreement with STV Incorporated to provide design and construction phase services to the Mobility Authority for the 183A Added Capacity Project to the Mobility Authority, and recommends the Board approve the proposed agreement, in the form or substantially the same form attached hereto as Exhibit A; and

NOW THEREFORE, BE IT RESOLVED that the Board hereby approves the proposed agreement with STV Incorporated and authorizes the Executive Director to finalize and execute the agreement on behalf of the Mobility Authority, in the form or substantially the same form attached hereto as Exhibit A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 25th day of February 2026.

Submitted and reviewed by:

James M. Bass
Executive Director

Approved:

Robert W. Jenkins, Jr.
Chairman, Board of Directors

Exhibit A

CONTRACT FOR PROFESSIONAL SERVICES
183A Added Capacity
with Work Authorizations

THIS CONTRACT FOR PROFESSIONAL SERVICES is made by and between the Central Texas Regional Mobility Authority, 3300 N Interstate 35 Frontage Rd #300, Austin, Texas 78705, hereinafter called "Mobility Authority," and **STV Incorporated**, having its principal business address at **13809 Research Blvd., Suite 300 Austin, TX 78750**, hereinafter called "Engineer," for the purpose of contracting for professional services.

WITNESSETH

WHEREAS, the Mobility Authority desires to contract for services generally described as professional services, and more specifically described in Article 1; and

WHEREAS, pursuant to a qualifications-based selection conducted in accordance with the Professional Services Procurement Act (Tex. Gov't Code Sec. 2254.001, et. seq.), and the Mobility Authority's Policy Code regarding the procurement of professional services, the Mobility Authority has selected the Engineer to provide the needed Services; and

WHEREAS, the Engineer has agreed to provide the Services subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, the Mobility Authority and the Engineer, in consideration of the mutual covenants and agreements herein contained, do hereby mutually agree as follows.

AGREEMENT

ARTICLE 1. SCOPE OF SERVICES. The Mobility Authority and the Engineer will furnish items and perform those services for fulfillment of this Contract as identified in Attachment B, Services to be Provided by the Mobility Authority and Attachment C, Services to be Provided by the Engineer. All services provided by the Engineer will conform to standard engineering practices and applicable rules and regulations of the Texas Engineering Practices Act and the rules of the Texas Board of Professional Engineers and Land Surveyors. This Contract does not obligate the Mobility Authority to proceed with the Services or authorize the performance of work through a Work Authorization.

ARTICLE 2. CONTRACT PERIOD. This Contract becomes effective when fully executed by all parties hereto and it shall terminate on **06/30/2032** (the "Contract Period") unless the Contract Period is: (1) modified by written supplemental agreement prior to the date of termination as set forth in Attachment A, General Provisions, Article 6, Supplemental Agreements; (2) extended due to a work suspension as provided for in Attachment A, Article 3, Paragraph C; or (3) otherwise terminated in accordance with Attachment A, General Provisions, Article 15, Termination. A Work Authorization issued prior to expiration of this Contract may remain in effect until such time as the Services authorized under that Work Authorization are complete and accepted by the Mobility Authority. The terms of this Contract shall continue in effect in respect to any work authorization remaining in effect following the expiration of this Contract. No new Services may be added to a Work Authorization, and no new Work Authorization may be issued after the termination date of this Contract.

ARTICLE 3. COMPENSATION.

A. Amount Payable. The amount payable under this Contract will be determined by the individual work authorizations authorized over the contract period.

B. Basis of Payment. The basis of payment is identified in Attachment E, Fee Schedule. Reimbursement of costs incurred under a work authorization shall be in accordance with Attachment E, Fee Schedule. The amount presented in Attachment E is the amount the Mobility Authority will agree to pay, and the Engineer will agree to

accept as full and sufficient compensation and reimbursement, for the performance of all services as set forth in this Contract and work authorizations.

C. Reimbursement of Eligible Costs. To be eligible for reimbursement, the Engineer's costs must (1) be incurred in accordance with the terms of a valid work authorization; (2) be in accordance with Attachment E, Fee Schedule; and (3) comply with cost principles set forth at 48 CFR Part 31, Federal Acquisition Regulation (FAR 31). Satisfactory progress of work shall be maintained as a condition of payment.

D. Engineer Payment of Subconsultants. No later than ten (10) days after receiving payment from the Mobility Authority, the Engineer shall pay all subconsultants for work performed under a subcontract authorized hereunder. The Mobility Authority may withhold all payments that have or may become due if the Engineer fails to comply with the ten-day payment requirement. The Mobility Authority may also suspend the work under this Contract or any work authorization until subconsultants are paid. This requirement also applies to all lower tier subconsultants, and this provision must be incorporated into all subcontracts.

E. Non-compensable Time. Time spent by the Engineer's personnel or subconsultants in an administrative or supervisory capacity not related to the performance of the Services is not compensable and shall not be billed to the Mobility Authority. Time spent on work in excess of what would reasonably be considered appropriate under industry standards for the performance of such Services is not compensable, unless that additional time spent resulted from the Mobility Authority's delay in providing information, materials, feedback, or other necessary cooperation to the Engineer. The Mobility Authority will not pay any hourly compensation to the Engineer for Services or deliverables required due to an error, omission, or fault of the Engineer.

F. Consistency of Classification/Duties and Hourly Rates. Time spent by the Engineer's personnel or subconsultants to perform services or functions capable of being carried out by other, subordinate personnel with a lower hourly rate shall be billed at a rate equivalent to that of the applicable qualified subordinate personnel.

G. Taxes. All payments to be made by the Mobility Authority to the Engineer pursuant to this Contract are inclusive of federal, state, or other taxes, if any, however designated, levied, or based. The Mobility Authority acknowledges and represents that it is a tax-exempt entity under Sections 151.309, et seq., of the Texas Tax Code. A "Texas Sales and Use Tax Exemption Certificate" is available from the Mobility Authority for use toward project-related expenses upon request. Title to any consumable items purchased by the Engineer in performing this Contract shall be deemed to have passed to the Mobility Authority at the time the Engineer takes possession or earlier, and such consumable items shall immediately be marked, labeled, or physically identified as the property of the Mobility Authority, to the extent practicable.

ARTICLE 4. INVOICE REQUIREMENTS

A. Monthly Invoices. The Engineer shall request reimbursement of costs incurred by submitting an itemized invoice in a form acceptable to the Mobility Authority. If the work is eligible for payment through an agreement with another entity, the billing statement shall be in a form and include such detail as that entity may require, including a breakdown of Services provided on a Project-by-Project basis, together with other Services requested by the Mobility Authority. The Engineer is authorized to submit requests for reimbursement no more frequently than monthly and no later than ninety (90) days after costs are incurred, with the exception of the closing of the Mobility Authority's fiscal year. Notwithstanding the ninety (90) day submittal deadline, all requests for reimbursement of costs incurred during the Mobility Authority's fiscal year (ending June 30th) must be submitted no later than 15 days after June 30th, or the next business day if that date should occur on a weekend or holiday.

B. Form of Invoice. The invoice shall show the work authorization number for each work authorization included in the billing, the total amount earned to the date of submission, and the amount due and payable as of the date of the current billing statement for each work authorization. The invoice shall indicate if the work has been completed or if the billing is for partial completion of the work. The fixed fee will be paid in proportion to the percentage of work completed per work authorization.

C. Overhead Rates. The Engineer shall use the provisional overhead rate indicated in Attachment E. If a periodic escalation of the provisional overhead rate is specified in Attachment E, the effective date of the revised provisional overhead rate must be included.

D. Thirty Day Payments. Upon receipt of an invoice that complies with all invoice requirements set forth in this Article, the Mobility Authority shall make a good faith effort to pay the amount which is due and payable within thirty (30) days. If the Mobility Authority disputes a request for payment by the Engineer, the Mobility Authority agrees to pay any undisputed portion of the invoice within this 30-day window. The Mobility Authority shall notify the Engineer of the disputed amount no later than the 21st day after the date the Mobility Authority receives the monthly invoice.

E. Withholding Payments. The Mobility Authority reserves the right to withhold payment of up to 110% of the disputed amount of the Engineer's invoice in the event of any of the following: (1) If a dispute over the work or costs thereof is not resolved within a thirty day period; (2) pending verification of satisfactory work performed; or (3) required reports (including third-party verifications, if any) are not received. In the event that payment is withheld, the Mobility Authority shall notify the Engineer and give a remedy that would allow the Mobility Authority to release the payment.

F. Invoice and Progress Report Submittal Process.

(1) The invoice submittal shall include:

- Progress report
- Forecast for completion of the scope
- Invoice (in the required format provided by the Mobility Authority)
- Supporting documents as requested

(2) A progress report shall be submitted to the Mobility Authority at least once each calendar month;

(3) An update to the Project schedule (using critical path method analysis) indicating the Project's overall status versus the baseline schedule (originally submitted with the Project Management Plan) shall be submitted to the Mobility Authority at least once each calendar month;

(4) In the event that invoices are not submitted on a monthly basis, a monthly submittal of the progress report and Project schedule information will be required nevertheless;

(5) The invoice submittal shall not be later than the 10th day of the month following service unless otherwise directed; if submitted after the 10th day, it will be processed the following month;

(6) As it relates to the Mobility Authority's end of fiscal year closeout efforts, the Engineer shall submit the invoice including their services through June 30th for a given year no later than 15 days after June 30th, or the next business day if that date should occur on a weekend or holiday;

(7) The Mobility Authority's Director of Engineering will review the invoices to confirm that supporting documentation is included, and for compliance with the Contract and consistency with the submitted progress report; and

(8) The invoice will either be recommended for approval by the Mobility Authority's Director of Engineering, or the Mobility Authority's Director of Engineering will return it to the Engineer for required correction.

G. Effect of Payments. No payment by the Mobility Authority shall relieve the Engineer of its obligation to perform on a timely basis the Services required under this Contract. If, prior to acceptance of any Service, product or other deliverable, the Executive Director determines that said Service, product or deliverable does not satisfy the requirements of this Contract, the Executive Director may reject same and require the Engineer to correct or cure same within a reasonable period of time and at no additional cost to the Mobility Authority.

H. Audit. The Mobility Authority shall have the right to examine the books and records of the Engineer. The Engineer shall maintain all books, documents, papers, accounting records and other evidence pertaining to cost

incurred and shall make such materials available at its office during the Contract Period and for four (4) years from the date of final payment under this Contract or until any pending litigation has been completely and fully resolved, and the Executive Director approves of the destruction of records, whichever occurs last. The Mobility Authority or any of its duly authorized representatives, TxDOT, Texas State Auditor, the Federal Highway Administration ("FHWA"), the United States Department of Transportation Office of Inspector General and the Comptroller General shall have access to any and all books, documents, papers and records of the Engineer which are directly pertinent to this Contract for the purpose of making audits, examinations, excerpts and transcriptions.

ARTICLE 5. WORK AUTHORIZATIONS. The Executive Director will issue work authorizations to authorize all work under this contract. Refusal to accept a work authorization in the form prescribed by the Mobility Authority may be grounds for termination of the contract. The Mobility Authority shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to work not directly associated with or prior to the full execution of a work authorization. Terms and conditions governing the use of work authorizations are set forth in Attachment A, General Provisions, Article 1.

ARTICLE 6. SIGNATORY WARRANTY. The undersigned signatory for the Engineer hereby represents and warrants that he or she is an officer of the organization for which he or she has executed this Contract and that he or she has full and complete authority to enter into this Contract on behalf of the firm. These representations and warranties are made for the purpose of inducing the Mobility Authority to enter into this Contract.

ARTICLE 7. NOTICES. A notice, demand, request, report, and other communication required or permitted under this Contract, or which any party may desire to give, shall be in writing and shall be deemed to have been given on the sooner to occur of (i) receipt by the party to whom the notice is hand-delivered, with a written receipt of notice provided by the receiving party, or (ii) two days after deposit in a regularly maintained express mail receptacle of the United States Postal Service, postage prepaid, or registered or certified mail, return receipt requested, express mail delivery, addressed to such party at their address set forth below, or to such other address as a party may from time to time designate under this article, or (iii) receipt of an electronic mail transmission (attaching scanned documents in a format such as .pdf or .tif) for which confirmation of receipt by the other party has been obtained by the sending party:

Engineer:	**Mobility Authority:**
Robin Handel STV Incorporated 13809 Research Blvd., Suite 300 Austin, TX 78750	Director of Engineering Central Texas Regional Mobility Authority 3300 N Interstate 35 Frontage Rd #300 Austin, Texas 78705

ARTICLE 8. INCORPORATION OF PROVISIONS. Attachments A through H are attached hereto and incorporated into this Contract as if fully set forth herein.

ARTICLE 9. ENTIRETY OF AGREEMENT. This writing, including attachments and addenda, if any, embodies the entire agreement and understanding between the parties hereto, and there are no agreements and understandings, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby. No alteration, change or modification of the terms of the Contract shall be valid unless made in writing signed by both parties hereto.

ARTICLE 10. PRIORITY OF DOCUMENTS/ORDER OF PRECEDENCE. In the event of any conflict between the Contract and other documents, the order of precedence shall be as set forth below: A) Supplemental Work Authorization; B) Work Authorization; C) Contract Amendments; D) Contract; E) RFP/ RFQ; F) Engineer's Response to RFP/RFQ.

Each party is signing this agreement on the date stated under that party's signature.

THE ENGINEER

(Signature)

(Printed Name)

(Title)

(Date)

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

(Signature)

(Printed Name)

(Title)

(Date)

Attachments and Exhibits to Contract for Professional Services
Incorporated into the Contract by Reference

Attachments	Title
A	General Provisions
B	Services to Be Provided by the Mobility Authority
C	Services to Be Provided by the Engineer
D	Key Personnel
E	Fee Schedule
F	Work Schedule
G	Computer Graphics Files for Document and Information Exchange, if applicable
H	Subcontracting

ATTACHMENT A

GENERAL PROVISIONS
INDEX TO PROVISIONS

ATTACHMENT A

GENERAL PROVISIONS

ARTICLE 1. WORK AUTHORIZATIONS

A. Use. The Engineer shall not begin any work until the Executive Director and the Engineer have signed a Work Authorization and the Engineer has received a Notice to Proceed as defined in the Work Authorization. Costs incurred by the Engineer before a Work Authorization is fully executed or after the completion date specified in the Work Authorization are not eligible for reimbursement. The Executive Director will issue Work Authorizations to authorize all work under this Contract. All work must be completed on or before the completion date specified in the Work Authorization.

B. Contents. Each Work Authorization shall include: (1) scope of Services including types of Services to be performed and a full description of the work required to perform those Services (2) a full description of general administration tasks exclusive to that Work Authorization (3) a work schedule (including beginning and ending dates) with milestones; (4) the basis of payment whether cost-plus, unit cost, lump sum, or specified rate; and (5) a Work Authorization budget using fees set forth in Attachment E Fee, Schedule. The Engineer shall not include additional contract terms and conditions in the Work Authorization. In the event of any conflicting terms and conditions between the Work Authorization and the Contract, the terms and conditions of the Contract shall prevail and govern the work and costs incurred.

C. Work Authorization Budget. A Work Authorization budget shall be prepared by the Engineer and set forth in detail (1) the computation of the estimated cost of the work as described in the Work Authorization, (2) the estimated time (hours/days) required to complete the work at the hourly rates established in Attachment E, Fee Schedule; (3) a work plan that includes a list of the work to be performed, (4) a stated maximum number of calendar days to complete the work, and (5) a cost-not-to-exceed-amount or unit or lump sum cost and the total cost or price of the Work Authorization. The Mobility Authority will not pay items of cost that are not included in or rates that exceed those approved in Attachment E.

D. No Guaranteed Work. Work Authorizations are issued at the sole discretion of the Executive Director. While it is the Executive Director's intent to issue Work Authorizations hereunder, the Engineer shall have no cause of action conditioned upon the lack or number of Work Authorizations issued.

E. Incorporation into Contract. Each Work Authorization shall be signed by both parties and become a part of the Contract. No Work Authorization will waive the Mobility Authority's or the Engineer's responsibilities and obligations established in this Contract. The Engineer shall promptly notify the Mobility Authority of any event that will affect completion of the Work Authorization.

F. Supplemental Work Authorizations. Before additional work may be performed or additional costs incurred beyond those authorized in a Work Authorization, a change in a Work Authorization shall be enacted by a written Supplemental Work Authorization executed within the period of performance specified in the Work Authorization. The Mobility Authority shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to additional work not directly associated with the performance or prior to the execution of the Supplemental Work Authorization. The Engineer shall allow adequate time for review and approval of the Supplemental Work Authorization by the Executive Director prior to expiration of the Work Authorization. Any Supplemental Work Authorization must be executed by both parties within the Contract Period established in Article 2 of the Contract.

F-1. More Time Needed. If the Engineer determines or reasonably anticipates that the work authorized in a Work Authorization cannot be completed before the specified completion date, the Engineer shall promptly notify the Executive Director. The Executive Director may, at his sole discretion, extend the Work Authorization period by execution of a Supplemental Work Authorization.

F-2. Changes in Scope. Changes that would modify the scope of the work authorized in a Work Authorization must be enacted by a written Supplemental Work Authorization. If the change in scope affects the amount payable under the Work Authorization, the Engineer shall prepare a revised Work Authorization budget for the Executive Director’s approval. The Engineer must allow adequate time for

the Executive Director to review, negotiate, and approve any request for a Supplemental Work Authorization prior to expiration of the Work Authorization.

G. Deliverables. Upon satisfactory completion of the Work Authorization, the Engineer shall submit a letter of completion along with the deliverables as specified in the executed Work Authorization to the Executive Director for review and acceptance.

ARTICLE 2. PROGRESS

A. Progress meetings. As required and detailed in the Work Authorizations or as otherwise directed by the Executive Director, the Engineer shall from time to time during the progress of the work confer with the Executive Director. The Engineer shall prepare and present such information as may be pertinent and necessary or as may be requested by the Executive Director in order to evaluate features of the work.

B. Conferences. At the request of the Executive Director and as required and detailed in the Work Authorizations, conferences shall be held at the Engineer's office, the office of the Mobility Authority, or at other locations designated by the Executive Director. These conferences may also include evaluation of the Engineer's Services and work when requested by the Executive Director.

C. Inspections. If federal funds are used to reimburse costs incurred under this Contract, the work and all reimbursements will be subject to periodic review by the U. S. Department of Transportation.

D. Reports. The Engineer shall promptly advise the Executive Director in writing of events that have a significant impact upon the progress of a Work Authorization, including:

1. problems, delays, adverse conditions that will materially affect the ability to meet the time schedules and goals, or preclude the attainment of project work units by established time periods; this disclosure will be accompanied by statement of the action taken or contemplated, and any State or federal assistance needed to resolve the situation; and
2. favorable developments or events which enable meeting the work schedule goals sooner than anticipated.

E. Corrective Action. Should the Executive Director determine that the progress of work does not satisfy the work schedule or other deadlines set forth in a Work Authorization, the Executive Director shall review the work schedule with the Engineer to determine the nature of corrective action needed. The Executive Director’s participation in reviewing the work schedule and determining corrective actions needed will not, in any way, excuse the Engineer from any responsibility or costs associated with the failure to timely perform the Services.

ARTICLE 3. SUSPENSION OF WORK AUTHORIZATION

A. Notice. Should the Executive Director desire to suspend a Work Authorization but not terminate the Contract, the Executive Director may provide written notification to the Engineer, giving ten (10) business days prior notice. Both parties may waive the ten (10) business day notice requirement in writing.

B. Reinstatement. All or part of a Work Authorization may be reinstated and resumed in full force and effect within thirty (30) days of receipt of written notice from the Executive Director to resume the work. Both parties may waive the thirty-day notice in writing.

C. Contract Period Not Affected. If the Executive Director suspends a Work Authorization, the Contract Period as determined in Article 2 of the Contract is not affected and the Contract and the Work Authorization will terminate on the date specified unless the Contract is amended to authorize additional time.

D. Limitation of Liability. The Mobility Authority shall have no liability for work performed or costs incurred prior to the date authorized by the Executive Director to begin work, during periods when work is suspended, or after the completion of the Contract or Work Authorization.

ARTICLE 4. ADDITIONAL WORK

A. Notice. If the Engineer is of the opinion that any assigned work is beyond the scope of a Work Authorization and constitutes additional work beyond the Services to be provided under the Work Authorization, it shall promptly notify the Executive Director and submit written justification presenting the facts of the work and demonstrating how the work constitutes supplementary work.

B. Supplemental Agreement. If the Executive Director finds that the work does constitute additional work, the Executive Director shall so advise the Engineer, and a written supplemental agreement will be executed as provided in General Provisions, Article 6, Supplemental Agreements.

C. Limitation of Liability. The Mobility Authority shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to additional work not directly associated with or prior to the execution of a supplemental agreement.

ARTICLE 5. CHANGES IN WORK

A. Work Previously Submitted as Satisfactory. If the Engineer has submitted work in accordance with the terms of this Contract and Work Authorization(s) but the Executive Director requests changes to the completed work or parts thereof which involve changes to the original scope of Services or character of work under the Contract and Work Authorization(s), the Engineer shall make such revisions as requested and as directed by the Executive Director, provided the work is reflected in a Supplemental Work Authorization.

B. Work Does Not Comply with Contract. If the Engineer submits work that does not comply with the terms of this Contract or Work Authorization(s), the Executive Director shall instruct the Engineer to make such revision as is necessary to bring the work into compliance with the Contract or Work Authorization(s). No additional compensation shall be paid for these revisions or re-work.

C. Errors/Omissions. The Engineer shall make revisions to the work authorized in this Contract which are necessary to correct errors or omissions appearing therein, when required to do so by the Executive Director. No additional compensation shall be paid for this work.

ARTICLE 6. SUPPLEMENTAL AGREEMENTS

A. Need. The terms of this Contract may be modified if the Executive Director determines that there has been a significant increase or decrease in the duration, scope, cost, complexity or character of the services to be performed. A supplemental agreement will be executed to authorize such significant increases or decreases.

B. When to Execute. Both the Engineer and the Executive Director must execute a supplemental agreement within the Contract Period specified in Article 2 of the Contract.

ARTICLE 7. DATA OWNERSHIP

A. Work for Hire. All services provided under this Contract are considered work for hire and as such all data, basic sketches, charts, calculations, plans, specifications, models, animations, and other documents and files created or collected under the terms of this Contract are the property of the Mobility Authority.

B. Ownership of Plans. Notwithstanding any provision in this Contract or in common law or statute to the contrary all of the plans, tracings, estimates, specifications, computer records, discs, tapes, proposals, sketches, diagrams, charts, calculations, correspondence, memoranda, survey notes, and other data and materials, and any part thereof, created, compiled or to be compiled by or on behalf of the Engineer, including all information prepared for or posted on the Mobility Authority's website and together with all materials and data furnished to it by the Mobility Authority, are and at all times shall be and remain the property of the Mobility Authority and shall not be subject to any restriction or limitation on their further use by or on behalf of the Mobility Authority. Engineer hereby assigns any and all rights and interests it may have in the foregoing to the Mobility Authority, and Engineer hereby agrees to provide reasonable cooperation as may be requested by the Mobility Authority in connection with the Mobility Authority's efforts to perfect or protect rights and interests in the foregoing; and if at any time demand be made by the Mobility Authority for any of the above materials, records, and documents, whether after termination of this Contract or otherwise, such shall be turned over to the Mobility Authority without delay. The Mobility Authority hereby grants the Engineer a revocable license to retain and utilize the foregoing materials for the limited purpose of fulfilling Engineer's obligations under this Contract, said license to terminate and expire upon the earlier to occur of (a) the completion of Services described in this Contract or (b) the termination of this Contract, at which time the Engineer shall deliver to the Mobility Authority all such materials and documents. If the Engineer or a subconsultant desires later to use any of the data generated or obtained by it in connection with any Project or any other portion of the work product resulting from the Services, it shall secure the prior written approval of the Executive Director. The Engineer shall retain its copyright and ownership rights in its own back-office databases and computer software that are

not developed for the Mobility Authority or for purposes of this Contract. Intellectual property developed, utilized, or modified in the performance of Services for which the Engineer is compensated under the terms of this Contract shall remain the property of the Mobility Authority, Engineer hereby agrees to provide reasonable cooperation as may be requested by the Mobility Authority in connection with the Mobility Authority's efforts to perfect or protect such intellectual property. The Mobility Authority retains an unrestricted license for software packages developed in whole or in part with Mobility Authority funds.

C. Separate Assignment. If for any reason the agreement of the Mobility Authority and the Engineer set forth in subarticle 7.B regarding the ownership of work product and other materials is determined to be unenforceable, either in whole or in part, the Engineer hereby assigns and agrees to assign to the Mobility Authority all right, title, and interest that Engineer may have or at any time acquire in said work product and other materials, without royalty, fee or additional consideration of any sort, and without regard to whether this Contract has terminated or remains in force. The Mobility Authority hereby acknowledges, however, that all documents and other work product provided by the Engineer to the Mobility Authority and resulting from the Services performed under this Contract are intended by the Engineer solely for the use for which they were originally prepared. Notwithstanding anything contained herein to the contrary, the Engineer shall have no liability for the use by the Mobility Authority of any work product generated by the Engineer under this Contract on any Project other than for the specific purpose and Project for which the work product was prepared.

D. Disposition of Documents. All documents prepared by Engineer and all documents furnished to Engineer by the Mobility Authority shall be delivered to the Mobility Authority upon request. Engineer, at its own expense, may retain copies of such documents or any other data which it has furnished the Mobility Authority under this Contract, but further use of the data is subject to permission by the Mobility Authority.

E. Release of Design Plan. The Engineer (1) will not release any roadway design plan created or collected under this Contract except to its subconsultants as necessary to complete the Contract; (2) shall include a provision in all subcontracts which acknowledges the Mobility Authority's ownership of the design plan and prohibits its use for any use other than the project identified in this Contract; and (3) is responsible for any improper use of the design plan by its employees, officers, or subconsultants, including costs, damages, or other liability resulting from improper use. Neither Engineer nor any subconsultant may charge a fee for any portion of the design plan created by the Mobility Authority."

ARTICLE 8. PUBLIC INFORMATION AND CONFIDENTIALITY

A. Public Information. The Mobility Authority will comply with Government Code, Chapter 552, (the "Public Information Act") in the release of information produced under this Contract. The requirements of Subchapter J, of the Public Information Act, may apply to this Contract and the Engineer agrees that the Contract can be terminated if the Engineer knowingly or intentionally fails to comply with a requirement of that subchapter.

B. Confidentiality. The Engineer shall not disclose information obtained from the Mobility Authority under this Contract without the express written consent of the Executive Director. All employees of the Engineer and its subconsultants working on the Project may be required to sign a non-disclosure and confidentiality agreement.

C. Access to Information. The Engineer is required to make any information created or exchanged with the Mobility Authority pursuant to this Contract, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the Mobility Authority.

ARTICLE 9. PERSONNEL, EQUIPMENT AND MATERIAL

A. Engineer Resources. The Engineer shall furnish and maintain an office for the performance of all services, in addition to providing adequate and sufficient personnel and equipment to perform the services required under the Contract. The Engineer certifies that it presently has adequate qualified personnel in its employment for performance of the services required under this Contract, or it will be able to obtain such personnel from sources other than the Mobility Authority.

B. Removal of Employee. All employees of the Engineer assigned to this Contract shall have such knowledge and experience as will enable them to perform the duties assigned to them. The Executive Director

may instruct the Engineer to remove any employee from association with work authorized in this Contract if, in the sole opinion of the Executive Director, the work of that employee does not comply with the terms of this Contract or if the conduct of that employee becomes detrimental to the work; or for any other reason identified by the Executive Director.

C. Mobility Authority Approval of Replacement Personnel. The Engineer may not replace any Key Personnel, as designated in the applicable Work Authorization, without prior written approval of the Director of Engineering. If any Key Personnel cease to work on this Contract, the Engineer must notify the Director of Engineering in writing as soon as possible, but in any event within (3) three business days. The notification must give the reason for removal. The Engineer must receive written approval from the Director of Engineering of proposed replacement Key Personnel. The Director of Engineering's approval will be based upon the proposed replacement Key Personnel qualifications to provide the required Services. Approval will not be unreasonably withheld.

D. Liquidated Damages. The selection of Engineer to provide the Services under this Contract was based, in part, on the Key Personnel identified in Engineer's proposal. Because of the importance and unique nature of the Services to be provided by Key Personnel identified in Attachment C it is impractical to calculate the actual losses that would be suffered by the Mobility Authority by the loss of Key Personnel from the Contract. Therefore, the Engineer agrees to compensate the Mobility Authority for its losses by paying liquidated damages in the amount of $2,500 per day per Key Personnel position in Attachment C if any Key Personnel is removed by the Engineer by reassignment without prior written approval from the Director of Engineering. Liquidated damages will accrue from the date the Engineer removes the Key Personnel in Attachment C from the Contract if the parties do not agree on a replacement within (14) calendar days after the Key Personnel are removed from the Contract. If a replacement is agreed upon within that fourteen (14) calendar day period the liquidated damages will be waived. Liquidated damages shall cease when the parties agree on a substitute or when the Contract is terminated.

E. Ownership of Acquired Property. Except to the extent that a specific provision of this Contract states to the contrary, and as provided in subarticle 7.B, the Mobility Authority shall own all intellectual property acquired or developed under this Contract and all equipment purchased by the Engineer or its subconsultants under this Contract. All intellectual property and equipment owned by the Mobility Authority shall be delivered to the Director of Engineering when the Contract terminates, or when it is no longer needed for work performed under this Contract, whichever occurs first. In the event that a capital item is purchased for the sole use of the Mobility Authority, title shall pass or transfer to the Mobility Authority upon acquisition and prior to any use of the item by the Engineer.

ARTICLE 10. SUBCONTRACTING

A. Prior Approval. The Engineer shall not assign, subcontract, or transfer any portion of Services related to the work under this Contract unless specified in an executed Work Authorization or otherwise without first obtaining the prior written approval from the Executive Director. Request for approval should include a written description of the proposed services, and proposed rates .

B. Required Provisions. All subcontracts for professional services shall include the provisions included in Attachment A, General Provisions, and any provisions required by law.

C. Invoice Approval and Processing. All subconsultants shall prepare and submit their invoices on the same billing cycle and format as the Engineer (so as to be included in invoices submitted by the Engineer).

D. Engineer Responsibilities. No subcontract shall relieve the Engineer of any of its responsibilities under this Contract and of any liability for work performed under this Contract, even if performed by a subconsultant or other third party performing work for or on behalf of the Engineer.

ARTICLE 11. INSPECTION OF WORK

A. Review Rights. Under this Contract, the Mobility Authority, TxDOT, and the U.S. Department of Transportation, and any authorized representative of the Mobility Authority, TxDOT, or the U.S. Department of Transportation, shall have the right at all reasonable times to inspect, review or otherwise evaluate the work

performed hereunder and the premises in which it is being performed.

B. Reasonable Access. If any review or evaluation is made on the premises of the Engineer or a subconsultant under this Article, the Engineer shall provide and require its subconsultants to provide all reasonable facilities and assistance for the safety and convenience of the persons performing the review in the performance of their duties.

ARTICLE 12. SUBMISSION OF REPORTS

All applicable study reports shall be submitted in preliminary form for approval by the Director of Engineering before a final report is issued. The Director of Engineering's comments on the Engineer's preliminary report must be addressed in the final report. Draft reports shall be considered confidential unless otherwise indicated by the Director of Engineering.

ARTICLE 13. VIOLATION OF CONTRACT TERMS

A. Increased Costs. Violation of Contract terms, breach of Contract, or default by the Engineer shall be grounds for termination of the Contract, and any increased or additional cost incurred by the Mobility Authority arising from the Engineer's default, breach of Contract or violation of Contract terms shall be paid by the Engineer.

B. Remedies. This agreement shall not be considered as specifying the exclusive remedy for any default, and all remedies existing at law and in equity may be availed of by either party and shall be cumulative.

ARTICLE 14. TERMINATION

A. Causes. The Contract may be terminated before the stated completion date by any of the following conditions.

1. By mutual agreement and consent, in writing from both parties.
2. By the Executive Director by notice in writing to the Engineer as a consequence of failure by the Engineer to perform the Services set forth herein in a satisfactory manner or if the Engineer violates the provisions of Article 20, Gratuities.
3. By either party, upon the failure of the other party to fulfill its obligations as set forth herein, following thirty (30) days written notice and opportunity to cure.
4. By the Executive Director for his convenience and in his sole discretion, not subject to the consent of the Engineer, by giving thirty (30) days written notice of termination to the Engineer.
5. By satisfactory completion of all services and obligations described herein.

B. Measurement. Should the Executive Director terminate this Contract as herein provided, no fees other than fees due and payable at the time of termination shall thereafter be paid to the Engineer. In determining the value of the work performed by the Engineer prior to termination, the Executive Director shall be the sole judge. Compensation for work at termination will be based on a percentage of the work completed at that time. Should the Executive Director terminate this Contract under subarticles 14.A.3 & 4, the Engineer shall not incur costs during the thirty-day notice period in excess of the amount incurred during the preceding thirty (30) days.

C. Value of Completed Work. If the Engineer defaults in the performance of this Contract or if the Executive Director terminates this Contract for fault on the part of the Engineer, the Executive Director will give consideration to the following when calculating the value of the completed work: (1) the actual costs incurred (not to exceed the rates set forth in the applicable Work Authorization) by the Engineer in performing the work to the date of default; (2) the amount of work required which was satisfactorily completed to date of default; (3) the value of the work which is usable to the Mobility Authority; (4) the cost to the Mobility Authority of employing another firm to complete the required work; (5) the time required to employ another firm to complete the work; (6) delays in opening a revenue-generating Project and costs (including lost revenues) resulting therefrom; and (7) other factors which affect the value to the Mobility Authority of the work performed.

D. Excusable Delays. Except with respect to defaults of subconsultants, the Engineer shall not be in default by reason of any failure in performance of this Contract in accordance with its terms (including any failure to progress in the performance of the work) if such failure arises out of causes beyond the control and without the default or negligence of the Engineer. Such causes may include, but are not restricted to, acts of God or the public enemy, acts of the Government in either its sovereign or Contractual capacity, fires, floods, epidemics,

quarantine restrictions, strikes, freight embargoes, and unusually severe weather.

E. Surviving Requirements. The termination of this Contract and payment of an amount in settlement as prescribed above shall extinguish the rights, duties, and obligations of the Mobility Authority and the Engineer under this Contract, except for those provisions that establish responsibilities that extend beyond the Contract Period, including without limitation the provisions of Article 16.

F. Payment of Additional Costs. If termination of this Contract is due to the failure of the Engineer to fulfill its Contract obligations, the Mobility Authority may take over the project and prosecute the work to completion, and the Engineer shall be liable to the Mobility Authority for any additional cost to the Mobility Authority.

ARTICLE 15. COMPLIANCE WITH LAWS

The Engineer shall comply with all applicable federal, state and local laws, statutes, codes, ordinances, rules and regulations, and the orders and decrees of any court, or administrative bodies or tribunals in any manner affecting the performance of this Contract, including, without limitation, worker's compensation laws, minimum and maximum salary and wage statutes and regulations, nondiscrimination, licensing laws and regulations, the Mobility Authority's enabling legislation (Chapter 370 of the Texas Transportation Code), and all amendments and modifications to any of the foregoing, if any. The Engineer shall comply with all applicable Authority policies and procedures as outlined in the Mobility Authority Policy Code handbook available on the Authority's website (https://www.mobilityauthority.com/about/policy-disclaimers/code). When required, the Engineer shall furnish the Mobility Authority with satisfactory proof of its compliance therewith.

ARTICLE 16. INDEMNIFICATION

A. Indemnification. THE ENGINEER SHALL INDEMNIFY AND HOLD HARMLESS THE MOBILITY AUTHORITY AND ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS AND CONSULTANTS WHICH, FOR THE PURPOSES OF THIS CONTRACT, SHALL INCLUDE THE MOBILITY AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, FINANCIAL ADVISORS, TRAFFIC AND REVENUE ENGINEERS, TOLL OPERATIONS/COLLECTIONS FIRMS, AND UNDERWRITERS (COLLECTIVELY THE "INDEMNIFIED PARTIES") FROM ANY CLAIMS, COSTS, OR LIABILITIES OF ANY TYPE OR NATURE AND BY OR TO ANY PERSONS WHOMSOEVER, TO THE EXTENT CAUSED BY THE NEGLIGENT ACTS, ERRORS, OR OMISSIONS OF THE ENGINEER OR ITS OFFICERS, DIRECTORS, EMPLOYEES, SUBCONSULTANTS AND AGENTS WITH RESPECT TO THE ENGINEER'S PERFORMANCE OF THE WORK TO BE ACCOMPLISHED UNDER THIS CONTRACT OR ACTIONS RESULTING IN CLAIMS AGAINST THE INDEMNIFIED PARTIES. IN SUCH EVENT, THE ENGINEER SHALL ALSO INDEMNIFY AND HOLD HARMLESS THE MOBILITY AUTHORITY AND ITS OFFICERS, DIRECTORS, AND EMPLOYEES AND THE INDEMNIFIED PARTIES FROM ANY AND ALL REASONABLE AND NECESSARY EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, INCURRED BY THE MOBILITY AUTHORITY OR ANY OF THE INDEMNIFIED PARTIES IN LITIGATING OR OTHERWISE RESISTING SAID CLAIMS, COSTS OR LIABILITIES. IN THE EVENT THE MOBILITY AUTHORITY AND ITS OFFICERS, DIRECTORS, AND EMPLOYEES AND/OR ANY OF THE INDEMNIFIED PARTIES, IS/ARE FOUND TO BE PARTIALLY AT FAULT, THE ENGINEER SHALL, NEVERTHELESS, INDEMNIFY THE MOBILITY AUTHORITY AND ITS OFFICERS, DIRECTORS, AND EMPLOYEES AND/OR ANY OF THE INDEMNIFIED PARTIES FROM AND AGAINST THE PERCENTAGE OF FAULT ATTRIBUTABLE TO THE ENGINEER OR ITS OFFICERS, DIRECTORS, EMPLOYEES, SUBCONSULTANTS AND AGENTS OR TO THEIR CONDUCT.

ARTICLE 17. ENGINEER'S RESPONSIBILITY

A. Accuracy. The Engineer shall have total responsibility for the accuracy and completeness of all work prepared and completed under this Contract and shall check all such material accordingly. The Engineer shall promptly make necessary revisions or corrections resulting from its errors, omissions, or negligent acts without additional compensation.

B. Errors and Omissions. The Mobility Authority and Engineer will address errors and omissions as follows:

1. The Engineer's responsibility for all questions and/or clarification of any ambiguities arising from errors and omissions will be determined by the Executive Director.
2. A problem resulting from an error and omission may be identified during any phase of project development. The Engineer will be responsible for errors and omissions before, during, and after construction of a Project, as well as before and after Contract termination.

3. The phrase error and omission is used throughout to mean an error, an omission, or a combination of error and omission.
4. When an apparent error and omission is identified in work provided by the Engineer, the Executive Director will notify the Engineer of the problem and involve the Engineer in efforts to resolve it and determine the most effective solution, provided that the Executive Director shall ultimately determine the solution that is chosen.
5. Errors and omissions identified prior to Project construction will be corrected at the Engineer's expense with no additional cost to the Mobility Authority.
6. During and after construction, errors and omissions can potentially result in significant additional costs to the Mobility Authority that they would not have incurred if the construction plans had been correct. The resulting additional costs are considered damages that the Mobility Authority will collect from the Engineer, including through offset to amounts owed to the Engineer.
7. After a Project is constructed and is in use, there is a possibility of a Contractor claim that may involve a previous error and omission by the Engineer identified during construction; it is also possible the Engineer could be responsible for some or all of the cost of the Contractor claim. If there is a possibility of Engineer responsibility, upon notice of the Contractor claim, the Executive Director must notify the Engineer of the situation and provide the Engineer the opportunity to contribute any information to the Executive Director that may be useful in addressing the Contractor claim. The Engineer will not be involved in any discussions or negotiations with the Contractor during the claims process. Upon settlement of all previous claims with the Contractor, if additional costs are identified, the Executive Director should consider the same factors as during construction in determining the Engineer's level of responsibility.
8. The additional costs which are considered damages to the Mobility Authority and are to be recovered should represent actual cost to the Mobility Authority.
9. The Executive Director will not accept in-kind services from the Engineer as payment for additional costs owed.
10. The Engineer is responsible for promptly correcting errors and omissions without compensation. In the situation of a dispute concerning whether or not the work is compensable, the Engineer shall not delay the work.
11. A letter will be transmitted by the Executive Director formally notifying the Engineer of payment required for the error and omission and will indicate the Engineer's apparent liability for the identified additional costs. The letter will include an outline of the errors and omissions, along with the additional costs, and references to any previous points of coordination and preliminary agreements. Within 30 calendar days of the date of the letter, a response is required from the Engineer with: (a) payment, (b) a request for a meeting, or (c) a request for the Executive Director to reconsider whether the Executive Director should pursue reimbursement for the identified error and omission. If a response or payment is not received from the Engineer, the Mobility Authority may pursue legal action against the Engineer, in addition to offset of payments to the Engineer, claims against insurance and other remedies available under the Contract.
12. It is the Executive Director's responsibility to identify errors and omissions and fairly evaluate the responsibility for additional cost when applicable. It is the responsibility of the Mobility Authority staff to ensure that the Mobility Authority's business practices are professional, fair, equitable, and reasonable.

C. Professionalism. The Engineer shall perform the services it provides under the Contract: (1) with the professional skill and care ordinarily provided by competent engineers practicing under the same or similar circumstances and professional license and (2) as expeditiously as is prudent considering the ordinary professional skill and care of a competent engineer.

D. Seal. The responsible Engineer shall sign, seal and date all appropriate engineering submissions to the Mobility Authority in accordance with the Texas Engineering Practice Act and the rules of the Texas Board of Professional Engineers and Land Surveyors.

E. Resealing of Documents. Once the work has been sealed and accepted by the Director of Engineering, the Mobility Authority, as the owner, will notify the party to this Contract, in writing, of the possibility that a Mobility Authority engineer, as a second engineer, may find it necessary to alter, complete, correct, revise or add to the work. If necessary, the second engineer will affix his seal to any work altered, completed, corrected, revised or added. The second engineer will then become responsible for any alterations, additions

or deletions to the original design including any effect or impacts of those changes on the original engineer's design.

ARTICLE 18. NONCOLLUSION

A. Warranty. The Engineer warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Engineer, to solicit or secure this Contract and that it has not paid or agreed to pay any company or Engineer any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of this Contract.

B. Liability. For breach or violation of this warranty, the Mobility Authority shall have the right to annul this Contract without liability or, in its discretion, to deduct from the Contract compensation, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

ARTICLE 19. INSURANCE

The Engineer shall furnish the Mobility Authority a properly completed Certificate of Insurance approved by the Executive Director prior to beginning work under the Contract and shall maintain such insurance through the Contract Period. The Engineer shall provide proof of insurance (and the Professional Liability Insurance discussed herein) in a form reasonably acceptable by the Executive Director. The Engineer certifies that it has and will maintain insurance coverages as follows:

A. Workers Compensation Insurance. In accordance with the laws of the State of Texas and employer's liability coverage with a limit of not less than $1,000,000. This policy shall be endorsed to include a waiver of subrogation in favor of the Authority.

B. Comprehensive General Liability Insurance. With limits not less than $1,000,000 for bodily injury, including those resulting in death, and $1,000,000 for property damage on account of any one occurrence, with an aggregate limit of $1,000,000.

C. Comprehensive Automobile Liability Insurance. Applying to owned, non-owned, and hired automobiles in an amount not less than $1,000,000 for bodily injury, including death, to any one person, and $1,000,000 on account on any one occurrence, and $1,000,000 for property damage on account of any one occurrence. This policy shall not contain any limitation with respect to a radius of operation for any vehicle covered and shall not exclude from the coverage of the policy any vehicle to be used in connection with the performance of the Engineer's obligations under this Contract.

D. Excess Liability Insurance. In an amount of $5,000,000 per occurrence and aggregate.

E. Valuable Papers Insurance. In an amount sufficient to assure the full restoration of any plans, drawings, field notes, logs, test reports, diaries, or other similar data or materials relating to the Services provided under this Contract in the event of their loss or destruction, until such time as the work has been delivered to the Authority.

F. Architects and/or Engineers Professional Liability insurance. Engineer shall provide and maintain professional liability coverage, with limits not less than $5,000,000 per claim and $5,000,000 aggregate. The professional liability coverage shall protect against any negligent act, error or omission arising out of design or engineering activities, including environmental related activities, with respect to the Project, including coverage for negligent acts, errors or omissions by any member of the Engineer and its subconsultants (including, but not limited to design subconsultants and subconsultants) of any tier. The policy must provide that coverage extends a minimum of three (3) years beyond the Engineer's completion of the Services. This policy shall be endorsed to include a waiver of subrogation in favor of the Authority.

G. General for All Insurance. The Engineer shall promptly, upon execution of this Contract, furnish certificates of insurance to the Executive Director indicating compliance with the above requirements. Certificates shall indicate the name of the insured, the name of the insurance company, the name of the agency/agent, the policy number, the term of coverage, and the limits of coverage.
All policies are to be written through companies (a) authorized to transact that class of insurance in the State of Texas; (b) rated (i), with respect to the companies providing the insurance under subarticles 19.A. through D.,

above, by A. M. Best Company as "A-X" or better (or the equivalent rating by another nationally recognized rating service) and (ii) with respect to the company providing the insurance under subarticle 19.E., a rating by A. M. Best Company or similar rating service satisfactory to the Mobility Authority and/or its insurance consultant; and (c) otherwise acceptable to the Executive Director.
All policies are to be written through companies authorized to transact that class of insurance in the State of Texas. Such insurance shall be maintained in full force and effect during the life of this Contract or for a longer term as may be otherwise provided for hereunder. Insurance furnished under subarticles 19.B., C., and D., above, shall name the Mobility Authority as additional insured and shall protect the Authority, its officers, employees, and directors, agents, and representatives from claims for damages for bodily injury and death and for damages to property arising in any manner from the negligent or willful acts or failures to act by the Engineer, its officers, employees, directors, agents, and representatives in the performance of the Services rendered under this Contract. Certificates shall also indicate that the Contractual liability assumed in Article 16, above, is included.

The insurance carrier shall include in each of the insurance policies required under subarticles 19.A. through F., the following statement: "This policy will not be canceled or materially changed during the period of coverage without at least thirty (30) days prior written notice addressed to the Central Texas Regional Mobility Authority, 3300 N. IH-35, Suite 300, Austin, Texas 78705, Attn: Executive Director"

H. Subconsultant. The Engineer shall be liable for work performed by the subconsultant and Engineer's insurance shall cover the work, actions, errors and omissions of the subconsultant.

ARTICLE 20. GRATUITIES

A. Employees Not to Benefit. Mobility Authority policy mandates that the director, employee or agent of the Mobility Authority shall not accept any gift, favor, or service that might reasonably tend to influence the director, employee or agent in making of procurement decisions. The only exceptions allowed are ordinary business lunches and items that have received the advance written approval of the Executive Director of the Mobility Authority.

B. Liability. Any person doing business with or who reasonably speaking may do business with the Mobility Authority under this Contract may not make any offer of benefits, gifts or favors to Mobility Authority employees, except as mentioned above. Failure on the part of the Engineer to adhere to this policy may result in the termination of this Contract.

ARTICLE 21. MAINTENANCE, RETENTION AND AUDIT OF RECORDS

A. Retention Period. The Engineer shall maintain all books, documents, papers, accounting records and other evidence pertaining to costs incurred and Services provided (hereinafter called the Records). The Engineer shall make the Records available at its office during the Contract Period and for four (4) years from the date of final payment under this Contract, until completion of all audits, or until pending litigation has been completely and fully resolved, whichever occurs last.

B. Availability. The Mobility Authority shall have the exclusive right to examine the books and records of the Engineer for the purpose of checking the amount of work performed by the Engineer. The Engineer shall maintain all books, documents, papers, accounting records and other evidence pertaining to cost incurred and shall make such materials available at its office during the Contract Period and for four (4) years from the date of final payment under this Contract or until pending litigation has been completely and fully resolved, whichever occurs last. The Mobility Authority or any of its duly authorized representatives, TxDOT, FHWA, the United States Department of Transportation Office of Inspector General, and the Comptroller General shall have access to any and all books, documents, papers and records of the Engineer which are directly pertinent to this Contract for the purpose of making audits, examinations, excerpts and transcriptions.

ARTICLE 22. CERTIFICATE OF INTERESTED PARTIES

If applicable, the Engineer must comply with the Certificate of Interested Parties (Form 1295) adopted by the Texas Legislature as House Bill 1295, which added section 2252.908 of the Government Code, available for review at the Texas Ethics Commission website: https://www.ethics.state.tx.us/.

ARTICLE 23. CIVIL RIGHTS COMPLIANCE

A. Compliance with Regulations: The Engineer shall comply with the Acts and Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation (USDOT), the Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made part of this Contract.

B. Nondiscrimination: The Engineer, with regard to the work performed by it during the Contract, will not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of subconsultants, including procurement of materials and leases of equipment. The Engineer will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the Contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

C. Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the Engineer for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subconsultant or supplier will be notified by the Engineer of the Engineer's obligations under this Contract and the Acts and Regulations relative to Nondiscrimination on the grounds of race, color, sex, or national origin.

D. Information and Reports: The Engineer will provide all information and reports required by the Acts and Regulations, and directives issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and facilities as may be determined by the Mobility Authority or the FHWA to be pertinent to ascertain compliance with such Acts and Regulations or directives. Where any information required of the Engineer is in the exclusive possession of another who fails or refuses to furnish this information, the Engineer will so certify to the Mobility Authority or the Federal Highway Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance: In the event of the Engineer's noncompliance with the Nondiscrimination provisions of this Contract, the Mobility Authority will impose such Contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:

(1) withholding of payments to the Engineer under the Contract until the Engineer complies and/or
(2) cancelling, terminating, or suspending of the Contract, in whole or in part.

F. Incorporation of Provisions: The Engineer will include the provisions of paragraphs (A) through (E) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Acts and Regulations and directives issued pursuant thereto. The Engineer will take such action with respect to any subcontract or procurement as the Mobility Authority, TxDOT, or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Engineer becomes involved in, or is threatened with, litigation with a subcontractor or supplier because of such direction, the Engineer may request the Mobility Authority to enter into such litigation to protect the interests of the Mobility Authority.

ARTICLE 24. PATENT RIGHTS

The Mobility Authority shall have the royalty free, nonexclusive and irrevocable right to use and to authorize others to use any patents developed by the Engineer under this Contract.

ARTICLE 25. COMPUTER GRAPHICS FILES

The Engineer agrees to comply with Attachment G, Computer Graphics Files for Document and Information Exchange, if determined by the Mobility Authority to be applicable to this Contract.

ARTICLE 26. CHILD SUPPORT CERTIFICATION

Under Section 231.006, Texas Family Code, the Engineer certifies that the individual or business entity named in this Contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this Contract may be terminated and payment may be withheld if this certification is inaccurate. If the above certification is shown to be false, the Engineer is liable to the state for attorney's fees, the cost necessary to complete the Contract, including the cost of advertising and awarding a second Contract, and any other damages provided by law or the Contract. A child support obligor or business entity ineligible to receive payments because of a payment delinquency of more than thirty (30) days remains ineligible until: all arrearages have been paid; the obligor is in compliance with a written repayment agreement or court order as to any existing delinquency; or the court of continuing jurisdiction over the child support order has granted the obligor an exemption from Subsection (a) of Section 231.006, Texas Family Code, as part of a court-supervised effort to improve earnings and child support payments.

ARTICLE 27. DISPUTES

A. Disputes Not Related to Contract Services. The Engineer shall be responsible for the settlement of all contractual and administrative issues arising out of any procurement made by the Engineer in support of the services authorized herein.

B. Disputes Concerning Work or Cost. The Executive Director of the Mobility Authority shall decide all questions, difficulties and disputes of any nature whatsoever that may arise under or by reason of this Contract, and his decision upon all claims, questions and disputes shall be final. The Engineer shall comply with the decision of the Executive Director with regard to the resolution of any such disputes.

ARTICLE 28. SUCCESSORS AND ASSIGNS

The Engineer and the Mobility Authority do each hereby bind themselves, their successors, executors, administrators and assigns to each other party of this Contract and to the successors, executors, administrators and assigns of such other party in respect to all covenants of this Contract. The Engineer shall not assign, subcontract or transfer its interest in this Contract without the prior written consent of the Executive Director.

ARTICLE 29. SEVERABILITY

In the event any one or more of the provisions contained in this Contract shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this Contract shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

ARTICLE 30. PRIOR CONTRACTS SUPERSEDED

This Contract, including all attachments, constitutes the sole agreement of the parties hereto for the Services authorized herein and supersedes any prior understandings or written or oral Contracts between the parties respecting the subject matter defined herein.

ARTICLE 31. CONFLICT OF INTEREST

A. Representation by Engineer.

The Engineer represents that it has no conflict of interest that would in any way interfere with its or its employees' performance of Services for the Mobility Authority or which in any way conflicts with the interests of the Mobility Authority and certifies that it is in full compliance with the Mobility Authority's Policy Code related to Conflicts of Interest. The Engineer shall prevent any actions or conditions that could result in a conflict with the Mobility Authority's interests.

B. Certification Status. The Engineer certifies that it is not:

1. a person required to register as a lobbyist under Chapter 305, Government Code;
2. a public relations firm; or
3. a government consultant.

C. Environmental Disclosure. If the Engineer will prepare an environmental study under this Contract, the Engineer certifies by executing this Contract that it has no financial or other interest in the outcome of the Project on which the environmental study is prepared.

D. Engineering Services for the Construction Contractor. Specific to the Project for which the Services are being provided under this Contract, the Engineer shall not provide services directly to the contractor responsible for constructing the Project unless approved by the Executive Director.

ARTICLE 32. AUDIT REQUIREMENTS
The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in 2 CFR 200.

ARTICLE 33. DEBARMENT CERTIFICATIONS
The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this Contract, the Engineer certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this Contract shall require any party to a subcontract or purchase order awarded under this Contract to certify its eligibility to receive Federal funds and, when requested by the Executive Director, to furnish a copy of the certification.

ARTICLE 34. PERTINENT NON-DISCRIMINATION AUTHORITIES
During the performance of this Contract, the Engineer, for itself, its assignees, and successors in interest agree to comply with the following nondiscrimination statutes and authorities; including but not limited to:

A. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

B. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects).

C. Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), as amended, (prohibits discrimination on the basis of sex).

D. Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.) as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27.

E. The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age).

F. Airport and Airway Improvement Act of 1982, (49 U.S.C. Chapter 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex).

G. The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, subrecipients and contractors, whether such programs or activities are Federally funded or not).

H. Titles II and III of the Americans with Disabilities Act, which prohibits discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38.

I. The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex).

J. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures nondiscrimination against minority populations by discouraging programs,

policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations.

K. Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, the parties must take reasonable steps to ensure that LEP persons have meaningful access to the programs (70 Fed. Reg. at 74087 to 74100).

L. Title IX of the Education Amendments of 1972, as amended, which prohibits the parties from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq.).

ARTICLE 35. BOYCOTT ISRAEL

The Contractor represents and warrants that (1) it does not, and shall not for the duration of this Contract, boycott Israel or (2) the verification required by Section 2271.002 of the Texas Government Code does not apply to this Contract.

ARTICLE 36. FIREARM ENTITIES AND TRADE ASSOCIATIONS DISCRIMINATION

The Engineer verifies that:

1. It does not, and will not for the duration of this Contract, have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; or
2. The verification required by Section 2274.002 of the Texas Government Code does not apply to the Contract.

If circumstances relevant to this provision change during the course of this Contract, Engineer shall promptly notify the Executive Director.

ARTICLE 37. ENERGY COMPANY BOYCOTT

The Engineer verifies that:

1. It does not, and will not for the duration of the Contract, boycott energy companies; or
2. The verification required by Section 2274.002 of the Texas Government Code does not apply to the Contract.

If circumstances relevant to this provision change during the course of this Contract, the Engineer shall promptly notify the Executive Director.

ARTICLE 38. ABBREVIATIONS AND DEFINITIONS

Acts and Regulations	Federal, state, and local acts and regulations which are applicable to the Contract
Agreement	This Contract
Mobility Authority	The Central Texas Regional Mobility Authority
Business Days	Any day the Mobility Authority is open for business
CFR	Code of Federal Regulations
Contract	This Contract document and its attachments
Days	Calendar days
Engineer	The service provider performing the services under this Contract
Executive Director	The Executive Director of the Mobility Authority, or anyone to whom he has delegated the authority to act on his behalf
FAR	Federal Acquisition Regulations
FHWA	Federal Highway Administration
OMB	Office of Management and Budget

Project	Any capital improvement, rehabilitation, repair, maintenance, or other work in conjunction with the Authority's or a partner's facilities.
PS&E	Plans, specifications, and estimate
Services	Any work assigned under this Contract
TxDOT	Texas Department of Transportation
USDOT	United States Department of Transportation
Work Authorization	Any work authorization arising from this Contract
Year	When not otherwise clarified, "year" refers to a 12-month period

ATTACHMENT B
SERVICES TO BE PROVIDED BY THE MOBILITY AUTHORITY
183A Added Capacity Professional Services

The Authority shall perform and provide the following in a timely manner so as not to delay the Services to be provided by the Engineer:

1. Authorize the Engineer in writing to proceed.
2. Designate in writing a person to act as the Authority's representative, such person to have complete authority to transmit instructions, receive information, and interpret and define Authority's decisions with respect to the Services to be provided by the Engineer.
3. Render reviews, decisions and approvals as promptly as necessary to allow for the expeditious performance of the Services to be provided by the Engineer.
4. Provide timely review and decisions in response to the Engineer's request for information and/or required submittals and deliverables.
5. Maintain the Project's website and other public involvement materials.
6. Provide the Engineer with relevant data available to the Mobility Authority related to people, agencies and organizations interested in the project.
7. Either provide directly, or have its designated General Engineering Consultant ("GEC") provide general oversight services of the Engineer.
8. Place at Engineer's disposal all reasonably available information pertinent to the Project.
9. Provide assistance in coordinating with Corps of Engineers, FEMA, City of Austin, City of Cedar Park, City of Leander, and TxDOT for any approvals and permits required.
10. Address problems regarding any refusal to grant right of entry (ROE) or communication with landowners who are hostile with respect to the completion of this scope of services.
11. Records available that would assist in the completion of the environmental services.
12. Submittal of documentation to regulatory agencies for review and comment when specified.
13. Review and approval of typical roadway and bridge cross sections created by the Engineer.
14. Approval of pavement design to be used for cost estimation purposes.
15. Available horizontal control points, benchmark elevations and descriptions for vertical

control in the project area.

16. Available interface data for 183A Phases I, II, & III adjacent to the project corridor.
17. Assistance as necessary in obtaining the required data and information from other local, regional, state, and federal agencies.
18. Examples of acceptable format for the deliverables required by the work authorizations.

ATTACHMENT C
SERVICES TO BE PROVIDED BY THE ENGINEER
183A Added Capacity Professional Services

The Design Consultant Engineer ("Engineer"), shall be responsible for the work described in this Scope of Services ("Services") for the 183A Added Capacity Project ("Project"). The Engineer will coordinate with Mobility Authority Staff and their General Engineering Consultant ("GEC"), herein referred to as the "Mobility Authority".

The Engineer will work at the direction and supervision of the Mobility Authority to provide the Services. The Mobility Authority expects the Engineer to work cooperatively and collaboratively through all aspects and phases of plans, specifications and estimate (PS&E) design and in its dealings with TxDOT, subcontractors, engineers, legal counsel, consultants, governmental entities, utilities, businesses, property owners, and the general public.

The Engineer will report to the Mobility Authority's Project Manager, the GEC's Project Manager and staff, and keep them informed of the design progress, especially issues that would affect the project schedule and delivery. The Engineer shall be available for weekly progress meetings with the Mobility Authority, if scheduled. The Engineer will also be responsible for coordinating with all other members of their project team to verify that deliverables meet the established schedule and quality requirements.

The Engineer will be expected to deliver a final set of construction plans and bid documents suitable for construction bidding. The Mobility Authority is leading the oversight for design and construction for the Project, but the Project will be fully coordinated with TxDOT and will be required to meet standard requirements for a TxDOT project including: Local Government Projects Policy Manual, Pavement Design Guide, Project Development Process Manual, PS&E Preparation Manual, Roadway Design Manual, TxDOT MUTCD and others.

The project location is more specifically defined as:

183A from Hero Way to SH 45, is approximately 8.5 miles in length. 183A currently consists of a divided highway carrying three toll lanes in each direction for most of the distance. The proposed improvements include the construction of a fourth lane in each direction primarily in the existing median. The proposed improvements will be constructed within the existing right of way (ROW).

The Engineer shall coordinate with the Mobility Authority prior to a particular task being started and will not begin work until Notice to Proceed has been issued.

Scheduling of activities below will conform to the Project milestones established by the Mobility Authority.

The Engineer will coordinate with both the Mobility Authority and their GEC. It is understood that all references herein to responsibilities of or actions by the Mobility Authority will be led or supported by the GEC. The Engineer shall work cooperatively and collaboratively throughout the aspects and phases of project development and in its dealings with the Mobility Authority,

GEC, TxDOT, toll system integrators, engineers, legal counsel, accountants, consultants, government entities, utilities, property owners, and the general public.

The Engineer shall coordinate with the Mobility Authority's Communications and public involvement team, as required, in the Mobility Authority's dealings with the general public, adjacent property owners, and interested advocacy groups.

Data Collection

Perform research and obtain historical Project information including as-built plans, environmental documents, existing utility locations, signalization plans and timing, hydraulic and hydrologic data, geotechnical studies and boring logs, and others. Perform topographic survey, ROW survey, river/creek survey and additional field survey required in order to complete the final design.

Final Design

Final Design services shall include the elements referred to as 30% Design Submittal, 60% Design Submittal, 90% Design Submittal, and Final Design Package and include stakeholder coordination and assistance with public involvement, finalization of reports and studies, design and PS&E document development for the Project including the complete set of bid documents and required permits. Major design tasks include: roadway (pavement, geometry, retaining walls, earthwork, details, plan production, barriers), drainage (H&H studies, scour analysis, culvert and storm drain, and detention design with required elements and reports, and coordination), Environmental (water quality, erosion and sediment control, SWP3), structures (bridges, retaining walls, miscellaneous drainage structures, foundations), traffic (signals, pavement markings, illumination, small and large signs, electronic toll collection infrastructure, ITS system coordination and design), miscellaneous (traffic control plans, landscaping and aesthetics), support during the bidding process, and other incidental items necessary for the Project.

Construction Phase Services

Construction Phase services shall generally include reviewing and approving shop drawings, responding to RFIs and answering general questions, and project management and coordination meeting activities. Additional activities may be requested in which case the Engineer shall develop a supplemental scope of work for the Authority's review.

ATTACHMENT C
SERVICES TO BE PROVIDED BY THE ENGINEER
183A Added Capacity Professional Services

1. PROJECT MANAGEMENT AND ADMINISTRATION (20 Months)

1.1. GENERAL

1.1.1. The Engineer shall be responsible for, direct, and coordinate activities associated with the project to comply with Mobility Authority policies and procedures, and to deliver that work on time. The Engineer shall coordinate subconsultant activity including quality of and consistency of work and administration of the invoices and monthly progress reports. The Engineer shall coordinate with necessary local entities.

1.2. TASKS.

1.2.1. Prepare monthly written progress reports.

1.2.2. Conduct coordination meetings on the project with the Mobility Authority, TxDOT, and other interested parties.

1.2.3. Escalate major project issues to the Mobility Authority.

1.2.4. Copy the Mobility Authority's Project Manager (PM) on relevant internal and external correspondence

1.2.5. Develop and maintain a detailed project schedule to track project conformance to schedule, for each work authorization.

1.2.6. Meet on a scheduled basis with the Mobility Authority to review project progress. These will be bi-weekly virtual calls.

1.2.7. Prepare, distribute, and file both written and electronic correspondence.

1.2.8. Prepare and distribute meeting minutes.

1.2.9. Document phone calls and conference calls as required during the project to coordinate the work for various team members.

DELIVERABLES

i. Monthly written Progress Reports
ii. Monthly Update Reviews and preview of upcoming month
iii. Detailed Work Schedule for approval by the Mobility Authority
iv. Project Meeting minutes
v. Written and electronic correspondence and other work-related communication documentation
vi. Phone and Conference call log and other related documentation

ATTACHMENT C
SERVICES TO BE PROVIDED BY THE ENGINEER
183A Added Capacity Professional Services

2. DATA COLLECTION

2.1. DATA COLLECTION

2.1.1. The Engineer shall collect, review, and evaluate data described including, but not limited to: available preliminary design concepts or design drawings, available "as-built plans," existing geometric schematics, right-of-way maps, subsurface utility engineering (SUE) mapping, existing survey, existing cross sections, existing planimetric mapping, environmental documents, utility permits, ITS infrastructure guidelines and plans, TCEQ Edwards Aquifer Permits etc. Where appropriate for water quality data collection efforts, the Engineer will collect information from the prior Engineer of Record or Firm of Record to determine assumptions within the original designs not documented within the collected TCEQ permit (such as ultimate conditions). The Engineer is responsible for any adjustments to electronic files received by others, as described above, to verify that the position of all files is on the exact same georeferenced coordinate system as the Project's Control.

2.1.2. The Engineer shall perform sufficient field investigations to augment any field investigations completed by the Mobility Authority to gather information for the development of the construction plans. The Engineer shall field verify drainage, signing, structures, utility, and ITS infrastructure elements.

2.2. ROW SURVEY

2.2.1. The Surveyor shall research Williamson County Appraisal district records and

2.2.2. The Surveyor shall obtain vesting adjoiner deeds, plats, TxDOT ROW deeds found of record and record easements within and crossing the ROW and provide an abstract base map in a 2 dimensional (2d) dgn format of adjoining private or public ownership to include reference information, record ROW lines, record deed property lines, record deed acreage and any known easements crossing or adjacent to the ROW. The abstract map shall show the provided planimetrics file obtained from the design aerial Lidar (provided by others).

2.2.3. Surveyor shall perform a survey of the existing 183A ROW limits at the intersection of 183A and Brushy Creek Road including the ROW of the existing railroad, and a survey of the intersection of 183A and Innovation way. Both ROW surveys will extend 1000 feet in each direction past and along the existing ROW line and show adjoining public easements listed/shown on record subdivision plats & adjoiner deeds. ROW determination shall be based on a best fit analysis of ROW and front corner monuments. Surveyor shall research, obtain, and utilize for the survey the following:

2.2.3.1. Existing ROW maps or documents
2.2.3.2. Recorded ROW dedications
2.2.3.3. Recorded ROW conveyance instruments
2.2.3.4. Recorded subdivision plats adjacent to the existing ROW
2.2.3.5. Recorded adjoining deeds and easements if listed in the record deeds/subdivisions
2.2.3.6. Records obtained in the course of research which affect the **subject properties**

2.2.4. The existing ROW survey shall not require a boundary survey of the properties adjacent to the existing ROW.

2.2.5. The existing ROW survey shall not require setting missing monumentation of the existing ROW. Monumentation may be performed in a future phase of surveying services.

2.2.6. The Surveyor shall provide a dgn of the existing ROW within the project limits described in 2.2.2. The map will show existing centerline/baseline with stationing and show all found property markers and calculated points along the existing ROW lines.

2.3. Field Survey

2.3.1. As necessary, to supplement the aerial mapping, provide a supplemental ground survey of obscure areas, ramp gores, drainage structures, manholes, pipe sizes and flow lines with inverts outside of the pavement and bridge structures within the limits of the existing 183A ROW. In addition, digital photographs shall be obtained by the Surveyor for all mainline street signs within the project corridor.

2.3.2. Surveyor shall collect cross-sectional survey at each river crossing for the 6 bridges and 4 culvert crossings. The cross-sectional survey will consist of 4 cross sections at each river crossing, with 2 upstream and 2 downstream of the structure. The cross sections shall span the river banks to the high-ground defining the maximum extents of the river channels span.

2.4. AERIAL MAPPING

2.4.1. TASKS TO BE COMPLETED

2.4.1.1. Aerial Photography

2.4.1.2. The Engineer's Surveyor shall provide aerial photography for low altitude aerial mapping appropriate for detailed design.

2.4.1.3. Ground Control Accuracy Standards

2.4.1.3.1. The Engineer's Surveyor shall provide horizontal ground control that meets standards of accuracy required by the Mobility Authority and as described in the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

2.4.1.3.2. The Engineer's Surveyor shall provide vertical ground control that meets standards of accuracy required by the Mobility Authority and as described in the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

2.4.1.4. Paneling Placement Specifications

2.4.1.4.1. For purposes of this Contract, all standards and specifications shall be in accordance with established guidelines and recommended or approved by the Mobility Authority.

2.4.1.5. Aerial Photography Standards and Specifications

2.4.1.5.1. For purposes of this Contract, all standards and specifications shall be in accordance with established guidelines and recommended or approved by the Mobility Authority.

2.4.1.6. LiDAR Technology

2.4.1.6.1. The use of LiDAR Technology (mobile, terrestrial, or aerial) will be acceptable when approved by the Mobility Authority and the accuracies of the specified tasks it will be used for are met or exceeded.

DELIVERABLES

i. Digital Orthophotos

ii. A photo index of the scanned aerial film frames or digital image frames for each frame of photography in the project.

2.4.2. DGN, DTM & TIN FILES

2.4.2.1. The Engineer's Surveyor shall prepare DGN, and DTM files covering the specific work location, meeting standards and specifications as required.

2.4.2.2. Horizontal Ground Control Accuracy Standards

2.4.2.2.1. The Engineer's Surveyor shall provide horizontal ground control that meets standards of accuracy required by the Mobility Authority and as described in the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

2.4.2.3. Vertical Ground Control Accuracy Standards

2.4.2.3.1. The Engineer's Surveyor shall provide vertical ground control that meets standards of accuracy required by the Mobility Authority and as described in the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

2.4.2.4. Map Accuracy Standard

2.4.2.4.1. Aerial mapping must meet or exceed the requirements for ASPRS Class 1 standard for 1" = 40' scale mapping with a one-foot contour interval.

2.4.2.4.2. Field verification of adherence to the required accuracy specification is at the discretion of the Mobility Authority.

2.4.2.5. Statement of Map Accuracy

2.4.2.5.1. For maps that are not field checked but have been compiled to meet the Mobility Authority's accuracy standard, the Engineer's Surveyor shall include the following statement along with the Photogrammetrist's seal on the delivered hard copy and digital versions of the map:

2.4.2.5.2. "This map was compiled to meet the ASPRS Standard for Class 1 map accuracy."

2.4.2.5.3. If the map was checked and found to conform to this spatial accuracy standard, the statement above and the following statement must also be included on the delivered hard copy and digital versions of the map, and in the field check summary:

2.4.2.5.4. "This map was checked and found to conform to the ASPRS Standard for Class 1 map accuracy."

DELIVERABLES

i. The Engineer's Surveyor shall provide:

ii. · DGN, and DTM files on a medium and in a format acceptable to the Mobility Authority.

iii. · Orthophotography (created using the DTM) in tiff format (3 banded) with world files. If digital, depending on intended use, deliverable formats must include:

iv. Raw tiff image – rectified – 4 Band Tiff (for archive only).

v. Color photography – rectified – 3 Band Tiff and Mr. Sid.

vi. Infrared Photography – rectified – 3 Band Tiff and Mr. Sid.

2.5. HORIZONTAL AND VERTICAL CONTROL FOR AERIAL MAPPING

2.5.1. Tasks to be Completed

2.5.1.1. Prepare and submit an Aerial Ground Control Layout showing the proposed control and offsite control points, and aerial ground control points, for approval by the Mobility Authority.

2.5.1.2. Establish and determine the coordinates of the offsite and control points, and aerial ground control points.

2.5.1.3. Establish and determine the elevations of the offsite and control points, and aerial control points.

2.5.1.4. Place aerial ground control target material at the established points and maintain until the photographs from the flight are approved.

2.5.1.5. Prepare, to scale, a Survey Control Index Sheet, a Horizontal and Vertical Control Sheet, and an individual control data sheet for each offsite and control point, and aerial control point.

2.5.2. TECHNICAL REQUIREMENTS

2.5.2.1. Aerial photography control surveys must be performed under the direct supervision of a RPLS currently registered with the TBPLS

2.5.2.2. The coordinate location of the aerial control points shall be based on acceptable methods, conducted by the Engineer's Surveyor, and must meet the standards of accuracy as set forth below:

2.5.2.3. Reference may be made to standards of accuracy for horizontal control traverses, as described in the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

2.5.2.4. The elevation of the aerial control points must be based on acceptable methods, conducted by the Engineer's Surveyor, and shall meet the standards of accuracy as set forth below:

2.5.2.5. Reference may be made to standards of accuracy for vertical control traverses, as described in the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

2.5.2.6. The elevation of aerial control points based on side shots or short traverses must meet the following criteria:

- Side shots or short traverses must begin and end on vertical ground control as described above.
- Standards, procedures, and equipment used must be such that the vertical location relative to the control may be reported to within 0.02 of one (1) foot.

DELIVERABLES

i. Submit a final aerial control point layout showing the location of the points and labeled with their respective alpha-numeric designations.

ii. Submit a plot and computer graphics of an 11 inch by 17 inch index map showing an overall view of the project and the relationship of primary monumentation and control used in the preparation of the project, signed, and sealed by a RPLS, and as directed by the Mobility Authority.

iii. Submit the graphics files and scanned images of the control data sheets.

iv. Submit a written statement describing the datum used along with copies of all relevant NGS and data sheets

v. Submit a written tabulation of all aerial control points with their respective alpha-numeric designations, surface coordinates (for center panel points only), and elevations.

2.6. GEOTECHNICAL INVESTIGATION

2.6.1. General Requirements

2.6.1.1.1. Perform geotechnical investigations and testing according to TxDOT's Geotechnical Manual (latest edition), TxDOT's Pavement Design Manual (latest edition), and TxDOT's Test Methods, or ASTM Standards if no corresponding TxDOT Methods exist. Perform borings and testing for the limited design of pavement, bridge substructures, retaining walls, noise walls, and sign structure foundations. All proposed boring locations shall be identified by the Engineer and shown on a boring layout and reviewed and approved by the Authority prior to performing geotechnical investigations.

2.6.1.1.2. The Engineer shall be responsible for locating existing underground and overhead utilities prior to drilling borings by using Texas811 or a similar locator service.

2.6.1.1.3. Provide a traffic control plan in accordance with TxDOT Standards for all work to be performed adjacent to traffic.

2.6.1.1.4. Record GPS coordinates of each bore hole using hand-held GPS unit utilizing Project survey control. Bore holes will be marked for surveying of ground elevations and coordinates in order to place the boring locations in the plans.

2.6.1.1.5. Backfill borings less than 20 feet with cuttings from the boring or gravel. Patch pavements with cold mix asphalt or concrete (match existing pavement surface of affected road or drive). All borings with depths greater than or equal to 20 feet must be plugged with a non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring or gravel. All borings must be backfilled or plugged within four (4) days of completion of the drilling operations. Voids may be filled with gravel.

2.6.2. Pavement Design

2.6.2.1. Pavement design work shall be done in accordance with the TxDOT Pavement Manual. The pavement design will be limited to pavement cores to verify the existing mainlane shoulder pavement section. Pavement cores will be performed at 1/2 mile spacing.

2.6.2.2. Review the Pavement Design Reports from previous TxDOT's US 183 frontage road project and the Authority's 183A Phase I, II & III projects.

2.6.2.3. Laboratory – No pavement design laboratory samples are anticipated for this project with respect to pavement design.

2.6.2.4. The Engineer shall perform an analysis of the existing mainlane pavement section in anticipation of widening. The pavement design is to verify that the existing mainlane section is adequate for the project. A pavement design memo and summary of findings will be incorporated into the project geotechnical report.

2.6.2.5. The pavement design shall include sections for temporary detour pavement (if any) used during construction

2.6.3. Bridges

2.6.3.1. Supplement existing boring and boring logs performed by others as necessary to complete the bridge design. Perform borings for the new bridges included in the existing schematic plans. Bridge borings shall be drilled to a minimum depth of 50' below top of existing ground.

2.6.3.2. Analyze subsurface conditions and Texas Cone Penetrometer Test results for each bridge location.

2.6.3.3. Develop recommendations for suitable foundation type, allowable bearing and skin friction resistance in the soil profile encountered, and

minimum required penetration depths for each bridge location. Provide final tip elevations recommendations as they relate to possible axial design loads.

2.6.3.4. Perform laboratory testing to include: USCS Soil Classification, Atterberg limits, particle size analysis (D50 and D95), moisture content and unconfined compression tests.

2.6.3.5. For each bent and abutment provide soil parameters and other necessary data so that the structural engineer can determine point-of-fixity. Also included necessary data for lateral analysis of drilled shafts.

2.6.3.6. Identify potential drilled shaft construction problems related to groundwater, caving soils, very hard rock layers or karst features.

2.6.4. Retaining Walls

2.6.4.1. Perform boring and boring logs necessary to design the retaining walls. Retaining wall borings shall be drilled to a minimum depth of 20’ below the bottom of proposed walls.

2.6.4.2. Perform laboratory testing to characterize the uniformity and strength for the soils that will be supporting MSE walls and soil and rock conditions for design of drilled shaft walls. Laboratory testing will include: USCS Soil Classification, Atterberg limits, particle size analysis, moisture content, soil consolidation, consolidated drained direct shear test and unconfined compression tests.

2.6.4.3. Analyze the bearing, overturning, eccentricity and sliding resistance of the foundation soils at each wall location.

2.6.4.4. Analyze the stability of each wall for rotational stability with respect to deep-seated shearing movements by performing slope stability analyses.

2.6.4.5. Analyze settlement of retaining walls.

2.6.4.6. Analyze, as required, global stability of retaining walls.

2.6.4.7. Compare anticipated wall applied bearing pressures with the allowable bearing resistance to determine whether or not the foundation soils need to be strengthened to support the walls.

2.6.4.8. For spread footing walls, recommend the design soil lateral earth pressure and provide bearing capacity, sliding and slope stability analyses and evaluate the settlement of the wall.

2.6.5. Geotechnical Report

2.6.5.1. The Engineer will prepare a draft geotechnical report that will present recommendations for the design of the bridge foundations, retaining wall foundations, noise walls, and sign structures including:

2.6.5.2. Site vicinity and geology map.

2.6.5.3. Generalized subsurface conditions, as well as groundwater conditions encountered during drilling operations.

2.6.5.4. Engineering and construction considerations, structural fill requirements and earthwork recommendations.

2.6.5.5. Wincore Version (latest applicable version) logs in English units, laboratory test results, and plan of borings with station and offset and top of hole elevations.

2.6.5.6. Recommended foundation type, minimum embedment, allowable end bearing and skin friction resistance in the founding material encountered.

2.6.5.7. Soil parameters and other data provided to structural engineers for use in determining point-of-fixity of bridge foundations for bridge column design and lateral analysis of drilled shafts.

2.6.5.8. Recommended bearing and sliding resistance for design of MSE walls. Where the allowable bearing resistance is likely to be exceeded by the walls bearing pressure, recommendations for increasing wall anchor lengths or improving the foundation soils will be presented to provide adequate bearing capacity. Develop parameters for RW(MSE)DD standard sheet.

2.6.5.9. Rotational stability analyses and settlement analyses results for each retaining wall location. At wall locations where stability and/or settlement may be of concern the Engineer shall develop conceptual approaches to improve the rotational stability and/or settlement. Upon review by the Authority, the Engineer will further develop the selected concept.

2.6.5.10. Identification of potential foundation construction problems with recommendations to mitigate or avoid the problems.

2.6.5.11. Existing boring logs performed by others will be presented in the appendix to supplement the new borings for pavement design, bridge structures, retaining walls and sign and toll gantry structures. The intent is to have one report for the limits of this Project. The Engineer assumes no liability for the accuracy of borings performed by others.

2.6.5.12. Minimum side slope and slope stability recommendations for storm water detention basins.

2.6.5.13. Calculated D50 and D95 soil size within potential scour locations for scour analysis computations.

2.6.5.14. Recommended bearing and sliding resistance of the spread footing walls. Where the allowable bearing resistance is likely to be exceeded by the wall pressure, improving the foundation soil will be presented to provide adequate bearing capacity.

2.6.5.15. Provide recommendations for backfill material and drainage for retaining walls.

2.6.5.16. Geophysical study results will be included with the draft geotechnical report.

DELIVERABLES

i. Submit the geotechnical report for review and comment to the Authority in *.pdf and hard copy formats. One draft copy of the geotechnical report shall also be kept on file with the Engineer for future reference.

2.7. SUBSURFACE UTILITY ENGINEERING

2.7.1. Subsurface Utility Engineering

2.7.1.1. Utility Engineer Investigation (Subsurface Utility Engineering) includes utility investigations subsurface and above ground prepared in accordance with AASHTO standards [ASCE C-138-02 (https://www.fhwa.dot.gov/programadmin/asce.cfm)] and Utility Quality Levels.

2.7.2. Utility Quality Levels

2.7.2.1. Utility Quality Levels are defined in cumulative order (least to greatest) as follows:

2.7.2.2. Quality Level D Existing Records: Utilities are plotted from review of available existing records.

2.7.2.3. Quality Level C - Surface Visible Feature Survey: Quality Level D information from existing records is correlated with surveyed surface visible features. It includes Quality Level D information.

2.7.2.4. Quality Level B - Designate: Two-dimensional horizontal mapping. This information is obtained through the application and interpretation of appropriate non-destructive surface geophysical methods. Utility indications are referenced to established survey control. It incorporates Quality Levels C and D information to produce Quality Level B.

2.7.2.5. Quality Level A - Locate (Test Hole): Three-dimensional mapping and other characterization data. This information is obtained through exposing utility facilities through test holes and measuring and recording (to appropriate survey control) utility/environment data. It incorporates Quality Levels B, C and D information to produce Quality Level A.

2.7.3. Designate (Quality Level B)

2.7.3.1. Designate means to indicate the horizontal location of underground utilities by the application and interpretation of appropriate non-destructive surface geophysical techniques and reference to established survey control. Designate (Quality Level B) Services are inclusive of Quality Levels C and D.

The Engineer is expected to carry out the following services on an as-need basis.

2.7.3.2. As requested by the Authority, compile and confirm "as-built" information from plans, and other location data as provided by the utility owners.

2.7.3.3. Designate, record, and mark the horizontal location of all existing utility facilities and their service laterals to proposed ROW using non-destructive surface geophysical techniques. No storm sewer facilities are to be designated unless authorized by the Authority. A non-water base paint, utilizing the APWA color code scheme, shall be used on all surface markings of underground utilities. It is estimated 75,000 LF of Level B designation may be required for the Project.

2.7.3.4. Correlate utility owner records with designating data and resolve discrepancies using professional judgment. A color-coded composite utility facility plan with utility owner names, quality levels, line sizes and subsurface utility locate (test hole) locations, shall be prepared and delivered to the Authority. It is understood by both the Engineer and the Authority that the line sizes of designated utility facilities detailed on the deliverable are from the best available records and that an actual line size is normally determined from a test hole vacuum excavation. A note will be placed on the quality level B deliverable that states "lines sizes are from best available records".

2.7.3.5. Determine and inform the Authority of the approximate utility depths at critical locations as determined by the Authority. This depth indication is understood by both the Engineer and the Authority to be approximate only and is not intended to be used preparing the right of way and construction plans.

2.7.3.6. Provide a monthly summary of work completed and in process with adequate detail to verify compliance with agreed work schedule.

2.7.3.7. Clearly identify all utilities that were discovered from quality levels C and D investigation but cannot be depicted in quality level B standards. These utilities must have a unique line style and symbology in the designate (Quality Level B) deliverable.

2.7.3.8. This information will be provided in the latest version of AutoCAD or Microstation, as requested by the Authority. The electronic file will be delivered on CD, DVD or Newforma File Transfer as requested by the Authority.

2.7.3.9. A hard copy of the quality level B information will be provided in 11” x 17” format and will be signed, sealed and dated by the Engineer.

2.7.4. Subsurface Utility Locate (Test Hole) Service (Quality Level A)

2.7.4.1. Locate means to obtain precise horizontal and vertical position, material type, condition, size and other data that may be obtainable about the utility facility and its surrounding environment through exposure by non-destructive excavation techniques that maintains the integrity of the utility facility.

2.7.4.2. Review requested test hole locations and advise the Authority in the development of an appropriate locate (10 test holes) work plan relative to the existing utility infrastructure and proposed highway design elements.

2.7.4.3. Coordinate with utility owner inspectors as may be required by law or utility owner policy.

2.7.4.4. Neatly cut and remove existing pavement material, such that the cut not to exceed 0.10 square meters (1.076 square feet) unless unusual circumstances exist

2.7.4.5. Measure and record the following data on an appropriately formatted test hole data sheet that has been sealed and dated by the Engineer:

2.7.4.5.1. Elevation of top and/or bottom of utility tied to the datum of the furnished plan.

2.7.4.5.2. Identify a minimum of two benchmarks utilized. Elevations shall be within an accuracy of 15mm (.591 inches) of utilized benchmarks.

2.7.4.5.3. Elevation of existing grade over utility at test hole location.

2.7.4.5.4. Horizontal location referenced to Project coordinate datum.

2.7.4.5.5. Outside diameter of pipe or width of duct banks and configuration of non- encased multi-conduit systems.

2.7.4.5.6. Utility facility material(s).

2.7.4.5.7. Utility facility condition.

2.7.4.5.8. Pavement thickness and type.

2.7.4.5.9. Coating/Wrapping information and condition.

2.7.4.5.10. Unusual circumstances or field conditions.

2.7.5. Excavation for Test Holes

2.7.5.1. Excavate test holes in such a manner as to prevent any damage to wrappings, coatings, cathodic protection or other protective coverings and features. Water excavation will only be utilized with written approval from the Authority.

2.7.5.2. Be responsible for any damage to the utility during the locating process. In the event of damage, the Engineer shall stop work, notify the appropriate utility facility owner, and appropriate regulatory agencies. The regulatory agencies include, but are not limited to the Railroad Commission of Texas and the Texas Commission on Environmental Quality. The Engineer shall not resume work until the utility facility owner has determined the corrective

action to be taken. The Engineer shall be liable for all costs involved in the repair or replacement of the utility facility.

2.7.5.3. Back fill all excavations with appropriate material, compact backfill by mechanical means, and restore pavement and surface material.

2.7.5.4. Furnish and install an above ground marker directly above center line of the utility facility.

2.7.5.5. Provide complete restoration of work site and landscape to equal or better condition than before excavation. If a work site and landscape is not appropriately restored, the Engineer shall return to correct the condition at no extra charge to the Authority.

2.7.5.6. Plot utility location position information to scale and provide a comprehensive utility plan sign and sealed by the responsible Engineer. This information shall be provided in the latest version of the CAD format used by the Authority. The electronic file will be delivered on CD or via Newforma File Transfer. When requested by the Authority, the SUE information must be over laid on the Authority's design plans

2.7.5.7. Return plans, profiles, and test hole data sheets to the Authority. If requested, conduct a review of the findings with the Authority.

2.7.6. Utility Adjustment Coordination

2.7.6.1. Utility adjustment coordination shall be performed by the Authority. The Engineer shall support the Authority with the utility adjustment coordination work.

2.7.6.2. Assist the Authority with the preparation of Project notifications to identified utility owners, including providing current design plans.

2.7.6.3. Assist the Authority with the preparation for and attend a kick-off meeting with identified utility owners potentially affected within the Project corridor.

2.7.6.4. Assist the Authority with the preparation for and attend individual utility coordination meetings with utility owners affected along the Project corridor.

2.7.6.5. Assist the Authority with identifying utility conflicts.

2.7.6.6. Assist the Authority with evaluation of relocation alternatives.

2.7.7. Utility Agreements for Utility Adjustments

2.7.7.1. Utility Agreements for Utility Adjustments shall be performed by the Authority. The Engineer shall support the Authority in the development of utility agreements for utility adjustments.

2.7.7.2. Assist the Authority with the development of any utility agreements required as part of this Project.

2.7.8. General Requirements

2.7.8.1. The Engineer shall determine the location of all existing utilities as well as ITS and toll infrastructure within the Project area, as described above, using Quality Level B standards. The Engineer shall compile "As-Built" information from plans, plats and other location data as provided by utility owners. A color-coded composite utility facility plan with utility owner names, quality levels and line sizes will be prepared and delivered to the GEC. It is understood by both the Engineer and the GEC that the line sizes of utility facilities detailed on the deliverable are from the best available records and that an actual line size is normally determined from a test hole vacuum excavation. All above ground appurtenance locations must be included in the deliverable to the GEC. This information will be provided in the latest version of Microstation or OpenRoads used by the Authority. The electronic file will be delivered on CD. A hard copy is required and must be signed, sealed and dated by the Engineer.

2.7.8.2. In coordination with the GEC, the Engineer shall attend utility meetings with utility owners and other interested parties or agencies that are identified to be within the proposed Project's area. The purpose of these meetings is to verify that all utility owners and area entities are aware of the scope and relevant details of the proposed Project. The Engineer shall be responsible for writing and documenting the meeting minutes and other follow-up work with utility owners, if necessary.

2.7.8.3. The Engineer shall coordinate with the GEC and utility companies attending meetings at the 30%, 60%, 90% and final design submittals. The Engineer shall discuss potential conflicts and mitigation strategies to avoid utility conflicts.

2.7.8.4. The Engineer shall incorporate existing utility survey and SUE work into the preliminary design for presentation at utility coordination meetings.

3. FINAL DESIGN

3.1. GENERAL

3.1.1. Submittal Requirements

3.1.1.1. PS&E plan set shall be submitted at the following milestones: 30%, 60%, 90%, and Final.

3.1.1.2. The level of design and plan sheet development expected at each submittal milestone will be in general alignment with the TxDOT PS&E QC Milestone Checklist and CTRMA supplemental requirements as directed.

3.1.1.3. Plan sheets shall include quantity summary tables on each sheet.

3.1.1.4. The Engineer shall submit QA/QC Records & Red-lined Plans with each milestone submittal.

3.1.2. Basic Plan Sheets

3.1.2.1. The Engineer shall develop a PS&E Title Sheet for a local letting by the Mobility Authority.

3.1.2.2. The Engineer shall develop a Detailed Index of Sheets that identifies each sheet location in the plan set, as well as its corresponding sheet number. The Engineer shall update the Index of Sheets throughout the submittal process to allow for easier reference during the review process

3.1.2.3. The Engineer shall develop Project Layout Sheets at a scale of 1 in. = 200 ft. that indicates the limits of the entire Project

3.1.2.4. The Engineer shall tabulate quantities and prepare Summary Sheets

3.1.2.5. The Engineer shall prepare and update the General Notes, based on the Mobility Authority provided general notes, throughout the submittal process.

3.1.2.6. Prepare Survey Control Sheets that clearly indicate the benchmark locations and associated control information. These sheets will be sealed by a RPLS for submittal.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

3.2. TRAFFIC CONTROL PLAN

3.2.1. TCP Overview Plans, Narrative & Typical Sections

3.2.1.1. Develop TCP Overview Plans for each stage of traffic control. These plans will include advance warning signs for the Project on existing roadways being impacted approaching the construction and will act as key maps for each phase of TCP and shall be developed at a 1” =400’ scale.

3.2.1.2. Prepare a detailed Sequence of Construction narrative for inclusion in the plan set. The narrative will include a phase-by-phase, step-by-step written account of the proposed activities throughout the construction process. This is intended to be a narrative account of the activities shown in the Traffic Control Plan layouts.

3.2.1.3. Prepare Traffic Control Typical Sections for each stage of the construction sequence to clearly delineate the position of the existing traffic with respect to the proposed construction. Temporary traffic barriers and pavement markings will also be shown and dimensioned.

3.2.2. Traffic Control Plan Layouts

3.2.2.1. Engineer shall develop traffic control plan layouts (1in = 100ft) depicting the maintenance of traffic and sequence of work for each phase of the proposed construction. Detour alignments, location of work areas, temporary paving, temporary shoring, signing, adjustments to operations of the traffic signals, barricades, smart work zones, temporary crash cushion summary sheet and other details will be required to describe the traffic control plan. Any adjustments to the operations of the traffic signals will be coordinated through the agency responsible for operating the signal. The Engineer will verify that proper drainage can be maintained during each phase of construction.

3.2.2.2. Prepare Detour Layout Sheets showing plan & profiles where required to define the geometry for detours required in the Traffic Control Plans. Detour layouts will be prepared at a scale of 1”=100’H and 1”=10’V. The Engineer will provide the pavement design section for temporary detours.

3.2.2.3. Prepare Temporary Drainage Layout Sheets showing plan & profiles of temporary drainage for each phase of construction.

3.2.2.4. Road Closure Layouts: The Engineer shall prepare temporary road closure layouts where required for beam hanging operations and other short term road closures. The Engineer will be required to coordinate with the appropriate entities for any proposed road closures prior to including the road closure in the plans.

3.2.2.5. Advanced Signing Layouts: The Engineer shall provide a detailed layout (1in = 100ft) and arrangement of construction signs, construction pavement marking, traffic control devices (including temporary signals and signal heads). The TCP shall include locations of portable changeable message sign devices at all key locations both within the Project limits, and outside the right-of-way for each phase of construction.

3.2.2.6. Develop Traffic Control Details for items not covered by TxDOT standard drawings.

3.2.3. Construction Schedule

3.2.3.1. Prepare a Construction Time Determination Schedule to determine an approximate duration for each phase of construction. The schedule will be prepared using Primavera Scheduling Software and delivered at 90% and Final submittals.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

iv. Construction Time Determination Schedule (PDF and native format)

3.3. ROADWAY DESIGN

3.3.1. Roadway Plans & Geometry

3.3.1.1. The Engineer shall develop Existing and Proposed Typical Section Sheets for the Project.

3.3.1.2. The Engineer shall develop Roadway Plan and Profile sheets. Drawings shall be prepared at a scale of 1 in. = 100 ft. H and 1 in. = 10 ft. V.

3.3.1.3. Develop Ramp Gore Layouts at the intersection of each ramp with its adjacent roadways. These layouts will show proposed grading, as well as station, offsets, curb radius and curb locations. Drawings will be prepared at a scale of 1" = 40'

3.3.1.4. The Engineer shall develop miscellaneous grading details. These layouts shall show proposed grading, as well as station, offsets, curb radius and curb locations. Drawings shall be prepared at a scale of 1 in. = 40 ft.

3.3.1.5. The Engineer shall prepare Horizontal Alignment Data Sheets depicting the horizontal geometric information for the Project roadways included in the construction plan set.

3.3.1.6. The Engineer shall develop Miscellaneous Curve Data Sheets depicting the horizontal geometric information for roadway curves that are not concentric to roadway alignments.

3.3.1.7. The Engineer shall develop Superelevation Data Sheets. These sheets shall define the pavement cross slopes for individual roadway alignments and describe transition locations and values. Profile graphs are required as backup documentation to illustrate there will be no ponding issues created within super-elevation transition zones.

3.3.1.8. The Engineer shall develop Removal Layouts showing the locations for the removal of pavement, structures and other miscellaneous items. Drawings will be prepared at a scale of 1" =100'.

3.3.1.9. The Engineer shall develop a crash cushion summary sheet.

3.3.2. Grading and Details

3.3.2.1. The Engineer will complete the Open Roads 3D DGN and DTM to model the proposed Project elements.

3.3.2.2. The Engineer shall prepare Final Design Cross Sections at 50-foot stations and other locations as necessary for the determination of cut and fill

quantities and limits of construction. No cross sections will be needed at bridge locations. Cross sections shall display existing and proposed storm sewer and utility elements. Existing elements will be displayed using best available data.

3.3.2.3. The Engineer shall develop Miscellaneous Roadway Detail sheets for the Project. The sheets shall depict required details that are not defined in TxDOT standard detail sheets. When possible TxDOT Austin District or TxDOT Statewide standards shall be used for the Project development in that order unless otherwise directed.

DELIVERABLES

v. PS&E sheets

vi. Applicable calculations and data

vii. CAD Files in native format

3.4. DRAINAGE DESIGN

3.4.1. Review of Existing Drainage Analysis and Reports

3.4.1.1. Review existing Drainage Analyses/Reports prepared by others for the preliminary design. The prior work will be provided by the Mobility Authority to the Engineer. Review as-built records, FEMA Floodmaps, and publicly available GIS information.

3.4.2. Hydraulic Report:

3.4.2.1. The Engineer will prepare a drainage report to document the proposed drainage design development. The report shall summarize design criteria and methodologies and provide recommendations for required drainage infrastructure. The Report will document potential adverse drainage impacts caused by the project and provide mitigation strategies. The offsite hydrology will be modeled utilizing HEC-HMS. The cross-culverts shall be modeled using HEC-RAS or FHWA HY-8. Design Criteria shall be based upon the TxDOT Hydraulic Design Manual and criteria identified in prior studies. Should apparent conflicts arise in selecting design criteria, the Engineer should consult the Authority for clarification.

3.4.2.2. Obtain and review best available hydrologic and hydraulic models. When appropriate these will be used to develop existing and proposed conditions models.

3.4.2.3. Identify existing drainage outfalls within the limits of the Project. Delineate drainage area boundaries for each drainage outfall including area outside the limits of the Project that drains to an outfall within the Project

limits. Existing storm drain systems will be located and analyzed to the extent necessary for this study; storm drains outside of the project limit or those that will not be impacted by the project improvement will not be analyzed. Measure the existing impervious cover within each drainage area and compute the time of concentration and runoff curve number for each drainage area.

3.4.2.4. Compute the existing condition flows at all outfalls draining into receiving streams. Utilize 24-hour rainfall depths in the NOAA Atlas 14, Volume 11 Precipitation-Frequency Atlas of the United States, Texas and rainfall distributions employed in the most recent FEMA studies of the watersheds of interest to compute discharges for 2, 5, 10, 25, 50, 100-year rainfall frequencies. Where no FEMA study is available for a stream crossing, the 24-hour frequency storm distribution as implemented within HEC-HMS will be used.

3.4.2.5. Delineate proposed condition drainage area boundaries. Include areas that are outside the Project that drain to the proposed outfalls within the Project limits. Coordinate the drainage area delineation with adjacent Projects, if applicable. Measure the proposed condition impervious cover within each drainage area and compute the runoff curve number and the proposed condition time of concentration. Impervious cover measurements will be based on ultimate conditions with a fully paved median for the purpose of determining hydrologic impacts. Existing land use conditions will be assumed for drainage areas outside the proposed ROW unless there is knowledge of planned development. The Engineer shall coordinate with the Authority to obtain information pertaining to planned developments adjacent to the Project Corridor. If it is determined that a planned development is eminent and will utilize any part of the Project drainage conveyance system within the Project ROW, then the proposed build out conditions of the development shall be used in calculating runoff. Preliminary proposed condition storm drains will be located and sized.

3.4.2.6. Compute proposed condition flows at proposed outfalls draining into receiving streams. Utilize rainfall data as defined in Section 3.4.2.4 above.

3.4.2.7. Determine hydrologic impacts from the proposed Project by comparing the existing and proposed flow rates at each outfall, considering the hydrographs from upstream watersheds. Develop impact table to demonstrate change in flow rate, WSEL, and velocity at each Project outfall.

3.4.2.8. For non-FEMA regulated outfalls, the primary criterion for no adverse impact is no more than one-foot accumulative increase in water surface

elevation of the 100-year rainfall frequency with no additional structures or properties within the 100-year rainfall frequency area of inundation.

3.4.2.9. The Engineer should use HY-8, HEC-RAS or equivalent modeling approaches to evaluate changes in water surface elevation. The community floodplain administrator will be notified of the Project in accordance with TxDOT Hydraulic Design Manual Impacts of the 2, 5, 10, 25, 50, and 100-year events should be evaluated. The Engineer will evaluate (on a case-by-case basis) structures and properties that could potentially be impacted by comparing the elevations of the structures or properties sensitive to flood damage to the computed water surface elevations. The Engineer will present results of impact analysis to the Authority. FEMA coordination limited to acquisition of latest models and excludes permitting efforts.

3.4.2.10. Determine mitigation alternatives if the proposed Project could have an adverse drainage impact. The mitigation alternatives may include storm water detention basins and/or adjustments to proposed drainage area boundaries, possible adjustment to roadway profiles and adjustment of preliminary storm drains to accommodate required mitigation alternatives. Mitigation alternatives will be coordinated with the Authority. If detention is chosen as the alternative for mitigation, the design of the pond will achieve mitigation of impacts for 2, 5, 10, 25, 50, and 100-year rainfall events. The distance downstream at which to measure impacts shall be determined by the engineer on a case-by-case basis and documented in the Drainage Report. Submit a report that discusses the pertinent site information, assumptions, hydrologic and hydraulic analyses, and the proposed design of mitigation measures. The report should include a table that lists existing flows, proposed flows without mitigation, and proposed flows with mitigation (if mitigation proposed). A draft report with recommended mitigation measures will be submitted at the Initial Design Submittal. The report will be updated with each design milestone as necessary.

3.4.2.11. The Engineer will provide support for the Authority coordination for any approvals and permits required for a minor encroachment application of UBC WCID inundation easements at Blockhouse creek (assuming pier encroachments are less than 100 CY), coordination with UBC WCID, with limited development of permit documentation, identification of easement impacts, and excludes permit fees. Permit fees to be invoiced as a pass through cost.

3.4.2.12. Storm Drain Computations: The Engineer will analyze and design any modifications to existing or proposed storm drain systems. Computations and design information will be presented on the appropriate plan sheets.

Storm drain design will be performed in the Bentley OpenRoads Designer Drainage & Utilities program. Pavement drainage and spread criteria shall be per HEC-22 and the TxDOT Hydraulic Design Criteria. Storm drain design and computations will be separated into systems for ease of use; generally, each ORD design file will contain only one outlet per ORD best management practices. Twenty (20) systems are estimated of varying complexity.

3.4.2.13. Hydroplaning analysis report will include evaluation of hydroplaning using the Enhanced Hydroplaning Prediction Tool developed by the State of Florida. The findings of this report will be used to propose mitigation measures by roadway designers.

3.4.3. BRIDGE AND CULVERT PLAN SHEETS

3.4.3.1. Hydraulic Data Sheets: The Engineer will prepare hydraulic data sheets for bridges over the river, creeks and culvert within the Project if applicable.

3.4.3.2. External Drainage Area Maps: The Engineer will finalize previously determined drainage areas from the hydrologic analysis and prepare exterior drainage area maps sheets at a scale of 1" =200' or a scale acceptable to the Authority. The Engineer will show hydraulic crossing structure locations and, for large drainage basins, will indicate pertinent hydrologic information on these sheets.

3.4.3.3. Culvert layouts: The Engineer will prepare culvert plan and profile layouts at a scale of 1" =40'H and 1" =20'V or a scale acceptable to the Authority that will depict culvert geometry for reconstruction or lengthening, as well as the applicable hydraulic information in accordance with the TxDOT Hydraulic Design Manual and the TxDOT PS&E Preparation Manual.

3.4.4. Storm Drain Plan Sheets

3.4.4.1. Interior Drainage Area Maps: The Engineer will prepare interior drainage area map plan sheets at an appropriate scale. These maps will depict drainage area boundaries and flow direction arrows. Each drainage area will be identified with a unique number corresponding to run-off information from the calculation sheets.

3.4.4.2. Drainage Plan (40 sheets) and Profile Sheets (10 sheets): The Engineer will prepare drainage plan and profile sheets depicting locations of inlets, manholes, storm drains, culverts, utilities, channel improvements, ditch locations, cross-sections and flowlines as required. These sheets will be prepared at a scale of 1" =100'. Storm drain profiles will be prepared at a scale of 1" =100' H and 1" =10' V. Storm drain profiles are excluded from the 30% plan submittal; however the vertical design will be completed in

OpenRoads Drainage and Utilities at the 30% milestone to determine critical elevations and storm sewer information including hydraulics information will be available in a tabular format. Storm drain plans and profiles will show pipe size and type, inverts, slope, existing and proposed ground lines above the pipe, pertinent hydraulic information, and locations and sizes of inlets and junctions. The design storm HGL shall be clearly plotted and depicted on the Drainage Plan and Profile Sheets. Trench protection limits will be indicated on storm drain profiles.

3.4.4.3. Detention Ponds Layouts and Details: The Engineer will prepare detention pond layouts and details depicting the grading, inlet and outlet structure locations, cross-sections, flowlines, and additional details, excluding structural details for the ponds. These sheets will be prepared at a scale of 1" =40'. Set one Pond locations as follows: Red Raider, Eagle #1, Eagle #2, Aztec, Warrior A, Warrior B, Jacques, Lobo Det, Couger, Boilermaker. Set two pond locations are as follows: Dolphin, Wildcat, Bulldog, Lobo WQ, Elbow, Foxworth, Longhorn, Spartan, Badger, Aggie. It is assumed that set one will include detention design and set two will not include detention design. In addition, 10 locations of inline detention storage are anticipated. Sheets will be prepared for inline detention including box culvert layouts, restrictor structure details, and maximum anticipated discharge-elevation-storage tables to detail peak WSELs and flow rates through the structure. These inline detention structures are solely for attenuating flow rate and are not designed for water quality treatment.

3.4.4.4. Ditch Layout Schedule: The Engineer will prepare a tabular ditch layout schedule that includes pertinent hydraulic information for proposed roadside ditches based on normal depth computations. This table will include station, offset, flow line elevation, ditch lining material, as well as ditch bottom width. The tables will be shown on the drainage plan sheets. Existing ditches that will remain in their existing conditions and that are not directly impacted by the Project will not be analyzed.

3.4.4.5. Drainage Detail Sheets: The Engineer shall use TxDOT standard details where practical. The Engineer shall provide drainage design details for "nonstandard" drainage structures in instances where TxDOT standard details cannot be utilized.

3.4.4.6. Temporary Drainage Facilities: The Engineer will develop temporary drainage facilities necessary to allow staged construction of the Project. The Engineer will design required temporary drainage structures for a 5-year frequency event, and include structure size, flow line elevations and approximate structure location on the traffic control plan sheets. The

Engineer will evaluate temporary drainage ditches between temporary drainage structures and outfall locations and designate a typical ditch section in the plans along with plan notes for the contractor to maintain positive drainage for these temporary ditches.

3.4.4.7. Trench Protection Determination: The Engineer will identify storm drain and culvert construction areas that will require trench protection or special shoring and indicate this information on the plans.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

iv. Electronic version of the validated Project Specified Unit Hydrograph Model.

v. Electronic versions of the H&H Models (HEC-RAS, HEC-HMS) and applicable data and maps

vi. Electronic version of the Hydraulic Report in both *.doc and *.pdf Formats.

vii. Electronic versions of the Storm Drainage Model, applicable data and maps

3.5. ENVIRONMENTAL

3.5.1. Storm Water Pollution Prevention Plan (SWP3)

3.5.1.1. The Engineer will develop storm water pollution prevention plan layout sheets for the length of the Project that complements the design and construction phasing of the Project and will include notes that indicate the contractor is responsible for detailed sequencing of the devices. The Engineer will consider applicable BMPs.

3.5.1.2. The Engineer will prepare SWP3 summary plan sheet(s) in accordance with Texas Pollution Discharge Elimination System (TPDES) regulations and TxDOT practices. The Engineer will use TxDOT SWP3 text sheet(s) to summarize SWP3.

3.5.1.3. The Engineer will prepare SWP3 details for related items that are not covered by TxDOT standard details.

3.5.2. EROSION & SEDIMENTATION CONTROL

3.5.2.1. The Engineer will develop erosion and sediment control plan layout sheets for the length of the Project to detail permanent erosion and sediment control measures.

3.5.2.2. The Engineer will prepare Erosion and sediment control details for related items that are not covered by TxDOT standard details.

3.5.3. TCEQ COORDINATION, WATER QUALITY DESIGN & WPAP

3.5.3.1. The Engineer shall determine the pre-regulatory impervious cover condition of the corridor using historical aerial imagery to be used as the baseline for the project, water quality calculations, and TCEQ permit.

3.5.3.2. The Engineer shall determine the post-project impervious cover condition of the corridor using project survey and design files which will be used as the primary basis of water quality calculations and TCEQ permit. The Engineer will also determine the "ultimate" impervious cover condition, assuming the median is fully impervious.

3.5.3.3. The Engineer will review of the past TCEQ Edwards Aquifer permits within the corridor limits to determine the location and drainage areas to existing permitted BMP's. The Engineer will determine which existing BMP's will remain after construction of the Project. It is assumed this will only include review of the following permits and that permits will be provided by the CTRMA: US 183A Section 9, Phase 1, Phase 2, TxDOT GPL, Cedar Park New Hope Drive. Additional coordination with TCEQ for existing permits is not anticipated.

3.5.3.4. The Engineer shall prepare water quality calculations using the TCEQ computation spreadsheet. Two sets of water quality calculations will be prepared and reviewed with the CTRMA and GEC to verify the desired water quality treatment design.

3.5.3.4.1. Post-Project Conditions: The required treatment will be computed along the corridor from the pre-regulatory to the post-project condition. The provided treatment post-project of each BMP along the corridor (existing, proposed and modified) will be computed and reported within the water quality memorandum and TCEQ application.

3.5.3.4.2. Ultimate Conditions: The required treatment assuming an "ultimate condition" (fully paved median) will be computed along the corridor and compared with the pre-regulatory condition to determine the required ultimate conditions TSS removals. The Engineer will determine BMP sizing for ultimate when compared to the Pre-Regulatory Conditions. Results of this assessment will be discussed with the CTRMA and GEC to determine the appropriate path forward for this Project.

3.5.3.4.3. Calculations and methodology will be documented in a Water Quality Technical memorandum to be included with the project Drainage Report and the TCEQ permit.

3.5.3.5. The Engineer shall prepare a TCEQ Edwards Aquifer Roadway Application. This includes figures, drainage report, and other supporting information required by each of the forms within the application. Draft permit application will be included with the 90% submittal and Final submittal. Final Permit will be submitted to TCEQ after Final submittal with signed and sealed plans.

3.5.3.6. The Engineer shall prepare WPAP Summary Sheet(s) with TCEQ WPAP General Construction Notes and best management practices (BMP) calculation data by stormwater facility.

3.5.3.7. The Engineer shall prepare WPAP Treatment Plan sheets at a scale of 1 in. = 200 ft. The purpose of these sheets is to identify existing and proposed treated impervious areas and BMP locations.

3.5.3.8. The Engineer will prepare water quality BMP plan layouts and details depicting the grading, inlet and outlet structure, cross-sections, flowlines, and additional details for modified and proposed the BMPs. Refer to task 3.4.4.3 for list of "Set one" and "Set two" pond locations. Pond outfalls will be shown in plan view and depicted on the plan view of the pond layouts and shown in profile view on either the detail sheet or a separate profiles sheet. Outfall plan and profile information will follow the convention of the storm drain plan and profiles in Task 3.4.4.3.

3.5.3.9. Quality Assurance/Quality Control Review: As design services for the water quality ponds will be performed by multiple Firms, QA/QC review will occur between Firms to ensure quality and consistency of deliverables. The Engineer will ensure all water quality designs meet TCEQ regulations and Mobility Authority standards.

3.5.4. EPIC

3.5.4.1. The Engineer will update the EPIC sheet as necessary throughout the project development and include in the plans.

3.5.5. Geologic Assessment for WPAP

A Geologic Assessment will be provided by the Mobility Authority.

DELIVERABLES

i. PS&E sheets

ii. TCEQ Edwards Aquifer Protection Plan Application

iii. Applicable calculations and data

iv. CAD Files in native format

ASSUMPTIONS

i. It is assumed that the CTRMA will provide all existing TCEQ permits and approval letters within the Project Limits.

ii. It is assumed that the TCEQ Roadway Application permit for this Project will replace all existing permits within the project limits instead of modifying previous permits. As such, all existing BMP's will be re-permitted with this Project. Only one new permit is expected and no modifications to previous permits.

iii. For the purposes of water quality calculations and reporting, existing BMP's along the corridor are assumed to generally include Vegetative Filter Strips, Grassy Swales, and 20 ponds and 22 vaulted treatment systems (Jellyfish Filters).

- If the project does not directly impact an existing BMP that relies on flow and velocity calculations (specifically Grassy Swales and Vaulted Systems), it is assumed that the existing permitted calculations are accurate and can be leveraged.

iv. All BMP's required to meet the Post-Project TCEQ requirements will be sized for Ultimate conditions to the greatest extent practicable. If achieving the Ultimate conditions design requires significant deviation from the modifications anticipated here or what is required for Post-Project, the approach will be discussed with the CTRMA and GEC staff prior to commencing with detailed design. BMP's only required for Ultimate conditions may not be constructed with this project.

v. The Water Quality design will include the following:

- 2 new ponds (assume Warrior B will be needed due to Warrior A groundwater conveyance and location within the floodplain)
- Modifications to 9 water quality ponds and 3 combined water quality and detention ponds
- Conversion of 3 ponds from detention to dual water quality

and detention ponds

- No volumetric modifications to Eagle, or Aggie ponds. The water quality and/or detention performance of these ponds will be evaluated and design water surface elevations calculated. Modifications to the outlet structures (splitter boxes) are anticipated to ensure the facilities meet design requirements with Atlas 14 flow rates.
- No new non-vault BMP's outside of the Pond modifications identified.

vi. Design work for existing BMP modification for additional water quality treatment include these assumptions:

- Each existing pond BMP's maximum practical volume will principally be achieved by replacing 3:1 slopes with vertical retaining walls.
- Pond BMP's within "Set one" will principally be designed as batch detention ponds.

vii. Pond BMP's within "Set two" will principally be designed as sand filter ponds. Water Quality design will include up to nine (9) new vaulted treatment systems, all assumed to be Contech Jellyfish or their equivalent.

viii. Design Plan sheets for Eagle and Aggie ponds expected to include a simplified pond layout based on survey and updated calculations. Pond details from the original design plans will also be included with the TCEQ permit to show details of design such as underdrain piping, outlet design and/or other detailed design elements unmodified by the current project.

3.6. RETAINING WALL DESIGN

3.6.1. The Engineer shall provide layouts (scale Max: 1" = 40' and Min: 1" =100'), elevations, quantity estimates, summary of quantities, typical cross sections, and structural details of all retaining walls within the Project

3.6.2. The Engineer shall determine if walls are required and verify the need for and length of the retaining walls. The Engineer shall make proposals to the Authority regarding most suitable wall type for each application.

3.6.3. Engineer will prepare Retaining Wall Key Map depicting the various wall locations. Soil boring locations will also be depicted on these sheets.

3.6.4. Engineer will prepare retaining wall layout sheets showing plan and profile of retaining walls. Engineer will provide associated details in plan and profile views. Engineer shall provide soil boring profiles on separate plan sheets.

3.6.5. Engineer will prepare structural details for soil nail walls if used.

3.6.6. Engineer will identify temporary shoring needs and prepare layouts as necessary.

3.6.7. Engineer will prepare Retaining Wall Typical Sections sheets.

3.6.8. Engineer will prepare Retaining Wall Horizontal Alignment Data Sheets depicting the horizontal geometric information for the Project retaining walls to be included in the construction plan set.

3.6.9. Engineer will detail type, limits, and anchorage details of railing (if applicable)

3.6.10. Provide details related to the interface of retaining wall at bridge abutments.

3.6.11. Provide all boring logs utilized within their design. Borings shall be shown on wall plans at actual location with log information. Separate logs shall be submitted to the GEC for records purposes.

3.6.12. The Engineer will assemble the necessary retaining wall standard details.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

iv. Boring Logs (PDF & native)

3.7. NOISE WALL DESIGN

3.7.1. The Engineer shall provide layouts (scale Max: 1" = 40' and Min: 1" =100'), elevations, quantity estimates, summary of quantities, typical cross sections, and structural details of noise walls within the Project. The scope of work outlined in this section corresponds to the list of noise walls provided by CTRMA. It is assumed that CTRMA will provide the aesthetic theme and aesthetic details for the noise walls.

3.7.2. The Engineer shall make proposals to the Mobility Authority regarding most suitable wall type for each application. This effort will be documented with a Noise Wall Type Memo.

3.7.3. The Engineer will prepare Noise Wall Key Map depicting the various wall locations. Soil boring locations will also be depicted on these sheets.

3.7.4. The Engineer will prepare noise wall layout sheets showing plan and profile of noise walls. Engineer will provide associated details in plan and profile views. Engineer shall provide soil boring profiles, as applicable on separate plan sheets.

3.7.5. The Engineer will prepare structural details for noise walls as necessary.

3.7.6. The Engineer will prepare Noise Wall Typical Sections and aesthetic detail sheets.

3.7.7. The Engineer will prepare Noise Wall Horizontal Alignment Data Sheets depicting the horizontal geometric information for the Project Noise walls to be included in the construction plan set. This information will be included on the noise wall layout sheets.

3.7.8. The Engineer will detail foundation type, limits, and anchorage details of railing (if applicable)

3.7.9. The Engineer will provide details related to the interface of noise wall with adjacent structures.

3.7.10. The Engineer will provide all boring logs utilized within their design. Borings shall be shown on wall plans at actual location with log information. Separate logs shall be submitted to the GEC for records purposes. This information will be included on the noise wall layout sheets.

3.7.11. The Engineer will assemble the necessary retaining wall standard details.

DELIVERABLES

v. PS&E sheets

vi. Applicable calculations and data

vii. CAD Files in native format

viii. Boring Logs (PDF & native)

ix. Noise Wall Type Memo

3.8. STRUCTURAL DESIGN

3.8.1. All bridge design shall be in conformance with the latest edition of the State's LRFD Bridge Design Manual, Bridge Project Development Manual, Bridge Detailer's Manual, and AASHTO LRFD Bridge Design Specifications (HL 93 Loading).

3.8.2. The Engineer shall finalize Bridge Layout plans, elevations and typical sections.

3.8.3. The Engineer shall incorporate, into the final design of the bridge elements, aesthetic design features and details.

3.8.4. The Engineer shall generate final design calculations and final detail drawings for the Project structures. Structural design calculations and final detail drawings will be in accordance with standard requirements of TxDOT. The Engineer's designer and checker shall both check calculations and sign the front page of each individual calculation package. The Engineer shall submit structural design calculations and quantity calculations for review at the Final submittal. The

Engineer shall coordinate interim over the shoulder reviews at the request of the Authority and GEC.

3.8.5. The Engineer shall develop Boring Log Key map layout sheets indicating locations of geotechnical boring.

3.8.6. Boring Log Elevations: The Engineer will include boring logs for each geotechnical borings on separate sheets.

3.8.7. Estimated Quantities and Bearing Seat Elevations: The Engineer shall provide bridge quantity summaries.

3.8.8. Abutment details and calculations shall be provided for custom abutments

3.8.9. Interior Bent details and calculations shall be provided for custom interior bent details (caps and columns).

3.8.10. Footings: Details and calculations shall be provided for footing elements.

3.8.11. Framing Plan: For steel girder design, this effort includes design of steel girders and field splices.

3.8.12. Slab Plan: The slab plan includes the development of prestressed beam designs.

3.8.13. Foundation Design: Details for foundation layouts and calculations shall be provided for foundation elements.

3.8.14. Drainage Details: The Engineer shall provide details for concealed drainage for bridge deck scuppers. Drainage slots in bridge rails shall not be used for the mainlane structures.

3.8.15. Aesthetic Design: The Engineer shall finalize detailed drawings for aesthetic features compatible with the Project aesthetic theme.

3.8.16. Miscellaneous Details: The details shall include Structural Details for aesthetics. These sheets will be developed with combined details for use on various structures.

3.8.17. Standard Details: The Engineer will use the latest TxDOT standard details for beams, diaphragms, railings, expansion joints, riprap, etc. wherever possible. Prepare Project-specific modified standards necessary for inclusion in the PS&E package. Sign, seal and date all Project-specific modified standards.

3.8.18. Specifications: The Engineer will develop specifications as needed for bridge structures

3.8.19. Bridge Type Cost Report: The Engineer will develop and submit a report summarizing options for widening width (minimum width versus full width and stand-alone interior bents versus continuous interior bents) including construction phasing, cost and duration for review and consideration by the Mobility Authority.

3.8.20. Exhibit A Development and Coordination: The Engineer will develop the necessary Exhibit A documents for coordination with Cap Metro and their subsequent review and approval.

3.8.21. Bridge Summary Sheet: The Engineer will develop a Bridge Summary Sheet summarizing the bridge quantities on the project.

3.8.22. Cost Estimates: The Engineer will prepare cost estimates for bridges as part of the 30%, 60%, 90% and 100% submittals.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

iv. Boring Logs (PDF & native)

3.9. SIGNING, MARKING & SIGNALIZATION

3.9.1. The Engineer shall prepare layouts, specifications, and details for striping, pavement markings, and signing. Layouts will be prepared at a scale of 1" = 100' and will depict striping, delineator, pavement markings and small and large signs. The Engineer shall coordinate with the GEC & SI for final signing strategies including toll signing and placement of signs outside contract limits.

3.9.2. The Engineer shall detail Final Design permanent pavement markings and channelization devices on plan sheets. Pavement markings shall be selected from the latest TxDOT standards.

3.9.3. The Engineer shall prepare Small Sign Detail sheets for non-standard small signs. These sheets shall show the overall dimension of the signs by determining letter size and spacing.

3.9.4. Prepare Final Design Large Guide Sign Layout Sheets: Engineer shall prepare layout sheets for all large guide signs at a scale of 1 in. = 200 ft

3.9.5. The Engineer shall prepare Large Guide Sign Detail sheets. These sheets shall show dimensions, layout of text, directional arrows and shields, borders and colors.

3.9.6. The Engineer shall prepare Overhead Sign Structure Elevations Detail sheets. These sheets shall include electrical service conduit for future ITS facilities.

3.9.7. Prepare Final Design for Overhead Sign Structural Details: The Engineer shall prepare overhead sign structure details.

3.9.8. Prepare Summary of Small Signs.

3.9.9. Prepare Summary of Large Signs

3.9.10. Traffic Signal Plans: the Engineer shall prepare signal plans and details necessary for the signal cabinet relocation at Crystal Falls Parkway.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

3.10. ILLUMINATION

3.10.1. The Engineer shall review existing lighting system and determine the necessary lighting system modifications.

3.10.2. The Engineer shall design safety lighting at ramp merge locations, auxiliary lanes, and other locations as required and power required for the system.

3.10.3. The Engineer shall design the illumination modifications and additions for 183A to be consistent with the existing illumination utilized on US 183A.

3.10.4. The engineer shall prepare illumination plan layouts and details necessary for the lighting system.

3.10.5 The engineer shall evaluate proposed improvements to determine underpass lighting at applicable locations, including cross streets, turnaround, and trail connections.

DELIVERABLES

iv. PS&E sheets

v. Applicable calculations and data

vi. CAD Files in native format

3.11. INTELLIGENT TRANSPORTATION SYSTEMS

3.11.1. The Engineer shall develop ITS plan layouts, elevations, and details for the relocation, adjustment, and reconnection of existing ITS devices and infrastructure. The Engineer shall coordinate with TxDOT, the Mobility Authority, and Systems Integrator (SI) to obtain existing information, device configuration, field conditions, and directives for the relocation ITS Design.

3.11.2. The Engineer shall prepare plans for the relocated ITS infrastructure, including adjustments to conduit, duct bank, laterals, ground boxes, power and communications routing, electrical service modifications, existing CCTV's, detection systems, dynamic message signs, and equipment cabinets. The Engineer shall include all applicable standards, specifications, details and estimates for the system in the plan set.

3.11.3. The Engineer shall evaluate all existing CCTV cameras within the project limits and verify that camera spacing meets the required ½ mile coverage interval. The

Engineer shall identify and design relocations for any existing CCTV units that are in conflict with the proposed improvements and incorporate additional CCTV installations as necessary to maintain continuous coverage at the ½-mile spacing.

3.11.4. The Engineer shall coordinate with the Mobility Authority and TxDOT and other designees to obtain their review and comment on the Final ITS infrastructure design submittal published by the Engineer.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

3.12. ELECTRONIC TOLL COLLECTION

3.12.1. The Engineer shall develop ETC plan layouts to incorporate the additional equipment in coordination with the Mobility Authority's System Integrator (SI).Engineer to develop updated gantry elevations and gantry plan layouts showing stationing, additional conduit, and ground boxes needed for additional tolling equipment recommended by SI.

3.12.2. Design shall support the Mobility Authority tolling requirements and TxDOT ITS standards, including coordination with both agencies throughout the design and implementation phases.

3.12.3. The engineer shall maintain all existing ETC communications connectivity during construction.

3.12.4. The engineer is not revising the system architecture diagrams, ETC communication paths, cabinet interfaces, and/or network topology. Fiber routing, splice diagrams, and network details shall be provided by SI.

3.12.9. The Mobility Authority intends for all tolling gantries to remain in their existing locations. While gantries may be modified as necessary to accommodate additional lanes, no relocations or new gantries are anticipated. Any equipment or structural adjustments shall be performed in coordination with the Systems Integrator. There is no anticipated need for temporary fiber during construction to maintain system connectivity.

DELIVERABLES

i. PS&E sheets

ii. Applicable calculations and data

iii. CAD Files in native format

3.13. MISCELLANEOUS

ATTACHMENT C
SERVICES TO BE PROVIDED BY THE ENGINEER
183A Added Capacity Professional Services

3.13.1. AESTHETIC DETAILS

3.13.1.1. The Engineer shall develop aesthetic plans and details in conformance with existing corridor aesthetic.

3.13.2. LANDSCAPE/HARDSCAPE

3.13.2.1. The Engineer shall develop landscape architecture planting and hardscape plans to restore the 183A Shared Use Path Trailhead outdoor gym area disturbed by the project including details, specifications and estimated quantities. It is assumed that the outdoor gym area will be widened to the west to compensate for the lost area due to the bridge widening. It is also assumed that the outdoor gym area will not be relocated.

3.13.3. UTILITY

3.13.3.1. The Engineer shall provide utility layout sheets detailing the disposition of each utility (existing to remain, existing to be removed, existing to be abandoned in place, and proposed utilities)

3.13.4. STANDARDS, SPECIFICATIONS, ESTIMATES, QUALITY CONTROL

3.13.4.1. Download the appropriate TxDOT Standards from the State's web site. The Engineer will revise and seal any Standard that requires modification. All other standards will have their title blocks filled out with the applicable Project data and printed for inclusion in the final plan set. The Engineer will utilize Austin District Standards where applicable.

3.13.4.2. The Engineer shall provide (signed and sealed) any necessary details required to supplement standard details.

3.13.4.3. The Engineer shall prepare a tabulation of applicable Specifications, Special Specifications and Special Provisions.

3.13.4.4. Prepare General Notes utilizing TxDOT Austin District most recent version.

3.13.4.5. Prepare a Construction Cost Estimate at each submittal, and supply a copy to the Mobility Authority in Microsoft Excel format.

3.13.4.6. Prior to each milestone submittal, the Engineer shall conduct a review in accordance with the QA/QC procedures outlined in the Engineer's Quality Control Plan.

3.13.4.7. Independent engineering interdisciplinary quality reviews during the PS&E 30%, 60%, 90% and Final submittals. The interdisciplinary team will consist of senior technical advisors that have no direct involvement with the project design to include roadway, drainage, structural, geotechnical, utility and aesthetics disciplines. The interdisciplinary review must be performed to identify potential design errors, inefficiencies and conflicts between

disciplines and recommend possible solutions and mitigation measures. All comments must be captured in an Interdisciplinary Review Log. Constructability reviews of the schematic and PS&E package at schematic completion, 60% and 90% submittals to identify potential constructability issues and options that would provide substantial time savings during construction. The constructability review must be performed for all roadway and structural elements, such as: Sequence of Work/Traffic Control, Drainage (Temporary and Permanent), Storm Water Pollution Prevention Plan (SWP3); ensuring Environmental Permits, Issues and Commitments (EPIC) are addressed; Utility conflicts are identified; ensuring accuracy and appropriate use of Items, Quantities, General Notes, Standard and Special Specifications, Special Provisions, Contract Time/Schedule, Standards; and providing detailed comments in an approved format. Reviews must be captured in a Constructability Log identifying areas of concern and potential conflict. The Engineer shall provide the results of all Constructability reviews and recommendations to the Authority. Final Design plans, calculations, and cost estimates prepared by Engineer are to be thoroughly reviewed and checked before submittal to the Authority for review. The Engineer has total responsibility for the accuracy and completeness of the plans and related designs prepared under this Project and shall check such material accordingly. The plans will be reviewed by the Authority and TxDOT for conformity with the Authority's procedures and the terms of the Project. The Authority will provide independent QA/QC audits to verify Project compliance with this plan. The Engineer shall have a Quality Control Plan in effect during the entire time work is being performed under this Project.

3.13.4.8. The Engineer shall submit electronic design elements in accordance with the agreed upon protocol with the Authority. These electronic design elements shall be incorporated into the Authority's VUEWorks asset management software platform.

3.13.4.9. Bid Phase Support

3.13.4.9.1. The Engineer will coordinate with the Mobility Authority for the Bid Package including but not limited to answering prospective bidder questions and preparing addenda as necessary.

3.13.4.9.2. The Engineer will attend one pre-bid meeting.

3.13.4.9.3. The Engineer will assist the Mobility Authority at contract bid opening.

3.13.4.9.4. The Engineer will tabulate the bids, research low bidder and make a recommendation of award to the Mobility Authority.

DELIVERABLES

i. PS&E sheets
ii. Applicable calculations and data
iii. CAD Files in native format
iv. Construction Cost Estimate (PDF and native format)
v. QA/QC Records & Red-lined Plans
vi. Standard Specification List, Special Provisions, Special Specifications

4. CONSTRUCTION PHASE SERVICES

4.1. General

4.1.1. Written requests for Construction Phase Services shall include a description of the work requested, a mutually agreed upon time limit, and any special instructions for coordination and submittal. Typical time limits for Requests for Information (RFIs) and Submittals will be 7 days. RFI and/or Submittals that are more involved may require a 14-day time limit.

4.2. Review and Approval of Shop Drawings

4.2.1. The Engineer will review and approve shop drawings, forming details and equipment submittals.

4.2.2. The Engineer shall review shop drawings pertaining to various project elements.

4.2.3. The Engineer shall comply with the following procedures for shop drawing review:

4.2.3.1. Review the drawings for conformity to the plans, specifications, and special provisions, as well as conformity to any subsidiary standards or criteria referred to by the plans, specifications or special provisions

4.2.3.2. Review the drawings for conformity to the plans, specifications, and special provisions, as well as conformity to any subsidiary standards or criteria referred to by the plans, specifications or special provisions.

4.2.3.3. If the drawing is found to be in conformity, or an alternate design is adequate and acceptable, the drawing shall be marked “No Exceptions Taken” with signature, date and statement that “Review is only for general conformance with the design concept of the contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project plans and specifications, nor departures therefrom. The Contractor remains solely responsible for details and

accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, for safety and for satisfactory performance of his work."

4.2.3.4. If there are only minor corrections, the incorrect information shall be crossed out and the correct information will be written next to the crossed out information. All the redlines shall be done in indelible red ink. The submittal shall be returned marked "Make Correction as Noted" and no re-submittal shall be required.

4.2.3.5. If the corrections are more significant and the Engineer does not concur with the information on the drawings, then the submittal shall be returned marked "Revise and Resubmit." The drawings must then be resubmitted for a second review.

4.2.3.6. If the drawings are not found to be in conformity, the drawings shall be marked "Rejected See Remarks." An explanation of why the submittal was disapproved will be provided in enough detail for the Contractor to be able to make the corrections for re-submittal

4.2.3.7. A cover letter will be returned with the reviewed drawings containing:

4.2.3.7.1. A description of the submittal

4.2.3.7.2. The status of the submittal

4.2.3.7.3. A listing of sheet numbers and titles reviewed

4.2.3.7.4. If the design reviewed was an alternate design, a notation declaring that an alternate design was presented and what criteria were used to determine if the alternate design is adequate and acceptable

4.2.3.7.5. If the submittal was accepted with exceptions, an explanation of the exceptions will be included

4.2.4. Shop drawing procedures as identified in Section 5.1.3 may be modified as directed by the Mobility Authority.

4.2.5. The Engineer will review and approve shop drawings, forming details and equipment submittals.

4.2.6. The Engineer shall review equipment submittals as directed by the Authority.

4.2.7. The Engineer shall utilize the same procedures as defined in Section 5.1.3 for equipment submittal reviews.

4.3. Responding to RFIs and Answering General Questions

4.3.1. The Engineer shall be available to respond to questions related to the plans and specifications as needed throughout the duration of the construction.

4.3.2. The Engineer will document each question in sufficient detail, formulate a response and submit a written version of the response to the Mobility Authority.

4.3.3. Develop Change Orders to the plans at the request of the Mobility Authority.

4.4. Project Management, Coordination Meetings & Invoicing

4.4.1. The Engineer will document each question in sufficient detail, formulate a response and submit a written version of the response to the Mobility Authority.

4.4.2. The Engineer will participate and attend coordination meetings as requested by the Mobility Authority.

4.4.3. Develop Change Orders to the plans at the request of the Mobility Authority.

4.4.4. Follow invoice procedures as described in the Contract.

EXCLUSIONS

i. Modifications to the TCEQ permit application during construction are not included under this scope.

ii. Landscape work is not included under construction phase services.

ATTACHMENT D

Key Personnel

1.) Project Manager – Robin Handel
2.) Deputy Project Manager – Anthony Serda
3.) Structural Task Lead – Tom Ashcraft
4.) Roadway Task Lead – Bud Kraft
5.) Drainage Task Lead – Brandon Hilbrich
6.) Water Quality Task Lead – Leigh Ruhnau
7.) Traffic Control Task Lead – Matt Beran
8.) QAQC Lead – Wade Lansdell Strong

ATTACHMENT E

FEE SCHEDULE
(Final Cost Proposal)

This attachment provides the basis of payment and fee schedule**. The basis of payment for this contract is indicated by an "X" in the applicable box.** The basis shall be supported by the Final Cost Proposal (FCP) included with each Work Authorization. If more than one basis of payment is used, each one must be supported by a separate FCP.

"X"	Basis	
☐	Lump Sum	The lump sum shall be equal to the maximum amount payable. The lump sum includes all direct and indirect costs and profit. For payment the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or other evidence of cost, but must submit billing information in a form acceptable to the Mobility Authority as required by Article 4 A & B including classifying work, partial or completed, according to the Table of Deliverables. The Mobility Authority will agree to pay Engineer, and the Engineer will agree to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Contract and the Work Authorization, a Lump Sum amount for the specified category of services. The Lump Sum will include compensation for Engineer's services and services of subconsultants, if any. Appropriate amounts will be incorporated in the Lump Sum to account for labor, overhead, profit, and reimbursable expenses. The portion of the Lump Sum amount billed for Engineer's Services will be based upon Engineer's estimate, as approved by the Authority's Director of Engineering, of the proportion of the total Services completed during the billing period to the Lump Sum amount.

☐	Unit Cost	The unit cost(s) for each type of unit and number of units are shown in the FCP. The unit cost includes all direct and indirect costs and profit. For payment, the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or any other cost data. The FCP may include special items, such as equipment which are not included in the unit costs. Documentation of these special costs may be required. The maximum amount payable equals the total of all units times their respective unit cost plus any special direct items shown. The Mobility Authority will agree to pay the Engineer, and the Engineer will agree to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Contract and the Work Authorization, an agreed upon unit price multiplied by the number of units completed for each billing. Each invoice submitted shall identify the specific Contract task(s) and completed work product/deliverable for the agreed upon price outlined in the Work Authorization.
☐	Specified Rate Basis	The specified rates for each type of labor are shown in the FCP below. The FCP may include special items, such as equipment which are not included in the specified rates. The specified rate includes direct labor and indirect cost and profit. The Mobility Authority may request documentation of reimbursable direct costs including hours worked. Documentation of special item costs may be required. The specified rate is not subject to audit. Revisions to the specified rates may be proposed no more frequently than once per calendar year, and no sooner than 12 months after the Effective Date and are subject to written approval of the Executive Director. The Mobility Authority will agree to pay the Engineer, and the Engineer will agree to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Contract and the Work Authorization, an amount equal to the cumulative hours charged to the specific Project by each class of Engineer's employees multiplied by the Standard Hourly Rates for each applicable billing class for all Services performed on the specific Project, plus reimbursable expenses and sub consultant's charges, if any.
X	Cost Plus	The Mobility Authority will agree to pay, and the Engineer will agree to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Contract and the Work Authorization, hourly rates for the staff working on the assignment computed as follows: *Direct Labor Cost x (1.0 + Overhead Rate) x (1.0 + 10 %, in decimal form).* The invoice must itemize labor rates, hours worked, other direct costs and indirect costs. The Engineer may be required to provide documentation of hours worked and any eligible direct costs claimed. The provisional overhead rate charged is subject to audit and adjustment to actual rates incurred. The FCP below shows the hourly rates for labor, other direct expenses including but not limited to travel and allowable materials, and provisional overhead rate. Actual wages must be within the allowable range shown on the Final Cost Proposal.

Without prior approval by the Executive Director, the Mobility Authority shall not reimburse the Engineer for expenses associated with relocating personnel to complete the services described by this Contract. Roadway tolls incurred by the Engineer or any of its subconsultants in connection with performance of the Services will not be reimbursable under this Contract. Reimbursement shall be limited to the terms of any financial assistance or Project agreements with TxDOT or other third parties. Travel expenses will be limited to the rates published by the Texas Comptroller of Public Accounts.

Engineer acknowledges that all expenses and costs paid or reimbursed by the Mobility Authority using federal or state funds shall be paid or reimbursed in accordance with, and subject to, applicable policies of the Mobility Authority and other applicable state and federal laws, including the applicable requirements of OMB Circular A-87, which may reduce the amount of expenses and costs reimbursed to less than what was incurred.

* The **MAXIMUM AMOUNT PAYABLE** is $**9,991,090.75**.

The amount payable is based on the following rate data shown below. Maximum rates will be adjusted on an annual basis at the beginning of each calendar year beginning January 1, 2027. Annual rate adjustments will be capped at a 3.5% per annual increase.

The overhead rate will be adjusted annually and effective upon approval by the Chief Financial Officer.

* The maximum amount payable must be based on the contract scope. The work authorization fee schedules will be derived from this attachment.

ATTACHMENT F

Work Schedule

to be provided with each work authorization

ATTACHMENT G

Computer Graphics for Document and Information Exchange

to be provided with each work authorization

ATTACHMENT H
Subcontracting

STV Incorporated planned subcontract team members at the Contract effective date:

HDR Engineering, Inc.
EDGE Engineering, PLLC
Corsair Consulting, LLC
McGray & McGray Land Surveyors, Inc.