

HIDALGO COUNTY
Professional Engineering Services
Contract # 19-020-10-22
Work Authorization Form

WORK AUTHORIZATION NO. 1

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Section 7 of the Agreement made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**," and, **Millennium Engineers Group Inc.**, professional engineers of Pharr, Texas, hereinafter called "**Engineer**".

PART 1. SCOPE OF WORK

The purpose of this Work Authorization is for the **Engineer** to provide *Professional Engineering Services for Inspection, Material Testing, and construction Management for the North Alamo Road Realignment Project in Hidalgo County Precinct No. 4.*

The scope of services to be provided by the **Owner** is identified in **EXHIBIT "A" - Scope of Services to be provided by the Owner** attached hereto.

The scope of services to be provided by the **Engineer** is identified in **EXHIBIT "B" - Scope of Services to be provided by the Engineer** attached hereto.

PART 2. ESTIMATED COST

The estimated cost for services under this Work Authorization is **\$ 107,412.25**. This amount is based upon the costs outlined in the Estimated **Cost Proposal** attached hereto as **EXHIBIT "D"**.

PART 3. PAYMENT

Compensation and payment to the **Engineer** for the services established under this Work Authorization shall be made in accordance with **Article 6.1** of the Agreement.

PART 4. FUNDING

This Work Authorization No. 1 shall be funded through funding source:

Account No. _____

Requisition Number _____ (MUST BE INCLUDED AFTER CC APPROVAL)

PART 5. PERIOD OF SERVICE

This Work Authorization shall become effective on the date of final acceptance of the parties hereto, and terminate upon project completion.

PART 6. RESPONSIBILITIES AND OBLIGATIONS

This Authorization does not waive the parties' responsibilities and obligations provided under the **Agreement**.

PART 7. ACKNOWLEDGEMENT AND CONFIRMATION

Acknowledgement and confirmation by **Hidalgo County Precinct #4** as to content and detail of this **Work Authorization No. 1**.

**HIDALGO COUNTY
COMMISSIONER PRECINCT #4**

PART 8. ACCEPTANCE AND APPROVAL

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on _____ as indicated below and effective as of ___ day of _____, 2019.

**THE ENGINEER:
MILLENNIUM ENGINEERING
GROUP, INC.**

**THE OWNER:
HIDALGO COUNTY**

By: _____
Andres Palma, P.E., Office Manager

By: _____
Richard Cortez, County Judge

ATTEST:

Arturo Guajardo, Jr., County Clerk

LIST OF ATTACHMENTS

- EXHIBIT "A" - Service to be Provided by the Owner
- EXHIBIT "B" - Services to be Provided by the Engineer
- EXHIBIT "D" - Cost Proposal

EXHIBIT A

-Scope of Services to be provided by the Owner

The following provides an outline of the services to be provided by the Owner in the development of Projects (as defined and more particularly identified in Exhibit "A" attached to this Agreement).

General:

The Owner will provide to the Engineer the following:

- 1) Provide the authorization to proceed with services.
- 2) Payment for work performed by the Engineer and accepted by the Owner in accordance with Article 3 of this Agreement.
- 3) Assistance to the Engineer, as necessary, to obtain the required data and information from other local, regional, State and Federal agencies the Engineer cannot easily obtain.
- 4) Provide any available relevant data the Owner may have on file concerning the projects.
- 5) Provide timely review and decisions in response to the Engineer's request for information and/or required submittals and deliverables, in order for the Engineer to maintain the agreed upon work schedule prepared in accordance with Exhibit "A" attached to this Agreement.
- 6) Attend and participate in progress meetings as required and as coordinated and conducted by Engineer.
- 7) Provide the authorization to proceed with services on work authorization.

Exhibit “B”
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

CONSTRUCTION MANAGEMENT SERVICES:

The Engineer will provide Construction Engineering, Construction Inspection/Record Keeping, and Construction Materials Testing services for and during the construction of the PROJECT, or portions of the PROJECT, approved by the COUNTY. Specific services for CONSTRUCTION MANAGEMENT AND SUPPORT by the ENGINEER will include the following:

CONSTRUCTION CONTRACT ADMINISTRATION

- 1) In general, the ENGINEER will provide the management and engineering support in accordance with TxDOT’s LGPP Manual required for consultation and advisement to the COUNTY, and act as the COUNTY’s representative as provided in the General Condition of the Construction Contract.
- 2) The ENGINEER will coordinate and conduct both a “Pre-Coordination Meeting” and a “Pre-Construction Conference” as required by the LGPP.
- 3) The ENGINEER will work with the COUNTY RPIC to develop and issue a Notice to Proceed (NTP) to the Contractor.
- 4) The ENGINEER will coordinate with the Design Engineer of Record (DEOR) and will use his best efforts to protect the COUNTY against defects and deficiencies in the work of the Contractor. The ENGINEER will promptly notify the COUNTY of any such defect or deficiency, and take all steps possible to require the Contractor to correct the defect or deficiency.
- 5) The ENGINEER will review the contractor’s DBE Program and EEO Plan for compliance throughout the project.
- 6) The ENGINEER will ensure that all eligible expenditures are appropriately allocated with regards to the Federal Monies identified on the AFA, and inform the County RPIC of any potential exposure.
- 7) The ENGINEER will work with the County RPIC to develop a Certificate of Substantial Completion at the appropriate time.
- 8) The ENGINEER will develop as built plans identifying and field and change order modifications done during the project. When applicable the ENGINEER will work with the DEOR to prepare the engineering data, including plan sheet drawings, specifications, and estimates, for the preparation of construction contract change orders, which may be required due to actual field conditions encountered or new requirements directed by the COUNTY.
- 9) The ENGINEER will provide the County RPIC a Certification that all work performed on the project met and/or exceeded the project specifications.

Exhibit “B”
SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER

CONSTRUCTION MANAGEMENT AND INSPECTION

CONSTRUCTION MANAGEMENT (During Construction)

- 1) The ENGINEER will conduct monthly meetings with COUNTY RPIC and Contractor throughout the construction duration of the project.
- 2) The ENGINEER will assist the COUNTY RPIC with the implementation of the adopted Quality Assurance Program (QAP)
- 3) The ENGINEER will conduct team field visits with the COUNTY RPIC, Design Engineer, TxDOT, City of Edinburg, and FHWA representatives throughout the duration of the project (Estimated at 120 working days)
- 4) The ENGINEER will review quantities as submitted by the Contractor and will coordinate with the COUNTY RPIC for the preparation of the monthly and final estimates for payment to the Contractor.
- 5) The ENGINEER will coordinate with the DEOR to obtain concurrence on any suggestions or RFI's made by the Contractor to modify the plans and/or contract documents.
- 6) The ENGINEER will coordinate with COUNTY RPIC, Design Engineer, TxDOT/FHWA Representatives, and City of Edinburg Personnel to participate in all Project Related Stakeholder Meetings, Construction Status Meetings, and Final Inspection
- 7) The ENGINEER will coordinate with the DEOR and TxDOT to obtain approval on any and all Change Orders.
- 8) The Engineer will confirm TxDOT/FHWA Participation and Eligibility on Change Orders as well as Time Extensions prior to executing them for the project.

CONSTRUCTION INSPECTION

- 1) The ENGINEER will Project Site Inspection of the authorized construction contract as follows:
 - a) The ENGINEER will provide visits by a Senior Construction Engineer or a competent representative of the ENGINEER to the site of construction for the purpose of monitoring the Contractor's progress and conformance to the construction contract plans and specifications.
 - b) The Engineer will provide a Construction Manager to coordinate with the public and adjacent property owners on construction inconveniences.
 - c) The ENGINEER will furnish the services of a Construction Superintendent and/or Construction Inspector(s) for approximately half day on-site inspection services.

- a. The Engineer will provide construction oversight to monitor/inspect the Contractors daily progress and conformance to PS&E specifications.
- b. The Engineer will provide an Environmental Specialist to inspect SW3P BMP's, as well as compliance with the requirements of the EPIC sheets.
- c. The Engineer will maintain job safety measured and implement OSHA requirements including day/night inspection of barricades
- d. The Engineer will develop and oversee completion of a "Project Punch List" with the COUNTY RPIC and Contractor's representative.

CONSTRUCTION MANAGEMENT (Post Construction)

- 1) The ENGINEER will prepare a Final Estimate for Project Close-Out and Release Retainage.
- 2) The ENGINEER will provide all Close-Out Documents to the COUNTY RPIC.
- 3) The ENGINEER will coordinate "Final Acceptance" of the project.

MISCELLANEOUS TECHNICAL ACTIVITIES

- 1) The ENGINEER will coordinate with the Design Engineer of Record to review and check all shop or working drawings furnished by the Contractor.
- 2) The ENGINEER will track Utility Relocations and develop red-lined hard copy as built drawings to depict the location of the utility and the work as actually constructed. The COUNTY will be furnished one (1) sets of drawings.
- 3) The ENGINEER will provide inspection of all materials and equipment furnished/used by the Contractor as follows:
 - a) Review and record all laboratory, shop and mill tests of materials and equipment for compliance with the construction contract specifications.
 - b) Observe and/or perform Project record testing and/or independent assurance testing as outlines in the construction contract specifications.

CONSTRUCTION MATERIALS TESTING:

The ENGINEER will provide the COUNTY with construction material testing services for the Project. The services to be provided include sampling and testing of all construction materials as required by the project plans and specifications. All sampling frequencies and test procedures will be performed in general accordance with the Texas Department of Transportation TEX methods (or ASTM methods as required) as outlined in the Guide Schedule for Sampling and Testing (11/07). The construction materials testing includes, but is not limited to the following:

- 1) Sampling and laboratory testing of soils and base materials proposed for use in the construction of the Project to determine compliance of these materials with project plans and specifications.
- 2) Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.
- 3) Field sampling and testing of fresh concrete, and laboratory testing of hardened concrete to determine compliance with project plans and specifications.
- 4) Field compaction testing for asphalt pavement (HMAC) to ensure proper compaction during lay down operations.
- 5) Field inspection, sampling, and laboratory testing of asphalt materials to determine their material properties and their compliance with project plans and specifications.
- 6) The ENGINEER will be responsible for concrete batching as well as the asphalt pavement testing at the plants to insure delivery of acceptable material to the job site.
- 7) Any additional laboratory testing as required/requested by the COUNTY and the project plans and specifications.
- 8) Providing accurate and timely report to the COUNTY RPIC and all/other recipients as designated by the COUNTY RPIC.
- 9) The ENGINEER will verify the concrete and asphalt design to assure it is in accordance with TxDOT specifications to be developed by the Contractor.

MISCELLANEOUS/OTHER:

- (1) Act for COUNTY in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with the standards of the profession.
- (2) Perform all technical services under the general direction of a Licensed Professional Laboratory in the State of Texas and in substantial accordance with the basic requirements of the appropriate Standards of the American Society of Testing and Materials, where applicable, or other standards designated by County.
- (3) Employ testing machines which have been calibrated within a period not exceeding twelve (12) months from the time of use by device of accuracy traceable to the National Institute of Standards and Technology (NIST) of the United States Department of Commerce, and, upon request, submit to the OWNER or its authorized representative documentation of such calibration.
- (4) Promptly submit formal construction materials testing reports for all tests, observations, and services performed indicating where applicable, compliance with specifications or other documents. Such reports shall be completed and factual, citing the tests performed, methods employed, values obtained, parts of the structure and location at which the tests were made.
- (5) Retain all pertinent records relating to the services performed for a period of five (5) years following submission of all reports, during which period the records will be made available to the Owner within a reasonable time.

EXHIBIT D
-Cost Proposal

Exhibit D
 North Alamo Rd Realignment Project
 Construction Phase Services (FC300)
 Work Authorization No. 1



	Hidalgo County Precinct No. 4 - Construction Management Services	Project Manager	Project Engineer	Construction Inspector	Construction Record Keeper	Admin/ Clerical	Total Hours	Total Line Item Cost
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TASKS

Construction Contract Administration FC300 (320)

1	Prepare/Coordinate & Conduct a Project Coordination Meeting with the County, RPIC, TxDOT Project Mgr., Design Engineer & other Hidalgo Co. and TxDOT Project Staff.	3	0	0	8	2	13	\$ 1,306.00
2	Prepare/coordinate & Conduct a Project Pre-Construction Meeting with the County RPIC, TxDOT Project Manager, Design Engineer and the Construction Contractor.	3	0	0	2	1	6	\$ 763.00
3	Coordinate w/ County RPIC and Develop/Issue a Notice to Proceed to the Contractor.	4	0	0	2	1	7	\$ 943.00
4	Review of Contractor's DBE and EEO Programs for Compliance	2	0	1	8	2	13	\$ 1,206.00
5	Monthly Monitoring of Construction Expenditures vs. Available Funds in the AFA	4	0	4	8	2	18	\$ 1,806.00
6	Issue of Certificate of Submittal Completion at the appropriate time.	0	2	0	0	0	2	\$ 330.00
7	Provide red-lined hard copy of As-Built Plans and a Certification to the County RPIC and TxDOT that this project was constructed as designed & compliance w/ release of retainage.	0	2	8	0	0	10	\$ 970.00
8	Coordinate with the County to provide the County RPIC a certification that all work performed on the project met and/or exceeded the project specifications.	0	2	4	0	0	6	\$ 650.00
Subtotal Labor Hours		16	6	17	28	8	75	\$ 7,974.00

Construction Management During Construction FC300 (320)

1	Conduct monthly meetings with the County RPIC & Contractor throughout construction duration for adherence to the schedule (as needed)	6	0	0	0	2	8	\$ 1,206.00
2	Assist the County RPIC with implementation of the Adopted Quality Assurance Program (QAP).	0	0	4	0	0	4	\$ 320.00
3	Coordinate two field visits w/ County RPIC, Design Engineer, TxDOT, City of Edinburg, and FHWA representatives throughout duration of the project.	4	0	3	0	1	8	\$ 1,023.00
4	Prepare a Contractor's Progress Payment Estimate on a monthly basis.	6	0	0	2	3	11	\$ 1,429.00
5	Review & processing of Contractor Invoices (Approval/Modification/Rejection)	0	0	16	0	0	16	\$ 1,280.00
6	Obtain Design Engineer's Concurrence with any suggestions or Request for Information (RFIs) made by the contractor to change or modify any requirements of the plans or contract documents.	1	0	0	0	1	2	\$ 243.00
7	Coordinate with the Design Engineer on change orders and obtain TxDOT approval.	0	0	4	0	0	4	\$ 320.00
8	Confirm TxDOT/FHWA participation & eligibility on change orders as well as time extensions.	0	1	0	0	0	1	\$ 165.00
Subtotal Labor Hours		17	1	27	2	7	54	\$ 5,986.00

Exhibit D
North Alamo Rd Realignment Project
Construction Phase Services (FC300)
Work Authorization No. 1

Construction Management of Miscellaneous Technical Activities FC300 (320)

1	Coordination w/ Design Engineer of Record for shop drawing review as appropriate.	2	0	0	0	1	3	\$ 423.00
2	Coordination w/ County RPIC and City of Edinburg personnel, utility companies, Hidalgo County Drainage District and irrigation district relocations as needed.	0	2	2	0	0	4	\$ 490.00
3	Track utility relocations and plot final facility locations on the final As-Built Plans (if any)	0	0	2	0	0	2	\$ 160.00
Subtotal Labor Hours		2	2	4	0	1	9	\$ 1,073.00

Construction Inspection During Construction FC300 (320)

1	On-site inspection during construction activities & documentation in project diary.	0		420	0	0	420	\$ 33,600.00
2	Coordination with the public and adjacent property owners on construction inconveniences.	0	1	4	0	0	5	\$ 485.00
3	Inspect SW3P BMP's as well as compliance with requirements of EPIC sheets.	0	1	8	0	0	9	\$ 805.00
4	Produce daily pay sheets & assure compliance of materials delivered to the job site meet specifications (including Buy America Act).	0	1	10	0	0	11	\$ 965.00
5	Maintain job safety measures & implement OSHA requirements including day/night inspection of barricades.	0	1	8	0	0	9	\$ 805.00
6	Develop and oversee completion of a "Project Punch List" with the County RPIC & constructor's representative.	0	2	8	0	0	10	\$ 970.00
Subtotal Labor Hours		0	6	458	0	0	464	\$ 37,630.00

Construction Management Post Construction FC300 (352)

1	Prepare a Final Estimate for project close-out & release of retainage.	4	0	4	2	4	14	\$ 1,452.00
2	Provide all close-out documents to County RPIC.	0	2	0	0	0	2	\$ 330.00
3	Coordinate Final Acceptance of project.	2	0	0	2	4	8	\$ 772.00
Subtotal Labor Hours		6	2	4	4	8	24	\$ 2,554.00

Total Labor Hours

41 17 510 34 24 626

Contract Rate FY2019

\$ 180.00 \$ 165.00 \$ 80.00 \$ 80.00 \$ 63.00

Total Costs

\$ 7,380.00 \$ 2,805.00 \$ 40,800.00 \$ 2,720.00 \$ 1,512.00 \$ 55,217.00

Direct Expenses

Vehicle Mileage @ \$0.54/mile	2300	miles	\$ 1,242.00
Vehicle Trip Charge (@ \$40/Day)	120	days	\$ 4,800.00
Technology (Computer, Tablet, Cellular, Data)(at \$20/day)	120	days	\$ 2,400.00
CMT FC300 (330) (See Detailed Breakdown On Pages 3 of 6 to 6 of 6)	1	LS	\$ 43,753.25

Total Direct Expenses

Total Cost

\$ 107,412.25

EXHIBIT D
CONSTRUCTION MANAGEMENT FC300 (330)
ESTIMATED MAN-HOURS AND TEST BREAKDOWN



Hidalgo County Pct. 4 - North Alamo Realignment Project - CSJ: 0921-02-311
Construction Materials Testing



Embankment (Test All Fill Material Including Cut From Job) (ITEM 132)

Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.
Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Liquid Limit	Tex-104-E	Pl>15 ~ Every 5,000 CY	Included with PI	Each		\$80.00	
Plasticity Index	Tex-106-E	Pl>15 ~ Every 5,000 CY		Each	1	\$80.00	\$80.00
Gradation	Tex-110-E	Every 10,000 CY		Each	1	\$85.00	\$85.00
Moisture/Density	Tex-114-E	One per Each Material		Each	1	\$225.00	\$225.00
In-Place Density Reports	Tex-115-E	Every 5,000 CY or 600 Linear Feet (Min. 1 per Lift)	Every 600 Linear Feet (Min. 1 per Lift)	Each	3	\$28.00	\$84.00
Tech Time (Soils)			LL/PI, Grad, MD, FD	Each	3	\$30.00	\$90.00
# of Trips (Tech)			4 hrs - PI, Gr, MD, 4 hrs - FD	Hour	8	\$75.00	\$600.00
**Admin/Clerical			4 Trips (20 Miles RT)	Trip	3	\$40.00	\$120.00
				Hour	1	\$63.00	\$63.00
						Item Subtotal	\$1,347.00

Subgrade (Untreated) (ITEM 260)

Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Organic Content	Tex-148-E	Each 500 LF		Each	5	\$120.00	\$600.00
Sulfate Content	Tex-145-E	Each 500 LF		Each	5	\$80.00	\$400.00
Reports			OC & SC	Each	10	\$30.00	\$300.00
Tech Time (Soils)			4 hrs - OC/SC	Hour	8	\$75.00	\$600.00
# of Trips (Tech)			2 Trips (20 Miles RT)	Trip	2	\$40.00	\$80.00
**Admin/Clerical				Hour	2.50	\$63.00	\$157.50
						Item Subtotal	\$2,137.50

Lime (ITEM 260)

Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Compliance of Lime (DMS 6350)	Tex-600-I	1 per 200 tons		Each	1	\$300.00	\$300.00
						Item Subtotal	\$300.00

Subgrade (Untreated) (ITEM 260)

Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.
Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Pulverization Gradation	Tex-101-E (Part III)	Each 4,500 CY		Each	1	\$100.00	\$100.00
Liquid Limit	Tex-104-E		Included with PI	Each		\$80.00	
Plasticity Index	Tex-106-E	Each 5,000 CY		Each	1	\$80.00	\$80.00
Gradation	Tex-110-E	Each 5,000 CY		Each	1	\$85.00	\$85.00
Moisture/Density	Tex-121-E (Part II)	Every 20,000 CY		Each	1	\$225.00	\$225.00
In-Place Density Reports	Tex-115-E	Every 3,000 CY or 300 Linear Feet	Every 300 Linear Feet (Min. 1 per Lift)	Each	9	\$28.00	\$252.00
Tech Time (Soils)			LL/PI, Grad, MD, FD	Each	6	\$30.00	\$180.00
# of Trips (Tech)			4 hrs - PI, Gr, MD, 4 hrs - FD	Hour	20	\$75.00	\$1,500.00
**Admin/Clerical			6 Trips (20 Miles RT)	Trip	5	\$40.00	\$200.00
				Hour	1.50	\$63.00	\$94.50
						Item Subtotal	\$2,716.50

Flexible Base (Untreated) - Stockpile Testing (ITEM 247)

Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Liquid Limit	Tex-104-E		Included with PI	Each		\$80.00	
Plasticity Index	Tex-106-E	Each 5,000 CY		Each	1	\$80.00	\$80.00
Gradation	Tex-110-E	Each 5,000 CY		Each	1	\$85.00	\$85.00
Moisture/Density	Tex-113-E	Every 20,000 CY		Each	1	\$225.00	\$225.00
Wet Ball Mill	Tex-116-E	Every 20,000 CY		Each	1	\$240.00	\$240.00
Triaxial	Tex-117-E	Every 20,000 CY		Each	1	\$2,200.00	\$2,200.00
Reports			LL/PI, Grad, MD, FD	Each	2	\$30.00	\$60.00
Tech Time (Soils)			4 hrs - PI, Gr, MD, 4 hrs - FD	Hour	4	\$75.00	\$300.00
# of Trips (Tech)			1 Trip (20 Miles RT)	Trip	1	\$40.00	\$40.00
**Admin/Clerical				Hour	0.50	\$63.00	\$31.50
Item Subtotal							\$3,261.50

Flexible Base (Lime Treated) (ITEM 247)

Sampling and laboratory testing of soils and base materials proposed for use in the construction of Project (Roads/Bridges/Misc.) to determine compliance of these materials with project plans and specifications.
Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Pulverization Gradation	Tex-101-E (Part III)	Each 4,500 CY		Each	1	\$100.00	\$100.00
Liquid Limit	Tex-104-E		Included with PI	Each			
Plasticity Index	Tex-106-E	Each 5,000 CY		Each	1	\$80.00	\$80.00
Gradation	Tex-110-E	Each 5,000 CY		Each	1	\$85.00	\$85.00
Moisture/Density	Tex-121-E (Part II)	Every 20,000 CY		Each	1	\$225.00	\$225.00
In-Place Density	Tex-115-E	Every 3,000 CY or 300 Linear Feet	Every 300 Linear Feet (Min. 1 per Lift)	Each	9	\$28.00	\$252.00
Reports			LL/PI, Grad, MD, FD	Each	4	\$30.00	\$120.00
Tech Time (Soils)			4 hrs - PI, Gr, MD, 4 hrs - FD	Hour	24	\$75.00	\$1,800.00
# of Trips (Tech)			6 Trips (20 Miles RT)	Trip	6	\$40.00	\$240.00
**Admin/Clerical				Hour	1.50	\$63.00	\$94.50
Item Subtotal							\$2,996.50

Asphalt Concrete Pavement (ITEM 2341 - HMA-QC/QA)

Field compaction testing of asphalt to ensure proper compaction during lay down operations.
Field sampling and laboratory testing of asphalt materials to determine their material properties and their compliance with project plans and specifications.

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Coarse Aggregate			Stockpile				
L.A. Abrasion	Tex-410-A	1 Per Project Per Source Per Design	if BRSQC meets Project Spec ~ Remove	Each	0	\$500.00	\$0.00
Soundness	Tex-411-A	1 Per Project Per Source Per Design	if BRSQC meets Project Spec ~ Remove	Each	0	\$500.00	\$0.00
Gradation	Tex-200-F	1 Per Project Per Source Per Design		Each	1	\$85.00	\$85.00
MicroDeval	Tex-461-A	1 Per every 12 Sublots	May be Eliminated based on Test History	Each	0	\$500.00	\$0.00
Flat & Elongated Particles	Tex-280-F	1 Per Project Per Source Per Design		Each	1	\$60.00	\$60.00
Coarse Aggregate Angularity	Tex-460-A (Part I)	1 Per Project Per Source Per Design		Each	1	\$60.00	\$60.00
Deleterious Material & Decant	Tex-217-F	1 Per Project Per Source Per Design		Each	1	\$50.00	\$50.00
Fine Aggregate			Stockpile				
Bar Linear Shrinkage	Tex-107-E	1 Per Project Per Source Per Design		Each	1	\$45.00	\$45.00
Organic Impurities	Tex-408-A	1 Per Project Per Source Per Design		Each	1	\$50.00	\$50.00
Gradation	Tex-200-F	1 Per Project Per Source Per Design		Each	1	\$85.00	\$85.00
Mineral Filler			Bin or Silo				
Bar Linear Shrinkage	Tex-107-E	1 Per Project Per Source Per Design	Assume No Filler	Each	0	\$45.00	\$0.00
Gradation	Tex-200-F	1 Per Project Per Source Per Design	Assume No Filler	Each	0	\$85.00	\$0.00
Combined Aggr.			Stockpile or Feeder Belt				
Sand Equivalent	Tex-203-F	1 Per Project Per Source Per Design		Each	1	\$75.00	\$75.00
Complete Mix			Truck Sample				
Asphalt Content (%)	Tex-236-F	1 Per Lot Per Design		Each	3	\$95.00	\$285.00
Voids in Mineral Aggr. (VMA)	Tex-204-F	1 Per Sublot Per Design	with 227-F Rice Gravity	Each	12	\$90.00	\$1,080.00
Gradation	Tex-236-F	Min. 1 Per 12 Sublots Per Design		Each	1	\$85.00	\$85.00
Boil Test	Tex-530-C	1 Per Project Per Source Per Design	Waived by Engineer	Each	0	\$90.00	\$0.00
Indirect Tensile-Dry	Tex-226-F	1 Per Project Per Source Per Design	Waived by Engineer	Each	0	\$62.50	\$0.00
Moisture Content	Tex-212-F (Part II)	1 Per Project Per Source Per Design		Each	1	\$18.00	\$18.00

Lab Molded Density		Tex-207-F	1 Per Sublot Per Design		Each	12	\$90.00	\$1,080.00
Hamburg Wheel Tracker		Tex-242-F	1 Per Project Per Source Per Design	Make Contractor Perform Test	Each	0	\$460.00	\$0.00
Roadway				At Site	Each			
Field Coring			2 Cores Per Sublot Per Design		Each	12	\$235.00	\$2,820.00
In-Place Air Voids		Tex-207-F	2 Cores Per Sublot Per Design		Each	12	\$25.00	\$300.00
Segregation Profile		Tex-207-F (Part V)	1 Per Project Per Source Per Design		Each	1	\$250.00	\$250.00
Joint Density		Tex-207-F (Part VII)	1 Per Project Per Source Per Design		Each	1	\$315.00	\$315.00
Tack Coat Adhesion		Tex-243-F	1 Per Project Per Source Per Design	Waived by Engineer	Each	0	\$100.00	\$0.00
Thermal Profile		Tex-244-F	1 Per Project Per Source Per Design		Each	1	\$200.00	\$200.00
Ride Quality		Tex-1001-S	Engineer may verify Contractor's results	Make Contractor Perform Test	Each			\$0.00
Reports					Each	12	\$30.00	\$360.00
Tech Time (Agg)				8 hours per 1 days (trips/test - CA/FA/Co)	Hour	8	\$75.00	\$600.00
Tech Time (Asph)				12 hours per 3 days	Hour	36	\$75.00	\$2,700.00
# of Trips (Tech)				4 Trips (20 Miles RT)	Trip	4	\$40.00	\$160.00
**Admin/Clerical					Hour	3	\$63.00	\$189.00
Item Subtotal								\$10,952.00

Hydraulic Cement Concrete ~ Traffic Signals & Misc. (Class A/C)

Field sampling and testing of fresh concrete and laboratory testing of hardened concrete to determine compliance with project plans and specifications.
Concrete batching at the plants to insure delivery of acceptable material to the job site (as required).

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Coarse Aggregate			QA Test. (QC by Source)				
L.A. Abrasion	Tex-410-A	Two Each Source	if CRSQC meets Project Spec ~ Remove	Each	0	\$500.00	\$0.00
Soundness	Tex-411-A	Two Each Source	if CRSQC meets Project Spec ~ Remove	Each	0	\$500.00	\$0.00
Sieve Analysis	Tex-401-A	Each 1,000 CY (ea source)	5 Sieve	Each	1	\$85.00	\$85.00
Decantation	Tex-406-A	Each 20,000 CY (or source)		Each	1	\$50.00	\$50.00
Deleterious Material	Tex-413-A	Each 20,000 CY (or source)		Each	1	\$50.00	\$50.00
Fine Aggregate			QA Test. (QC by Source)				
Sand Equivalent	Tex-203-F	Each 1,000 CY (ea source)		Each	1	\$75.00	\$75.00
Organic Impurities	Tex-408-A	1 Per Project Per Source		Each	1	\$50.00	\$50.00
Sieve Analysis	Tex-401-A	Each 1,000 CY (ea source)		Each	1	\$85.00	\$85.00
Fineness Mod.	Tex-402-A	Each 1,000 CY (ea source)		Each	1	\$15.00	\$15.00
Deleterious Material	Tex-413-A	Each 20,000 CY (or source)		Each	1	\$50.00	\$50.00
Acid Insoluble	Tex-612-J	Two Each Source	if CRSQC meets Project Spec ~ Remove	Each	0	\$90.00	\$0.00
Mineral Filler			QA Test. (QC by Source)				
Sieve Analysis	Tex-401-A	Two Each Source	If No Mineral Filler utilized in Mix~Remove	Each	0	\$85.00	\$0.00
Concrete							
*Strength	Tex-418-A	Each 60 CY (2 Sets = 4 Cyl.)	use 2 sets per Pour (2 Pours)	Each	8	\$31.00	\$248.00
Slump	Tex-415-A	One per 2 Sets		Each	2	\$20.00	\$40.00
Entrained Air	Tex-416-A	One per 2 Sets		Each	2	\$25.00	\$50.00
Temperature	Tex-422-A	One per 2 Sets		Each	2	\$5.00	\$10.00
Reports			CA, FA, MF, Conc.	Each	7	\$30.00	\$210.00
Tech Time (Agg)			8 hours per 1 days (trips/test - CA/FA/Co)	Hour	8	\$75.00	\$600.00
Tech Time (Conc)			4 hrs per pour - 2 hours per pickup	Hour	12	\$75.00	\$900.00
# of Trips (Tech)			4 Trips (20 Miles RT)	Trip	4	\$40.00	\$160.00
**Admin/Clerical				Hour	3	\$63.00	\$189.00
Item Subtotal							\$2,867.00

Batching for Hydraulic Cement Concrete (Class A/C) & Asphalt Concrete Pavement (ACP) Inspection of Batching at Plant (1 Tech per Plant, Reports)

Field sampling and testing of fresh concrete and laboratory testing of hardened concrete to determine compliance with project plans and specifications.
 Concrete batching as well as asphalt testing at the plants to insure delivery of acceptable material to the job site(as required).

Test Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate 2019	Total
Concrete							
Reports				Each	4	\$30.00	\$120.00
Tech Time (Conc)			2 Conc Plant Inspections	Hour	8	\$75.00	\$600.00
# of Trips (Tech)			2 Trips (20 Miles RT)	Trip	2	\$40.00	\$80.00
**Admin/Clerical				Hour	1.00	\$63.00	\$63.00
Hot Mix							
Reports				Each	3	\$30.00	\$90.00
Tech Time (Asph)			12 hours per 3 days	Hour	36	\$75.00	\$2,700.00
# of Trips (Tech)			3 Trips (20 Miles RT)	Trip	3	\$40.00	\$120.00
**Admin/Clerical				Hour	0.75	\$63.00	\$47.25
						Item Subtotal	\$3,820.25

*Concrete Strength testing includes strength testing of cylinder specimens (breaks) as well as preparation, holding, and curing of strength specimen costs
 ~ 1 Set is defined as 2 Cylinders (7-day or 28-day)
 ~ All Structural Concrete requires a minimum 2 Sets per Test Location (4 Cyl.)

**Project Administrative Fee is assessed on a per invoice basis and involves engineering review, evaluation, mangement, and administration

Summary

Sub-Total (CMT Items) =	\$30,398.25
Sr. Eng. Tech. (Coord. w/RPIC/Rpt. Rev.) (15 hrs x 77/Hr.)	\$1,155.00
Project Engineer (QA/QC of CMT) (40 hrs x 165/Hr.)	\$6,600.00
Construction Record Keeper (Coord. w/CEI &CMT Team) (70 hrs x 80/Hr.)	\$5,600.00

Construction Materials Testing Total : \$43,753.25