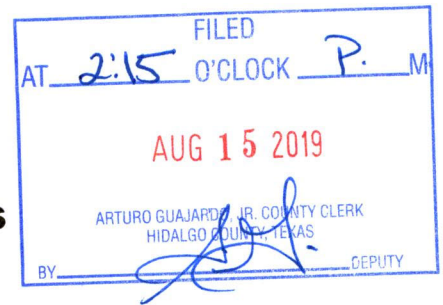


**HIDALGO COUNTY**  
**Professional Engineering Services**  
**Contract # C-19-016-08-13**  
**Work Authorization Form**



**WORK AUTHORIZATION NO. 1**

**THIS WORK AUTHORIZATION** is made pursuant to the terms and conditions of **Article 7** of the Agreement made by and between **HIDALGO COUNTY**, action herein by and through the **Commissioner's Court**, hereinafter called the "**Owner**," and, **B2Z Engineering, LLC**, professional engineers of Mission, Texas, hereinafter called "**Engineer**".

**PART 1. SCOPE OF WORK**

The purpose of this Work Authorization is for the **Engineer** to provide Construction Contract Administration, Construction Management & Inspection, Construction Materials Testing and Miscellaneous Technical Activities needed for the Dicker Road Project.

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 **\$1,165,481.52**. This amount is based upon the costs outlined in the Estimated **Cost Proposal** attached hereto as **EXHIBIT "D" Fee Schedule**.

**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** of the Agreement.

**PART 4. FUNDING**

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

Account No. 9-1315-431-00-122-062-0-721

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 completion of scopes of the work authorization.


**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 No. 2**, Commissioner Eduardo "Eddie" Cantu as to content and detail of this **Work Authorization No. 1**.

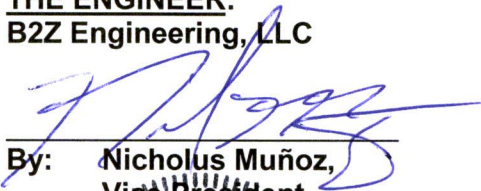
**HIDALGO COUNTY  
COMMISSIONER PRECINCT NO. 2**

BY: 


**PART 8. ACCEPTANCE AND APPROVAL**

This Work Authorization is hereby accepted, approved by Hidalgo County Commissioners' Court on 8-13-19 as indicated below.


**THE ENGINEER:**  
B2Z Engineering, LLC

  
By: **Nicholus Muñoz,**  
**Vice President**

**THE OWNER:**  
HIDALGO COUNTY

  
By: **Richard Cortez,**  
**County Judge**

**ATTEST:**

  
By: **Arturo Guajardo, Jr.,** County Clerk



APPROVED BY  
COMMISSIONERS' COURT  
ON: 8/13/19 

**LIST OF ATTACHMENTS**

- Location Map
- Exhibit A – Services to be Provided by the Owner
- Exhibit B – Services to be Provided by the Engineer
- Exhibit C – Work Schedule
- Exhibit D – Fee Schedule

EXHIBIT "A"  
SCOPE OF SERVICES TO BE PROVIDED BY THE OWNER

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The following provides an outline of the services to be provided by the **Owner** for the proposed Dicker Road Project from SP 115 to FM 2061 in Hidalgo County hereinafter denoted as the **Project**.

**GENERAL:**

The **Owner** will provide to the **Engineer** the following:

- 1) Provide the authorization to proceed with services through coordination with the project **Engineer**.
- 2) Payment for work performed by the **Engineer** and accepted by the **Owner** in accordance with Article 6 of the 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 **Project**.
- 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 "C" attached to this Work Authorization.
- 6) Attend and participate in progress meetings as required and as coordinated and conducted by **Engineer**.

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

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**SECTION 1 - PROJECT DESCRIPTION**

The services designated herein as "Services provided by the ENGINEER" shall include the performance of all engineering services for the following described facility:

COUNTY/CITY: HIDALGO COUNTY

CONTROL: 0921-02-312

PROJECT/DESCRIPTION: Inspection, Material Testing, and Construction Management for the Dicker Road Project

LENGTH: 2.53 Miles (Approx.)

HIGHWAY: Dicker Road

LIMITS: From Spur 115 (23<sup>rd</sup> St.) to FM 2061 (Jackson Rd.)

**EXISTING FACILITY**

**PROJECT CLASSIFICATION**

(Place an "X" in only one Project Classification)

- Surface Treatment
- Overlay
- Rehabilitation Existing Road (Scarify & Reshape)
- Convert Non-Freeway to Freeway
- Widen Freeway
- Widen Non-Freeway
- New Location Toll Freeway
- New Location Non-Freeway
- Interchange (New or Reconstruct)
- Bridge Widening or Rehabilitation
- Bridge Replacement
- Upgrade to Standards - Freeway
- Upgrade to Standards - Non-Freeway
- Miscellaneous Studies (Use Function Code 110 for All Tasks)
- Pedestrian Facility – Hike & Bike Trail

ENGINEER shall mean B2Z Engineering, LLC

STATE shall mean Texas Department of Transportation (TxDOT).

COUNTY shall mean the Hidalgo County.

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

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**SECTION 12 - CONSTRUCTION PHASE SERVICES**  
(Function Code 320)

**CONSTRUCTION MANAGEMENT SERVICES:**

The ENGINEER will provide Construction Engineering, Geotechnical & Construction Material Testing, and Construction Inspection/Record Keeping 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 any 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.

**Construction Management and Inspection:**

**Construction Management (During Construction)**

- 1) The ENGINEER will conduct frequent meetings w/ County RPIC & 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, Cities, and FHWA representatives throughout duration of the project (Estimated at 26months)

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

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- 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 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.
- 6) 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.
- 7) The ENGINEER coordinate with County RPIC, Design Engineer, TxDOT/FHWA Representatives, and City Personnel to participate in all Project Related Stakeholder Meetings, Construction Status Meetings, and Final Inspection
- 8) The ENGINEER will coordinate with the DEOR and TxDOT to obtain approval on any and all Change Orders.
- 9) The ENGINEER will confirm TxDOT/FHWA Participation & Eligibility on Change Orders as well as Time Extensions prior to executing them for the project.

**Construction Inspection**

- 1) The ENGINEER will provide 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 full-time on-site inspection services.
    - a. The ENGINEER will provide construction oversight to monitor/inspect the Contractor's 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 w/ the requirements of the EPIC sheets.
    - c. The ENGINEER will maintain job safety measures 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 & Contractor's Representative.

**Construction Management (Post Construction)**

- 1) The ENGINEER will prepare a Final Estimate for Project Close-Out & Release Retainage.
- 2) The ENGINEER will provide all Close-Out Documents to 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 as built drawings to depict the location of the utility and the work as actually constructed. The COUNTY will be furnished five (5) set of prints.
- 3) The ENGINEER will provide Monthly Reports/Presentations to Hidalgo County Commissioners Court and the HCMPO (as requested)

**EXHIBIT "B"**  
**SCOPE OF SERVICES TO BE PROVIDED BY THE ENGINEER**

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- 4) 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 outlined in the construction contract specifications.

**CONSTRUCTION MATERIAL 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 material testing includes, but is not limited to the following:

- a) 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.
- b) Field density testing of soils and base materials to ensure proper compaction as required by project plans and specifications.
- c) Field sampling and testing of fresh concrete, and laboratory testing of hardened concrete to determine compliance with project plans and specifications.
- d) Field compaction testing of asphalt to ensure proper compaction during lay down operations.
- e) Field inspection, sampling and laboratory testing of asphalt materials to determine their material properties and their compliance with project plans and specifications.
- f) The ENGINEER will be responsible for concrete batching as well as the asphalt testing at the plants to insure delivery of acceptable material to the job site.
- g) Any additional laboratory testing as required/requested by the COUNTY and the project plans and specifications.
- h) Providing accurate and timely reports to the COUNTY RPIC and all/other recipients as designated by the COUNTY RPIC.
- i) The ENGINEER will verify the concrete and asphalt designs to assure it is in accordance with TxDOT specifications to be developed by the contractor.



**Exhibit D**  
**Dicker Road Project**  
**Construction Phase Services (FC320)**  
**Work Authorization No. 1**

TASKS	MANHOURS										Total Line Item Cost
	Sr. Construction Engineer/Manager	Construction Manager (PE/PMP)	Environmental Specialist	Construction Superintendent	Construction Inspector	Construction Record Keeper	CADD Operator	Admin/Clerical	Total Hours		
<b>Hidalgo County Precinct No. 2 Construction Management Services (FC320)</b>											
<b>Construction Management (During Construction)</b>											
1	8	16		4		8			36		\$5,515.76
2	4	4		8		4		8	28		\$3,304.20
3	8	8		4		4		8	32		\$4,279.88
4	2	4					4	4	10		\$1,352.90
5	60	72		32			16	16	180		\$29,191.64
6	24	14		16		80		8	142		\$16,033.70
7	24	16		8		8		4	60		\$9,288.32
8	4	4		8		30		4	50		\$5,158.10
9	16			16		8		92	132		\$11,929.44
10	8	4		4		8		8	32		\$3,889.64
11	8	24					24		56		\$7,362.88
	166	166	0	100	0	150		84	758		\$97,306.46
<b>Construction Management (During Construction)</b>											
1	86	16		40		24		8	174		\$26,499.06
2	24							8	32		\$5,047.44
3	16			8					24		\$4,006.72
4	12	8		24		80		40	164		\$15,766.84
5	10	8		24		64		20	126		\$12,787.82
6	40			16		8		18	82		\$11,369.68
7	40	86		64				18	208		\$32,007.86
8	48			16			46	10	120		\$14,823.72
9	16			8				4	28		\$4,266.88
	292	118	0	200	8	168		126	958		\$126,576.02

Hidalgo County Precinct No. 2 Construction Management Services (FC320)		MANHOURS										Total Line Item Cost	
TASKS		Sr. Construction Engineer/Manager	Construction Manager (PE/PMP)	Environmental Specialist	Construction Superintendent	Construction Inspector	Admin/Clerical	CADD Operator	Total Hours				
<b>Construction Inspection</b>													
1	On-Site Inspection During Construction Activities & Documentation in Project Diary				720	4048			420			5188	\$465,426.68
2	Coordination with the Public and Adjacent Property Owners on Construction Inconveniences	8	16		60							84	\$1,785.76
3	Inspect SWAP BMP's, as well as Compliance with Requirements of EPIC Sheets			64	16							80	\$8,637.76
4	Verify Daily Pay Sheets & Assure Compliance of Materials Delivered to the Job Site Meet Specifications (Including Buy America Act)	32						224				236	\$24,249.60
5	Maintain Job Safety Measures & Implement OSHA Requirements Including Day/Night Inspection of Barricades				48				16			72	\$7,753.12
6	Develop and Oversee Completion of a "Project Punch List" with the County RPIC & Contractor's Representative	4	8		20				4			48	\$5,892.96
	<b>Subtotal Labor Hours</b>	44	24	64	864	4048		0	12			5728	\$523,745.88
<b>Construction Management (Post Construction)</b>													
1	Prepare a Final Estimate for Project Close-Out & Release of Retainage	4	4		16				8			40	\$4,618.08
2	Prepare and Provide all Close-Out Documents to County RPIC	4			4				2			14	\$1,704.16
3	Coordinate Final Acceptance of Project	8	4		4				4			28	\$3,564.40
	<b>Subtotal Labor Hours</b>	16	8	0	24	0		0	18			82	\$9,886.64
<b>Construction Management (Pre Construction)</b>													
1	Coordination w/ Engineer of Record for Shop Drawing Review as Appropriate	24	16						16			72	\$9,730.64
2	Coordination w/ County RPIC and City of Hidalgo/Pharr/McAllen Personnel on Relocation of Utilities in Conflict	54	8	16	80				8			166	\$23,688.82
3	Coordination w/ County RPIC, Project Contractor & City of McAllen Personnel on Negotiation of Waterline Change Order along Dicker Rd	8	24		8				4			44	\$7,050.72
4	Track Utility Relocations and Plot Final Facility Locations on the Final As-Built Plans (if any)	16			16				8			80	\$8,247.68
5	Monthly Reporting/Presentation to Hidalgo County Commissioner Pet#2 & HCMPO (as needed)	40	40						16			96	\$15,740.64
	<b>Subtotal Labor Hours</b>	142	88	16	104	0		40	52			458	\$64,458.50
<b>Total Labor Hours</b>		660	404	80	1292	4056		178	292			7984	7984
Hourly Base Rates		\$ 58.00	\$ 55.00	\$ 32.00	\$ 38.00	\$ 26.00	\$ 21.00	\$ 20.00	\$ 25.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00
Contract Rate FY2019		\$ 188.63	\$ 178.87	\$ 104.07	\$ 123.58	\$ 84.56	\$ 68.30	\$ 65.04	\$ 81.31	\$ 68.30	\$ 65.04	\$ 65.04	\$ 65.04
<b>Total Costs</b>		\$ 124,495.80	\$ 72,263.48	\$ 8,225.60	\$ 159,665.36	\$ 342,975.36	\$ 12,157.40	\$ 18,991.68	\$ 83,098.82	\$ 12,157.40	\$ 18,991.68	\$ 18,991.68	\$ 882,1973.50

Direct Expenses      Mileage: \$0.585/mile      \$ 10,569.42  
 CMT (See Detailed Breakdown on Page 3 of 7 ~ 7 of 7)      \$ 332,938.60  
**Total Direct Expenses**      \$ 343,508.02

**\$1,165,481.52**

**BZZ Engineering Total Cost**

**EXHIBIT D**  
**ESTIMATED MAN-HOURS AND TEST BREAKDOWN**

**Hidalgo County Proj. 2 - Dioken Road**  
**Construction Materials Testing**

**Item Subtotal (Test, All Field Materials) including C.M. From Job (UTEM132)**

- 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.

TXDOT Test	TXDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Tex-104-E	PI>15 ~ Every 5,000 CY	included with PI	Each		\$45.00	\$0.00
Tex-106-E	PI>15 ~ Every 5,000 CY		Each	21	\$45.00	\$945.00
Tex-110-E	Every 10,000 CY		Each	13	\$90.00	\$1,170.00
Tex-114-E	One per Each Material		Each	3	\$225.00	\$675.00
Tex-115-E	Every 5,000 CY or 6,000 Linear Feet (Min. 1 per Lift)	Inc. to 10 - 2 per Leg (Job)	Each	30	\$28.00	\$840.00
		L/L/PI, Grad, MD, FD	Each	67	\$25.00	\$1,675.00
		4 hrs - PI, Gr, MD, 2 hrs - FD	Hour-	156	\$77.28	\$12,055.68
		20 Trips (40 Miles RT)	Mile	2040	\$0.545	\$1,111.80
**Admin/Clerical			Hour	12	\$64.40	\$772.80
			Item Subtotal			\$19,245.28

**Subtotal (Unrestored) (UTEM160)**

- 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.

TXDOT Test	TXDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Tex-148-E	Each 500 LF or 5000 CY		Each	7	\$1,500.00	\$10,500.00
Tex-145-E	Each 500 LF or 5000 CY		Each	7	\$95.00	\$665.00
		OC & SC	Each	27	\$25.00	\$675.00
		1 hrs - OC/SC	Hour	40	\$77.28	\$3,091.20
		9 Trips (40 Miles RT)	Mile	360	\$0.585	\$210.60
**Admin/Clerical			Hour	7	\$64.40	\$450.80
			Item Subtotal			\$15,592.60

**Lime (UTEM1760)**

- 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.

TXDOT Test	TXDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Tex-600-J	1 per 200 Tons		Each	19	\$400.00	\$7,600.00
			Item Subtotal			\$7,600.00

**Subgrade (Time Treated) (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 proposer compaction as required by project plans and specifications.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Pulverization Gradation	Tex-101-E (Part III)	Each 4,500 CY	Inc. to 5 - 8 per Leg (Job)	Each	13	\$100.00	\$1,300.00
Liquid Limit	Tex-104-E		Included with PI	Each		\$45.00	\$0.00
Plasticity Index	Tex-106-E	Each 5,000 CY	Inc. to 5 - 8 per Leg (Job)	Each	13	\$45.00	\$585.00
Gradation	Tex-110-E	Each 5,000 CY	Inc. to 5 - 8 per Leg (Job)	Each	13	\$90.00	\$1,170.00
Moisture/Density	Tex-121-E (Part II)	Every 20,000 CY	Inc. to 10 - 12 per Leg (Job)	Each	1	\$225.00	\$225.00
In-Place Density	Tex-115-E	Every 3,000 CY	LL/PI, MD, FD	Each	30	\$28.00	\$840.00
Test Reports			4 hrs - PI, Gr, MD, 2 hrs - FD	Hour	316	\$77.28	\$24,420.48
Tech Time (Soils)			43 Trips (40 Miles RT)	Mile	1720	\$0.585	\$1,006.20
# of Trips (Tech)				Hour	8	\$64.40	\$515.20
**Admin/Clerical							\$31,811.88
						Item Subtotal	

**Flexible Base (Untrreated, 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.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Liquid Limit	Tex-104-E		Included with PI	Each		\$45.00	\$0.00
Plasticity Index	Tex-106-E	Each 5,000 CY		Each	8	\$45.00	\$360.00
Gradation	Tex-110-E	Each 5,000 CY		Each	8	\$90.00	\$720.00
Moisture/Density	Tex-113-E	Every 20,000 CY		Each	2	\$225.00	\$450.00
Wet Ball Mill	Tex-116-E	Every 20,000 CY		Each	2	\$250.00	\$500.00
Triaxial	Tex-117-E	Every 20,000 CY		Each	2	\$2,300.00	\$4,600.00
Test Reports			LL/PI, MD, WB, Triaxial	Each	20	\$25.00	\$500.00
Tech Time (Soils)			4 hrs - LL, PI, MD & WB/Triax.	Hour	64	\$77.28	\$4,945.92
# of Trips (Tech)			4 Trip (80 Miles RT)	Mile	320	\$0.585	\$187.20
**Admin/Clerical				Hour	8	\$64.40	\$515.20
						Item Subtotal	
							\$12,778.32

**Flexible Base (Time 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 proposer compaction as required by project plans and specifications.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Pulverization Gradation	Tex-101-E (Part III)	Each 4,500 CY	Inc. to 5 - 8 per Leg (Job)	Each	0	\$100.00	\$0.00
Liquid Limit	Tex-104-E		Included with PI	Each		\$45.00	\$585.00
Plasticity Index	Tex-106-E	Each 5,000 CY	Inc. to 5 - 8 per Leg (Job)	Each	13	\$45.00	\$585.00
Gradation	Tex-110-E	Each 5,000 CY	Inc. to 5 - 8 per Leg (Job)	Each	13	\$90.00	\$1,170.00
Moisture/Density	Tex-121-E (Part II)	Every 20,000 CY	Complete Mixture	Each	2	\$225.00	\$450.00
In-Place Density	Tex-115-E	Every 3,000 CY	Inc. to 10 - 12 per Leg (Job)	Each	30	\$28.00	\$840.00
Test Reports			MC, LL/PI, MD, FD	Each	71	\$25.00	\$1,775.00
Tech Time (Soils)			4 hrs - PI, Gr, MD, 2 hrs - FD	Hour	128	\$77.28	\$9,891.84
# of Trips (Tech)			43 Trips (40 Miles RT)	Mile	1720	\$0.585	\$1,006.20
**Admin/Clerical				Hour	16	\$64.40	\$1,030.40
						Item Subtotal	
							\$17,333.44

**Asphalt Concrete Pavement (Item 341 - HMA-O/OA)**

- 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.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Coarse Aggr.							
L.A. Abrasion	Tex-410-A	1 Per Project Per Source Per Design	Stockpile 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	2	\$75.00	\$150.00
MicroDeval	Tex-461-A	1 Per every 12 Sublots	May be Eliminated based on Test History	Each	0		
Flat & Elongated Particles	Tex-280-F	1 Per Project Per Source Per Design		Each	2	\$60.00	\$120.00
Coarse Aggr. Angularity	Tex-460-A (Part I)	1 Per Project Per Source Per Design		Each	2	\$60.00	\$120.00
Del. Mat. and Decant	Tex-217-F	1 Per Project Per Source Per Design		Each	2	\$50.00	\$100.00
Fine Aggr.							
Bar Linear Shrinkage	Tex-107-E	1 Per Project Per Source Per Design	Stockpile	Each	2	\$45.00	\$90.00
Organic Impurities	Tex-408-A	1 Per Project Per Source Per Design		Each	2	\$50.00	\$100.00
Gradation	Tex-200-F	1 Per Project Per Source Per Design		Each	2	\$75.00	\$150.00
Mineral Filler							
Bar Linear Shrinkage	Tex-107-E	1 Per Project Per Source Per Design	Bin or Silo 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	\$75.00	\$0.00
Combined Aggr.			Stockpile or Feeder Belt				
Sand Equivalent	Tex-203-F	1 Per Project Per Source Per Design		Each	2	\$80.00	\$160.00
Complete Mix							
Asphalt Content (%)	Tex-236-F	1 Per Lot Per Design	Truck Sample	Each	40	\$95.00	\$3,800.00
Voids in Mineral Aggr. (VMA)	Tex-204-F	1 Per Sublot Per Design Min 1 Per 12 Sublots Per Design	with 227-F Rice Gravity	Each	160	\$90.00	\$14,400.00
Gradation	Tex-236-F	1 Per Project Per Source Per Design		Each	14	\$95.00	\$1,330.00
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	2	\$18.00	\$36.00
Lab Molded Density	Tex-207-F	1 Per Sublot Per Design		Each	160	\$90.00	\$14,400.00
Hamburg Wheel Tracker	Tex-242-F	1 Per Project Per Source Per Design	Make Contractor Perform Test At Site	Each	2	\$1,000.00	\$2,000.00
Roadway							
Field Coring		2 Cores Per Sublot Per Design	Make Contractor Perform Test	Each	320	\$0.00	\$0.00
In-Place Air Voids	Tex-207-F	2 Cores Per Sublot Per Design		Each	320	\$25.00	\$8,000.00
Segregation Profile	Tex-207-F (Part V)	1 Per Project Per Source Per Design		Each	2	\$315.00	\$630.00

Joint Density	Tex-207-F (Part VII)	1 Per Project Per Source Per Design	Each	2	\$315.00	\$630.00
Tack Coat Adhesion	Tex-243-F	1 Per Project Per Source Per Design	Each	0	\$100.00	\$0.00
Thermal Profile	Tex-244-F	1 Per Project Per Source Per Design	Each	2	\$200.00	\$400.00
Ride Quality	Tex-1001-S	Engineer may verify Contractor's results	Each	0		\$0.00
Asphalt Binder Compliance	DMS-6310	1 Per Project Per Source Per Design	Each	3	\$500.00	\$1,500.00
Test Reports			Each	681	\$25.00	\$17,025.00
Tech Time (Aggr)			Hour	16	\$77.28	\$1,236.48
Tech Time (Asph)			Hour	480	\$77.28	\$37,094.40
# of Trips (Tech)			Mile	1600	\$0.585	\$936.00
** Admin/Clerical			Hour	30	\$64.40	\$1,932.00
Item Subtotal						\$106,339.88

**Hydraulic Cement Concrete - Drill Shafts, Wharves & Traffic Rail Foundation (Class C) Extended Sub (Class S)**

- 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 the asphalt testing at the plants to insure delivery of acceptable material to the job site (as required).

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Coarse Aggr.			QA Test, (QC by Source)				
Decantation	Tex-406-A	Each 20,000 CY (or source)		Each	3	\$50.00	\$150.00
Sieve Analysis	Tex-401-A	Each 1,000 CY (ea source)	5 Sieve	Each	3	\$90.00	\$270.00
Deleterious Matl.	Tex-413-A	Each 20,000 CY (or source)		Each	3	\$50.00	\$150.00
L.A. Abrasion	Tex-410-A	Two Each Source	If CRSQC meets Project Spec ~ Remove	Each	0	\$600.00	\$0.00
Soundness	Tex-411-A	Two Each Source	If CRSQC meets Project Spec ~ Remove	Each	0	\$600.00	\$0.00
Fine Aggr.			QA Test, (QC by Source)				
Sand Equivalent	Tex-203-F	Each 1,000 CY (ea source)		Each	3	\$80.00	\$240.00
Organic Imp.	Tex-408-A	One Per Project Per Source		Each	3	\$50.00	\$150.00
Sieve Analysis	Tex-401-A	Each 1,000 CY (ea source)		Each	3	\$90.00	\$270.00
Fineness Mod.	Tex-402-A	Each 1,000 CY (ea source)		Each	3	\$15.00	\$45.00
Deleterious Matl.	Tex-413-A	Each 20,000 CY (or source)		Each	3	\$50.00	\$150.00
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	\$90.00	\$0.00
Concrete							
*Strength	Tex-447-A & Tex-418-A	Each 60 CY (2 Sets = 5 Cyl.)		Each	60	\$30.00	\$1,800.00
Slump	Tex-415-A	One per 2 Sets		Each	12	\$20.00	\$240.00
Entrained Air	Tex-416-A	One per 2 Sets		Each	12	\$25.00	\$300.00
Temperature	Tex-422-A	One per 2 Sets		Each	12	\$5.00	\$60.00

Item	Unit	Qty.	Contract Rate	Total
Test Reports	Each	52	\$25.00	\$1,300.00
Tech Time (Aggr)	Hour	16	\$77.28	\$1,236.48
Tech Time (Conc)	Hour	48	\$77.28	\$3,709.44
# of Trips (Tech)	Mile	960	\$0.585	\$561.60
**Admin/Clerical	Hour	18	\$64.40	\$1,159.20
Item Subtotal				\$11,791.72

**Hydraulic Cement Concrete Miss. - Riprap/Riprap/Movstrip/Curb/Sidewalk (Class A)**

- 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 the asphalt testing at the plants to insure delivery of acceptable material to the job site (as required).

Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Concrete							
*Strength	Tex-447-A & Tex-418-A	Each 180 CY (1 Set = 2 Cyl)	Adjust Per Str & Placement	Each	60	\$30.00	\$1,800.00
Slump	Tex-415-A	Not Required	Not Required	Each	0	\$20.00	\$0.00
Entrained Air	Tex-416-A	Not Required	Not Required	Each	0	\$25.00	\$0.00
Temperature	Tex-422-A	Not Required	Not Required	Each	0	\$5.00	\$0.00
Test Reports			Conc.	Each	60	\$25.00	\$1,500.00
Tech Time (Aggr)				Hour	0	\$77.28	\$0.00
Tech Time (Conc)				Hour	120	\$77.28	\$9,273.60
# of Trips (Tech)			30 Trips (40 Miles RT)	Mile	1200	\$0.585	\$702.00
**Admin/Clerical				Hour	16	\$64.40	\$1,030.40
Item Subtotal							\$14,306.00

**Batching for Hydraulic Cement Concrete (Class C&S) & Asphalt Concrete Pavement (ACP) - Inspection of Batching 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 the asphalt testing at the plants to insure delivery of acceptable material to the job site (as required).

Item	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Concrete							
Tech Time (Conc)				Hour	78	\$77.28	\$6,027.84
# of Trips (Tech)			16 Trip (40 Miles RT)	Mile	640	\$0.545	\$348.80
				Test Reports	12	\$25.00	\$300.00
Hot Mix							
Tech Time (Asph)				Hour	320	\$77.28	\$24,729.60
# of Trips (Tech)			40 Trips (50 Miles RT)	Mile	2000	\$0.585	\$1,170.00
**Admin/Clerical				Test Reports	5	\$25.00	\$125.00
				Hour	24	\$64.04	\$1,536.96
Item Subtotal							\$34,238.20

- \* 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, management and administration

Summary	
Sub-Total (CMT Items) =	\$271,037.32
Sr. Eng. Tech. (Coord. w/RP/C/Rpt. Rev.) (78 hrs x 128.80 Hr.)	\$10,046.40
Project Engineer (QA/QC of CMT) (168 hrs x 170.66 Hr.)	\$28,670.88
Sr. Eng. Tech. (Coord. w/CEI Team) (180 hrs x 128.80 Hr.)	\$23,184.00

**Construction Materials Testing Total : \$332,938.60**