

HIDALGO COUNTY
Professional Engineering Services
Contract # C-18-075-02-27

WORK AUTHORIZATION NO. 2

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 Phase Services (Construction Management, Inspection, Material Testing) for the Las Milpas Road (from SH 336 (10th St) to McColl Rd) 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 **\$339,560.07**. 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. 2 shall be funded through funding source:

Account No. _____

Requisition Number _____

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** _____, Commissioner _____ as to content and detail of this **Work Authorization No. 2**.

**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 _____ as indicated below.

**THE ENGINEER:
B2Z ENGINEERING**

**THE OWNER:
HIDALGO COUNTY**

By: Nicholus Muñoz, Vice President

By: Richard Cortez, County Judge

ATTEST:

By: Arturo Guajardo, Jr., County Clerk

LIST OF ATTACHMENTS

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

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 the proposed improvements to Las Milpas Road located within 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 consulting and design Engineer.
- 2) Payment for work performed by the **Engineer** and accepted by the **Owner** in accordance with Article 5 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

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

PROJECT/DESCRIPTION: Las Milpas Rd Project

ENGINEER shall mean B2Z Engineering.

STATE shall mean Texas Department of Transportation.

COUNTY shall mean Hidalgo County.

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

SECTION 12 - CONSTRUCTION PHASE SERVICES

(Function Code 320)

CONSTRUCTION MANAGEMENT SERVICES:

The ENGINEER will provide engineering, geotechnical testing and support services for and during the construction of the Project or portions of the Project approved by the COUNTY. Specific (basic and special) services for CONSTRUCTION MANAGEMENT AND SUPPORT by the ENGINEER will include the following:

Construction Bidding:

- 1) The ENGINEER will furnish the COUNTY the necessary copies of approved plans, specifications, notices to bidders, and proposals as prepared under PS&E.
- 2) The ENGINEER will assist the COUNTY on the tabulation of bids, recommendations to the Owner as to the proper action on all bid proposals received, and the preparation of formal contract documents for the award of each construction contract.

Construction Contract Administration and Inspection:

- 3) In general, the ENGINEER will provide the management and engineering support/data 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.
- 4) The ENGINEER will coordinate and conduct a pre-construction conference (if required).
- 5) Defects and Deficiencies. The ENGINEER 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.
- 6) Contractor Payment. The ENGINEER will review quantities as submitted by the Contractor and will coordinate with the COUNTY for the preparation of the monthly and final estimates for payment to the Contractor.
- 7) The ENGINEER will provide Project site inspection of the authorized construction contract as follows:
 - a) Project Engineer. The ENGINEER will provide visits by the Project 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) Resident Engineer and/or Construction Inspector(s). The ENGINEER will furnish the services of a Resident Engineer and/or Construction Inspector(s) for on the site inspection construction to monitor/inspect the Contractor’s daily progress and conformance to TxDOT’s PS&E specifications.

Miscellaneous Technical Activities:

- 8) Shop Drawings. The ENGINEER will review and check all shop or working drawings furnished by the Contractor.
- 9) Control of Materials & Equipment. The ENGINEER will provide inspection of all materials and equipment furnished/used by the Contractor as follows:

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

- 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.
- 10) Change Orders. When applicable the ENGINEER will 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.
- 11) As Built Drawings. The ENGINEER will develop as built drawings to depict the work as actually constructed. The COUNTY will be furnished five (5) set of prints.

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 and all/other recipients as designated by the COUNTY.
- (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

**Las Milpas Road Drainage, Bridge, and Traffic Signal System Installation Project
& Hidalgo County Pct. #2 Built Roadway and Drainage Project**

<i>Hidalgo County Precinct #2 Construction Phase Services</i>			Project Manager	Construction Engineer	Construction Inspector	Admin/Clerical	Total Hours	Total Line Item Cost
TASKS								
Construction Contract Administration								
1	Coordination with Affected Utilities (inc. HC Irrigation District #1) throughout the duration of the project	8	96		12	116	\$19,796.68	
2	Issue a Certificate of Substantial Completion that Certifies to Hidalgo County Pct #2 the Project was Constructed as Designed and Complies with Project Specifications.	8	12	6	6	32	\$4,711.54	
3	Prepare Monthly Invoicing to Hidalgo County Pct#2 for Review and Approval	16	8	6	24	54	\$6,757.16	
Subtotal Labor Hours		32	116	12	42	202	\$31,265.38	
Construction Management & Inspection								
Construction Management (During Construction)								
1	Meetings, and Coordination with the Contractor Throughout Construction Duration to Ensure Project Progression (Field Visits, Status Meetings, Issue Resolution, & Final Inspection)	16	24	48	24	112	\$13,540.64	
2	Construction and ROW Re-Staking in Support of Field Activities	8	12	60	8	88	\$9,832.04	
3	Review & Processing of Contractor's Application for Payment (Approval/Modification/Rejection)	4	8	8	24	44	\$4,566.40	
4	Obtain Hidalgo County's Concurrence with any Suggestions or Request for Information (RFI's) and/or Submittals made by the Contractor	4	8	12	10	34	\$4,012.06	
5	Coordinate with Hidalgo County Pct #2 on any required Change Orders	8	16		12	36	\$5,279.08	
Subtotal Labor Hours		40	68	128	78	314	\$37,230.22	
Construction Inspection								
1	On-Site Inspection During Construction Activities & Documentation in Project Diary. To include: SW3P requirements, maintaining job safety measures and implement OSHA requirements, inspection of Bridge Construction, TCP and Barricades, and coordination of CMT.	64	200	720		984	\$115,477.04	
2	Develop and Oversee Completion of a "Project Punch List" for project with Hidalgo County Pct #2 Staff/PM & Contractor's Representative	8	8	16	6	38	\$4,909.46	
Subtotal Labor Hours		72	208	736	6	1,022	\$120,386.50	
Construction Management (Post Construction)								
1	Coordinate Project Close-Out Documents for delivery to Hidalgo County Pct #2, Review Contractor's Final Application for Payment & Release of Retainage	8	8	16	10	42	\$5,173.42	
Subtotal Labor Hours		8	8	16	10	42	\$5,173.42	
Total Labor Hours		152	400	892	136	1580		
Hourly Base Rates		\$ 60.00	\$ 55.00	\$ 28.00	\$ 20.00			
Contract Rate FY2019		\$ 197.96	\$ 181.47	\$ 92.38	\$ 65.99			
Total Costs		\$ 30,089.92	\$ 72,588.00	\$ 82,402.96	\$ 8,974.64		\$194,055.52	
Direct Expenses	Mileage: \$0.560/mile			\$ 6,027.84				
	Construction Material Testing			\$139,476.71				
Total Direct Expenses				\$ 145,504.55				
B2Z Engineering Construction Management/Inspection & CMT							\$339,560.07	



EXHIBIT D

ESTIMATED MAN-HOURS AND TEST BREAKDOWN

Hidalgo County Precinct No. 2 Las Milpas Road Drainage, Bridge, and Traffic Signal System Installation Project Construction Materials Testing

Pipe and Box Backfill Material (Sand)

- 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.

	Test	Spec	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Atterberg Limits of Soils	ASTM D4318	PI>15 ~ Every 5,000 CY		Each	2	\$135.00	\$270.00
Moisture/Density	ASTM D698/Tex-114-E	One per Each Material		Each	2	\$225.00	\$450.00
In-Place Density	ASTM D6938/Tex-115-E	Every 500 CY Linear Feet (Min. 1 per Lift)		Each	45	\$28.00	\$1,260.00
Test Reports				Each	6	\$25.00	\$150.00
Engineer Tech			MD & FD	Hour	120	\$79.19	\$9,502.80
# of Trips (Tech)			34 Trips (36 Miles RT)	Mile	1224	\$0.56	\$685.44
**Admin/Clerical				Hour	16	\$65.99	\$1,055.84
Item Subtotal							\$13,374.08

Embankment (Test All Fill Material Including Cut From Job, Backfill for Structures)

- 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.

	Test	Spec	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Atterberg Limits of Soils	ASTM D4318	PI>15 ~ Every 5,000 CY		Each	6	\$135.00	\$810.00
Gradation	ASTM D422/Tex-110-E	Every 10,000 CY		Each	2	\$90.00	\$180.00
Moisture/Density	ASTM D698/Tex-114-E	One per Each Material		Each	2	\$225.00	\$450.00
In-Place Density	ASTM D6938/Tex-115-E	Every 5,000 CY or 6,000 Linear Feet (Min. 1 per Lift)		Each	36	\$28.00	\$1,008.00
Test Reports			LL/PI, Grad, MD & FD	Each	18	\$25.00	\$450.00
Engineer Tech			PI, Gr, MD & FD	Hour-	120	\$79.19	\$9,502.80
# of Trips (Tech)			32 Trips (36 Miles RT)	Mile	1152	\$0.56	\$645.12
**Admin/Clerical				Hour	28	\$65.99	\$1,847.72
Item Subtotal							\$14,893.64

Pipe Final Backfill Material 12" Lifts Drainage and Irrigation

- 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.

	Test	Spec	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Atterberg Limits of Soils	ASTM D4318	PI>15 ~ Every 5,000 CY		Each	2	\$135.00	\$270.00
Gradation	ASTM D422/Tex-110-E	Each 5,000 CY	Assume 1 Mtl for Project	Each	2	\$90.00	\$180.00
Moisture/Density	ASTM D1557/Tex-113-E		Assume 1 Mtl for Project	Each	2	\$225.00	\$450.00
In-Place Density	ASTM D6938/Tex-115-E			Each	68	\$28.00	\$1,904.00
Test Reports			LL/PI, Grad, MD, FD	Each	27	\$25.00	\$675.00
Engineer Tech			PI, Gr, MD & FD	Hour	80	\$79.19	\$6,335.20
# of Trips (Tech)			50 Trips (36Miles RT)	Mile	1800	\$0.56	\$1,008.00
**Admin/Clerical				Hour	38	\$65.99	\$2,507.62
Item Subtotal							\$13,329.82

Hydraulic Cement Concrete Structure, Culvert Boxes, Bridge Slab & RipRap (Class C)

- Field sampling and testing of fresh concrete and laboratory testing of hardened concrete to determine compliance with project plans and specifications.

	Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Coarse Aggr.			QA Test. (QC by Source)				
Decantation	ASTM C117/Tex-406-A	Each 20,000 CY (or source)		Each	1	\$50.00	\$50.00
Sieve Analysis	ASTM C136/Tex-401-A	Each 1,000 CY (ea source)	5 Sieve	Each	1	\$90.00	\$90.00
Deleterious Matl.	ASTM C117/Tex-413-A	Each 20,000 CY (or source)		Each	1	\$50.00	\$50.00
Fine Aggr.			QA Test. (QC by Source)				
Sand Equivalent	ASTM D2419/Tex-203-F	Each 1,000 CY(ea source)		Each	1	\$80.00	\$80.00
Organic Imp.	ASTM C87/Tex-408-A	One Per Project Per Source		Each	1	\$50.00	\$50.00
Sieve Analysis	ASTM C136/Tex-401-A	Each 1,000 CY(ea source)		Each	1	\$90.00	\$90.00
Fineness Mod.	ASTM C128/Tex-402-A	Each 1,000 CY(ea source)		Each	1	\$15.00	\$15.00
Deleterious Matl.	ASTM C117/Tex-413-A	Each 20,000 CY (or source)		Each	1	\$50.00	\$50.00
Concrete							
*Strength	ASTM C192/Tex-447-A & ASTM C39/Tex-418-A	Each 60 CY(1 Sets = 5 Cyl.)		Each	75	\$30.00	\$2,250.00
Slump	ASTM C143/Tex-415-A	One per Set		Each	15	\$20.00	\$300.00
Entrained Air	ASTM C231/Tex-416-A	One per Set		Each	15	\$25.00	\$375.00
Temperature	ASTM C1064/Tex-422-A	One per Set		Each	15	\$5.00	\$75.00
Test Reports			CA,FA,MF,Conc.	Each	47	\$25.00	\$1,175.00
Engineer Tech				Hour	32	\$79.19	\$2,534.08
Engineer Tech				Hour	120	\$79.19	\$9,502.80
# of Trips (Tech)			60 Trips (36 Miles RT)	Mile	2160	\$0.56	\$1,209.60
**Admin/Clerical				Hour	80	\$65.99	\$5,279.20
						Item Subtotal	\$23,175.68

* 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 5 Cylinders (7-day(2), 28-day(2) and 56-Day(1))

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

Summary

Sub-Total (CMT Items) =	\$64,773.22
Sr. Eng. Tech. (147 hrs x 118.78 Hr.)	\$17,460.66
Project Engineer (Admin. Fee - Oversight) (75 hrs x 148.47 Hr.)	\$11,135.25

Construction Materials Testing Total :	\$93,369.13
---	--------------------



EXHIBIT D

ESTIMATED MAN-HOURS AND TEST BREAKDOWN

Hidalgo County Pct. 2 Las Milpas Road Drainage, Bridge, and Traffic Signal System Installation Project 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 proposer compaction as required by project plans and specifications.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Atterbert Limits of Soils	Tex-106-E	PI>15 ~ Every 5,000 CY		Each	7	\$135.00	\$945.00
Gradation	Tex-110-E	Each 10,000 CY		Each	4	\$90.00	\$360.00
Moisture/Density	Tex-114-E	As Directed by Engineer		Each	2	\$225.00	\$450.00
In-Place Density	Tex-115-E	Every 1,000 CY (Min. 1 per Lift)		Each	28	\$28.00	\$784.00
Test Reports			LL/PI, Grad, MD, FD	Each	17	\$25.00	\$425.00
Engineer Tech				Hour-	52	\$79.19	\$4,117.88
# of Trips (Tech)			30 Trips (36 Miles RT)	Mile	1080	\$0.56	\$604.80
Admin/Clerical				Hour	17	\$65.99	\$1,121.83
Item Subtotal							\$8,808.51

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.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Organic Content	Tex-148-E	1 Per Project/Source or As Directed by Engineer	Estimated to Match Sulfate Content Testing Locations	Each	2	\$60.00	\$120.00
Sulfate Content	Tex-145-E	Each 500 LF or 5000 CY		Each	4	\$95.00	\$380.00
Test Reports			OC & SC	Each	6	\$25.00	\$150.00
Engineer Tech				Hour	6	\$79.19	\$475.14
# of Trips (Tech)			12 Trips (36 Miles RT)	Mile	432	\$0.56	\$241.92
Admin/Clerical				Hour	6	\$65.99	\$395.94
Item Subtotal							\$1,763.00

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.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Compliance of Lime (DMS 6350)	Tex-600-J	1 per 200 Tons		Each	2	\$300.00	\$600.00
Item Subtotal							\$600.00

Subgrade (Lime 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	Remain Consistent Each 4,500 CY	Each	2	\$100.00	\$200.00
Atterberg Limits of Soils	Tex-106-E	Each 5,000 CY		Each	2	\$135.00	\$270.00
Gradation	Tex-110-E	Each 5,000 CY		Each	2	\$90.00	\$180.00
Moisture/Density	Tex-121-E (Part II)	Every 20,000 CY		Each	1	\$225.00	\$225.00
In-Place Density	Tex-115-E	Every 1,000 CY (Min. 1 per Lift)		Each	6	\$28.00	\$168.00
Test Reports			LL/PI, MD, FD	Each	9	\$25.00	\$225.00

Engineer Tech			4 hrs - PI,Gr,MD, 2 hrs - FD	Hour	26	\$79.19	\$2,058.94
# of Trips (Tech)			6 Trips (36 Miles RT)	Mile	216	\$0.56	\$120.96
Admin/Clerical				Hour	9	\$65.99	\$593.91
Item Subtotal							\$4,041.81

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.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Atterberg Limits of Soils	Tex-106-E	Each 5,000 CY		Each	1	\$135.00	\$135.00
Gradation	Tex-110-E	Each 5,000 CY		Each	1	\$90.00	\$90.00
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	\$250.00	\$250.00
Test Reports			LL/PI, MD, WB,	Each	4	\$25.00	\$100.00
Engineer Tech			2 hrs - LL,PI,MD & WB.	Hour	16	\$79.19	\$1,267.04
# of Trips (Tech)			3 Trip (36 Miles RT)	Mile	108	\$0.56	\$60.48
Admin/Clerical				Hour	4	\$65.99	\$263.96
Item Subtotal							\$2,391.48

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.

	TxDOT Test	TxDOT Guide Specs	Additional Assumptions	Unit	Qty.	Contract Rate	Total
Atterberg Limits of Soils	Tex-106-E	Each 5,000 CY		Each	1	\$135.00	\$135.00
Gradation	Tex-110-E	Each 5,000 CY		Each-4	1	\$90.00	\$90.00
Moisture/Density	Tex-121-E (Part II)	Every 20,000 CY	Complete Mixture	Each	1	\$225.00	\$225.00
In-Place Density	Tex-115-E	Every 1,000 CY (Min. 1 per Lift)		Each	12	\$28.00	\$336.00
Test Reports			LL/PI, MD, FD	Each	8	\$25.00	\$200.00
Engineer Tech			2 hrs - PI,Gr,MD, 2 hrs - FD	Hour	52	\$79.19	\$4,117.88
# of Trips (Tech)			6 Trips (36 Miles RT)	Mile	216	\$0.56	\$120.96
Admin/Clerical				Hour	16	\$65.99	\$1,055.84
Item Subtotal							\$6,280.68

Pipe Bedding Material (Shall Be Pit Run Gravel w Max Size 3/4 in.)

- 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	Spec	Additional Assumptions	Unit	Qty.	Contract Rate	Total	Maj. Locations
Atterberg Limits of Soils	Tex-106-E	Each 5,000 CY		Each	1	\$135.00	\$135.00	
Gradation	Tex-110-E		1 per 500 LF of Bedding	Each	5	\$90.00	\$450.00	
Test Reports			Grad	Each	6	\$25.00	\$150.00	
Engineer Tech			2 hrs - Grad	Hour	10	\$79.19	\$791.90	
# of Trips (Tech)			5 Trips (36 Miles RT)	Mile	180	\$0.56	\$100.80	
Admin/Clerical				Hour	6	\$65.99	\$395.94	
Item Subtotal							\$2,023.64	

Asphalt Concrete Pavement (HMA-QC/QA w/ surface treatment)

- 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.			Stockpile				
Gradation	Tex-200-F	1 Per Project Per Source Per Design		Each	1	\$75.00	\$75.00
Flat & Elongated Particles	Tex-280-F	1 Per Project Per Source Per Design		Each	1	\$60.00	\$60.00
Coarse Aggr. Angularity	Tex-460-A (Part I)	1 Per Project Per Source Per Design		Each	1	\$60.00	\$60.00

Del. Matl. and Decant	Tex-217-F	1 Per Project Per Source Per Design		Each	1	\$50.00	\$50.00
Fine Aggr.			Stockpile				\$0.00
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	\$75.00	\$75.00
Sand Equivalent	Tex-203-F	1 Per Project Per Source Per Design		Each	1	\$80.00	\$80.00
Complete Mix			Truck Sample				
Asphalt Content (%)	Tex-236-F	1 Per Lot Per Design		Each	4	\$95.00	\$380.00
Voids in Mineral Aggr. (VMA)	Tex-207-F	1 Per Sublot Per Design	with 227-F Rice Gravity	Each	4	\$90.00	\$360.00
Gradation	Tex-236-F	Min 1 Per 12 Sublots Per Design		Each	4	\$95.00	\$380.00
Moisture Content	Tex-212-F (Part II)	1 Per Project Per Source Per Design		Each	4	\$18.00	\$72.00
Lab Molded Density	Tex-207-F	1 Per Sublot Per Design		Each	8	\$90.00	\$720.00
Roadway			At Site				\$0.00
In-Place Air Voids	Tex-207-F	2 Cores Per Sublot Per Design		Each	8	\$25.00	\$200.00
Thermal Profile	Tex-244-F	1 Per Project Per Source Per Design		Each	1	\$200.00	\$200.00
Asphalt Binder Compliance	DMS-6310	1 Per Project Per Source Per Design		Each	1	\$500.00	\$500.00
Test Reports				Each	6	\$25.00	\$150.00
Engineer Tech			8 hours per day (trips/test) X 6	Hour	16	\$79.19	\$1,267.04
Engineer Tech			12 hours per 4 days	Hour	48	\$79.19	\$3,801.12
# of Trips (Tech)			6 Trips (36 Miles RT)	Mile	216	\$0.56	\$120.96
Admin/Clerical				Hour	8	\$65.99	\$527.92
Item Subtotal							\$9,174.04

Hydraulic Cement Concrete ~ Traffic Rail Foundation (Class C) and Curb/Gutter (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).

	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	1	\$50.00	\$50.00
Sieve Analysis	Tex-401-A	Each 1,000 CY (ea source)	5 Sieve	Each	1	\$90.00	\$90.00
Deleterious Matl.	Tex-413-A	Each 20,000 CY(or source)		Each	1	\$50.00	\$50.00
Fine Aggr.			QA Test. (QC by Source)				
Sand Equivalent	Tex-203-F	Each 1,000 CY(ea source)		Each	1	\$80.00	\$80.00
Organic Imp.	Tex-408-A	One Per Project Per Source		Each	1	\$50.00	\$50.00
Sieve Analysis	Tex-401-A	Each 1,000 CY(ea source)		Each	1	\$90.00	\$90.00
Fineness Mod.	Tex-402-A	Each 1,000 CY(ea source)		Each	1	\$15.00	\$15.00
Deleterious Matl.	Tex-413-A	Each 20,000 CY(or source)		Each	1	\$50.00	\$50.00
Concrete							\$0.00
*Strength	Tex-447-A & Tex-418-A	Each 60 CY(2 Sets = 5 Cyl)		Each	15	\$30.00	\$450.00
Slump	Tex-415-A	One per 2 Sets		Each	1	\$20.00	\$20.00
Entrained Air	Tex-416-A	One per 2 Sets		Each	1	\$25.00	\$25.00
Temperature	Tex-422-A	One per 2 Sets		Each	1	\$5.00	\$5.00
Test Reports			CA,FA,MF,Conc.	Each	11	\$25.00	\$275.00
Engineer Tech				Hour	27	\$79.19	\$2,138.13
# of Trips (Tech)			4 Trips (36 Miles RT)	Mile	144	\$0.56	\$80.64
Admin/Clerical				Hour	11	\$65.99	\$725.89
Item Subtotal							\$4,194.66

* 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 5 Cylinders (7-day(2), 28-day(2) and 56-Day(1))

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

Summary

Sub-Total (CMT Items) =	\$39,277.82
Sr. Eng. Technician (35 hrs x 118.78Hr.)	\$4,157.30
Project Engineer (Admin. Fee - Oversight) (18 hrs x 148.47 Hr.)	\$2,672.46

Constuction Materials Testing Total : \$46,107.58