Terracon

December 22, 2016

City of McKinney
Attn.: Ms. Patricia L. Jackson
221 North McKinney Street
McKinney, Texas 75069

Subject: Proposal for Construction Materials Testing and Observation Services
McKinney Public Safety Support Building
2750 Community Avenue, McKinney, Texas 75071
Terracon Proposal No.: P94161436

Dear Ms. Jackson:

Terracon Consultants, Inc. (Terracon) appreciates being selected to provide construction materials testing and observation services or special inspection services for the above referenced project as required in accordance with any City modifications and the applicable project requirements. We are presenting this proposal to confirm our understanding of the services to be performed for this project, to obtain written authorization to provide these services, and to present the estimated fee to provide these services. The following sections outline our understanding of the project and provides a description of the tasks to be performed.

A) PROJECT INFORMATION (Exhibit A)

The site is located at 2750 Community Avenue in McKinney, Texas. The project involves the construction of a new 26,700 SF one-story building. The building foundation will consist of drilled straight shaft piers and will utilize an interior slab-on-grade and a perimeter structural slab-on-void cartons. The structure will consist of a structural steel framing system with exterior structural CMU walls. There are also associated with the project typical concrete surface parking and drive lanes along with site utilities and structures.

Terracon was provided with the following construction documents for preparation of this proposal:

- Civil Drawings dated 06/28/2016
- Structural Drawings dated 09/30/2016
- Terracon Geotechnical Report # 94045182 dated June 2004

B) SCOPE OF SERVICES (Exhibit B)

Based on our review and understanding of the documents listed above, Terracon proposes the following scope of services:

Earthwork Observations and Testing:

1. Sample materials to be used as building fills, utility trench backfill, wall backfill, general fill, and pavement subgrades. Prepare and test the samples for Atterberg Limits (ASTM D4318), percent fines (ASTM D1140), and moisture-density relationship (ASTM D698).
2. Perform density tests of the building fills, utility trench backfill, wall backfill, general fill, and pavement subgrades using the nuclear method (ASTM D6938) to determine the moisture content and percent compaction of the soil materials.
3. Perform field gradations on the pulverized lime/soil mixture to document the percent of soil passing through the required sieve sizes at 1 test per 10,000 sq. ft. after the final pulverization process has been completed.
4. Perform lime depth checks to verify the actual in-place depth of the lime treatment at 1 test per 10,000 sq. ft., once the pavement has been trimmed to the final grade.

Drilled Straight Shaft Pier Observation and Testing:

1. Monitor the installation of the drilled pier foundation system including verification of the depth to bearing strata, required and actual depth of penetration into the bearing strata for each pier, total depth of piers, pertinent elevations (if provided by the field engineer), plumbness of the drilled pier hole excavation, cleanliness of bearing surface at completion of drilling, etc.
2. Record dimensions and the number, size and length of reinforcing bars used.
3. Sample the fresh concrete and perform required tests, including slump, air content, unit weight, ambient and concrete temperature, and cast test specimens (5 cylinders per 100 cy or fraction thereof per mix per day) during placements (ASTM C172, C31, C143, C138, C231, and C1064).
4. Perform compressive tests of concrete test cylinders cast in the field (ASTM C617, C39).

Cast-in-Place Concrete Observations and Testing:

1. Sample and test the fresh concrete for each mix. Perform tests for slump, air content, ambient and concrete temperatures, and unit weight; and cast test specimens (ASTM C172, C31, C143, C138, C231, C1064). Terracon understands that the contractor will be responsible for maintaining the initial field curing temperature of the concrete test specimens.
2. We have assumed the concrete will be sampled at a frequency of 1 set of five test cylinders every 100 cubic yards or fraction thereof per mix per day for all structural concrete. Terracon requests that a copy of the approved mix design(s) be provided to us prior to placement of the concrete.
3. Perform compressive strength tests of concrete test cylinders cast in the field (ASTM C31, C39). Five 4" x 8" concrete cylinders will be prepared for structural concrete having nominal maximum size aggregate of 1" or less. When 4" x 8" cylinders are prepared, one cylinder will be tested at 7 days, three cylinders will be tested at 28 days, and one cylinder will be tested at 56 days or at an age requested by others.

Reinforcing Steel Observation and Testing:

1. Verify the size, number and placement of reinforcing steel prior to placement of concrete.
2. Terracon recommends we be scheduled a minimum of 24 hours prior to concrete placement.

Masonry Observations and Testing:

1. Provide a qualified technician for periodic field observation during load-bearing CMU wall construction.
2. Sample mortar for compressive strength testing. (6 mortar cubes 2"x2"x2" per 5,000 SF wall area)
3. Sample grout for compressive strength testing. (4 grout prisms 3"x3"x6" per 5,000 SF wall area)

Structural Steel Observations and Testing:

1. Provide a Certified Welding Inspector (CWI) in the field to visually check accessible field bolted/welded connections in accordance with applicable AISC and AWS specifications.
2. Perform visual inspections of 100% of completed accessible welds to verify that the welds meet the visual acceptance criteria contained in AWS D1.1.

Sprayed Fire Resistive Material / Intumescent Mastic Fireproofing:

1. Periodically provide visual inspection of Sprayed Fire Resistive Material (SFRM).
2. Perform thickness, density, and bond adhesion/cohesion tests on SFRM applied to structural members at frequencies and in accordance with applicable specified test standards (ASTM E605, E736).
3. Perform thickness tests on Intumescent Mastic Fireproofing applied to structural members at frequencies and in accordance with applicable specified test standards (IBC 1704.11).

Project Management/ Administration:

A project manager will be assigned to the project to review the daily activity and assist in scheduling the work. Field and laboratory tests will be reviewed prior to submittal. The project manager will be responsible for maintaining the project budget and will oversee the preparation of the final report.

Special Inspections Letter:

Upon completion of our services, a special inspection letter will be prepared, if requested. The letter will list services we performed and if our results and/ or observation were in compliance.

Scheduling Retests:

It is the responsibility of your representative to schedule retests in a like manner to scheduling our original services. Terracon shall not be held responsible for retests not performed as a result of a failure to schedule our services or any subsequent damage caused as a result of a lack of retesting.

Additional Services:

If you would like us to perform additional work, please contact us and we will issue a short Supplement to Agreement form, or Supplemental Proposal, that outlines the additional work to be performed and associated fees. To authorize us to begin additional work, you simply return a signed copy of the Supplemental agreement.

C) REPORTING

Results of field tests will be submitted verbally to available personnel at the site. Written reports of field tests and observations will be distributed within five business days. Test reports will be distributed via electronic distribution unless otherwise requested. Please provide Terracon with a report distribution list prior to the beginning of the project. The list should include the company name, address, contact person name, phone number, and e-mail address for each person.

Our reported test locations will typically be estimated by pacing distances and approximating angles and elevations from local control data (staking and layout lines) provided by others on site. The accuracy of our locations will be dependent on the accuracy, availability and frequency of the control points provided by the client and/ or contractor.

Field testing services will be provided on an "as requested" basis when scheduled by your representative. A minimum of 24-hour notice is required to properly schedule our services. To schedule our services please contact our dispatcher at (214) 630-1078. The dispatch office hours are from 6:30 a.m. to 4:00 p.m. Messages left after business hours will be checked the following business day. Terracon shall not be held responsible for tests not performed as a result of a failure to schedule our services or any subsequent damage caused as a result of a lack of testing. Terracon recommends that a copy of this proposal be provided to the general contractor so they understand our scope of services and schedule us accordingly. Please note that the number of tests and trips described in the Scope of Services does not constitute a minimum or maximum number of tests or trips that may be required for this project.

D) COMPENSATION (Exhibit C)

Based on the project information available for our review, we propose an estimated cost of **$65,460.00.** Services provided will be based on the unit rates included in the attached Cost Estimate. Please note that this is only a budget estimate and not a not-to-exceed price. Many factors beyond our control, such as weather and the contractor's schedule, will dictate the final fee for our services.

For services provided on an "**as requested**" basis, overtime is defined as all hours in excess of eight hours per day or outside of the normal hours of 7:00 a.m. to 5:00 p.m. Monday through Friday, and all hours worked on weekends and holidays. Overtime rates will be 1.5 times the hourly rate quoted. A two hour minimum charge is applicable to all trips made portal to portal our laboratory to provide our testing, observation and consulting services. The minimum charge is not applicable for trips to the project site for sample pickup only. All labor, equipment and transportation charges are billed on a portal to portal basis from our office.

You will be invoiced on a monthly basis for services actually performed and/or as authorized or requested by you or your designated representative. Terracon's total invoice fee is due within thirty days following final receipt of invoice. Quantities and costs associated with re-tests, cancellations and stand-by time are not included in our estimated fee.

E) SITE ACCESS AND SAFETY

Client shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the services and will execute any necessary site access agreement. Terracon will be responsible for supervision and site safety measures for its own employees, but shall not be responsible for the supervision or health and safety precautions for any third parties, including Client's contractors, subcontractors, or other parties present at the site.

F) TESTING AND OBSERVATION

Client understands that testing and observation are discrete sampling procedures, and that such procedures indicate conditions only at the depths, locations, and times the procedures were performed. Terracon will provide test results and opinions based on tests and field observations only for the work tested. Client understands that testing and observation are not continuous or exhaustive, and are conducted to reduce – not eliminate - project risk. Client agrees to the level or amount of testing performed and the associated risk. Client is responsible (even if delegated to contractor) for notifying and scheduling Terracon so Terracon can perform these services.

Terracon shall not be responsible for the quality and completeness of Client's contractor's work or their adherence to the project documents, and Terracon's performance of testing and observation services shall not relieve contractor in any way from its responsibility for defects discovered in its work, or create a warranty or guarantee. Terracon will not supervise or direct the work performed by contractor or its subcontractors and is not responsible for their means and methods.

G) AUTHORIZATION

This proposal for services and accompanying limitations shall constitute the exclusive terms, conditions and services to be performed for this project. This proposal is valid only if authorized within sixty days from the listed proposal date.

We appreciate this opportunity of working with you and we look forward to working with you in the future.

Sincerely,
Terracon Consultants, Inc.
(Texas Registration No. F-3272)

Lyndon J. Cox, P.E.
Senior Principal

Kenneth Bradley, SET
Project Manager

Attachments:
(1) Cost Estimate

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BUDGET ESTIMATE - (Exhibit C)
McKinney Public Safety Support Building
2750 Community Avenue, McKinney, Texas 75071
TERRACON PROPOSAL NO. P94161436
December 22, 2016

Service	Quantity	Unit	Unit Rate	Estimate
BUILDING				
Earthwork Observation and Testing				
Soils Technician, hour (min. 2 hours)	96	hour	$48.00	$4,608.00
Soils Technician, (Overtime)	24	hour	$67.50	$1,620.00
Vehicle Charge	12	trip	$48.00	$576.00
Moisture Density Relationship (ASTM D698)	3	each	$150.00	$450.00
Sieve Analysis (Minus 200) (ASTM D1140)	3	each	$25.00	$75.00
Atterberg Limits (ASTM D4318)	3	each	$50.00	$150.00
Nuclear Density Gauge	12	day	$50.00	$600.00
			Sub-total	**$8,079.00**
Foundation Observation and Testing				
Foundation Technician, (min. 2 hours)	96	hour	$48.00	$4,608.00
Foundation Technician, (Overtime)	30	hour	$67.50	$2,025.00
Vehicle Charge	12	trip	$48.00	$576.00
Concrete Test Cylinders (ASTM C39)	60	each	$15.00	$900.00
			Sub-total	**$8,109.00**
Concrete Testing & Reinforcing Steel Observation				
Concrete Technician, (min. 2 hours)	48	hour	$48.00	$2,304.00
Concrete Technician, (Overtime)	12	hour	$67.50	$810.00
Vehicle Charge	10	trip	$48.00	$480.00
Concrete Test Cylinders (ASTM C39)	65	each	$15.00	$975.00
			Sub-total	**$4,569.00**
Masonry				
Masonry Technician, (min. 2 hours)	140	hour	$48.00	$6,720.00
Masonry Technician, (Overtime)	0	hour	$67.50	$0.00
Vehicle Charge	35	trip	$48.00	$1,680.00
Mortar Cubes	210	each	$10.00	$2,100.00
Grout Prisms	140	each	$50.00	$7,000.00
			Sub-total	**$17,500.00**
Structural Steel Observation				
Certified Welding Inspector (CWI), (min. 2 hours)	24	hour	$85.00	$2,040.00
Vehicle Charge	6	trip	$48.00	$288.00
			Sub-total	**$2,328.00**
Fireproofing				
Fireproofing Technician, (min. 2 hours)	18	hour	$65.00	$1,170.00
Fireproofing Technician, (Overtime)	0	hour	$97.50	$0.00
Vehicle Charge	6	trip	$48.00	$288.00
Density of Sprayed Applied Fireproofing	6	each	$30.00	$180.00
Bond Strength Testing	6	each	$65.00	$390.00
			Sub-total	**$2,028.00**

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BUDGET ESTIMATE - (Exhibit C)
Mckinney Public Safety Support Building
2750 Community Avenue, Mckinney, Texas 75071
TERRACON PROPOSAL NO. P94161436
December 14, 2016

Service	Quantity	Unit	Unit Rate	Estimate
SITEWORK				
Earthwork Observation and Testing				
Soils Technician, hour (min. 2 hours)	72	hour	$48.00	$3,456.00
Soils Technician, (Overtime)	20	hour	$67.50	$1,350.00
Vehicle Charge	18	trip	$48.00	$864.00
Moisture Density Relationship (ASTM D698)	3	each	$150.00	$450.00
Sieve Analysis (Minus 200) (ASTM D1140)	3	each	$25.00	$75.00
Atterberg Limits (ASTM D4318)	3	each	$50.00	$150.00
Nuclear Density Gauge	18	day	$50.00	$900.00
			Sub-total	**$7,245.00**
Concrete Testing & Reinforcing Steel Observation				
Concrete Technician, (min. 2 hours)	72	hour	$48.00	$3,456.00
Concrete Technician, (Overtime)	26	hour	$67.50	$1,755.00
Vehicle Charge	12	trip	$48.00	$576.00
Concrete Test Cylinders (ASTM C39)	165	each	$15.00	$2,475.00
			Sub-total	**$8,262.00**
ADMINISTRATION				
Project Manager	48	hour	$115.00	$5,520.00
Clerical	24	hour	$55.00	$1,320.00
Final Letter	4	each	$125.00	$500.00
			Sub-total	**$7,340.00**
			Estimated Project Total	**$65,460.00**