

City of Fayetteville Staff Review Form

2022-0034

Legistar File ID

2/1/2022

City Council Meeting Date - Agenda Item Only
N/A for Non-Agenda Item

Wade Abernathy

1/14/2022

FACILITIES MANAGEMENT (140)

Submitted By

Submitted Date

Division / Department

Action Recommendation:

Approve Materials Testing Services Agreement with GTS, Inc. Pursuant to RFQ# 21-01, Selection #2 in the amount of \$100,780 and a \$10,000 contingency for materials testing related to the replacement parking deck for the Cultural Arts Corridor Phase I 2019 Bond project and approve a budget adjustment.

Budget Impact:

4608.860.7820-5860.02	Arts Corridor 2019 Bonds																								
Account Number	Fund																								
46080.7820	Arts Corridor 2019 Bonds - Parking																								
Project Number	Project Title																								
<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Budgeted Item?</td> <td style="width: 10%;"><u>Yes</u></td> </tr> <tr> <td>Does item have a cost?</td> <td><u>Yes</u></td> </tr> <tr> <td>Budget Adjustment Attached?</td> <td><u>Yes</u></td> </tr> </table>	Budgeted Item?	<u>Yes</u>	Does item have a cost?	<u>Yes</u>	Budget Adjustment Attached?	<u>Yes</u>	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Current Budget</td> <td style="width: 10%;">\$</td> <td style="width: 60%; text-align: right;">11,381,017.00</td> </tr> <tr> <td>Funds Obligated</td> <td>\$</td> <td style="text-align: right;">11,337,286.80</td> </tr> <tr> <td style="border-top: 1px solid black;">Current Balance</td> <td style="border-top: 1px solid black;">\$</td> <td style="border-top: 1px solid black; text-align: right; background-color: #f0f0f0;">43,730.20</td> </tr> <tr> <td>Item Cost</td> <td>\$</td> <td style="text-align: right;">110,780.00</td> </tr> <tr> <td>Budget Adjustment</td> <td>\$</td> <td style="text-align: right;">110,780.00</td> </tr> <tr> <td style="border-top: 1px solid black;">Remaining Budget</td> <td style="border-top: 1px solid black;">\$</td> <td style="border-top: 1px solid black; text-align: right; background-color: #f0f0f0;">43,730.20</td> </tr> </table>	Current Budget	\$	11,381,017.00	Funds Obligated	\$	11,337,286.80	Current Balance	\$	43,730.20	Item Cost	\$	110,780.00	Budget Adjustment	\$	110,780.00	Remaining Budget	\$	43,730.20
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V20210527

Purchase Order Number: _____

Previous Ordinance or Resolution # _____

Change Order Number: _____

Approval Date: _____

Original Contract Number: _____

Comments:



MEETING OF FEBRUARY 1, 2022

TO: Mayor and City Council

THRU: Susan Norton, Chief of Staff
Paul Becker, Chief Financial Officer

FROM: Wade Abernathy, Director Bond and Construction Projects

DATE: January 14, 2022

SUBJECT: Materials Testing Services Agreement for Replacement Parking

RECOMMENDATION:

Staff Recommends approval of a Materials Testing Services Agreement with GTS, Inc. pursuant to RFQ#21-01, Selection #2 in the amount of \$100,780.00 and a contingency of \$10,000 for materials testing and concrete placement observation related to the replacement parking deck for the Cultural Arts Corridor Phase I 2019 Bond Project and approval of a budget adjustment.

BACKGROUND:

November 2021, Council passed resolution 284-21 approving Nabholz Inc., contract Change Order for the early grading package for the replacement parking deck.
December 2021, Council passed resolution 309-21 approving Nabholz Inc., contract Change Order for the GMP for the replacement parking deck.

DISCUSSION:

Materials testing is required to ensure the materials are placed in accordance with the Engineers Specifications. GTS was selected thru our Purchasing RFQ process in early 2021. The scope of their services include earthwork testing, drilled piers inspections, structural concrete and post tension inspections, structural steel inspections, and concrete placement observations.

BUDGET/STAFF IMPACT:

A Budget Adjustment will move funds from the Phase 1 Arts Corridor Bond Unallocated Budget (46080.7999) to the Arts Corridor Parking project (46080.7820).

Attachments:

Materials Testing Agreement



www.gtsc consulting.net

January 6, 2022



125 West Mountain Street
Fayetteville, Arkansas 72701

Attention: Mr. Wade Abernathy

Re: Special Inspections and Materials Testing Services Proposal
Downtown Parking Deck
Fayetteville, Arkansas
No. GTS1211093

Mr. Abernathy:

GTS, Inc. appreciates the opportunity to perform Special Inspections and Construction Materials Testing (CMT) Services for the planned Fayetteville Downtown Parking Deck project. This is our understanding of our scope of services for the structure, and the total fees anticipated based on the project schedule and trips to the site.

It is understood and agreed to that an amendment will be issued if the below quantities need to be adjusted.

Sincerely,



Jason Williams, P.E.
Project Engineer

David Berry, P.E.
President

Copies to: *addressee*

PROJECT SUMMARY

The project site is in downtown Fayetteville along West Avenue north of Dickson Street. GTS Inc. understands that this project will consist of new construction of a 6-tier parking deck totaling 140,000 square feet. Each level is roughly 23,000 square feet. The ground level will consist of a retail space, mechanical room and planned police station area. The retail space is currently planned to remain unfinished for this project. Civil improvements will include underground utilities and new asphalt pavements and improvements along West Avenue.

The structure will be supported on a pier/grade beam foundation system. Construction will also include cast-in-place concrete columns and post-tensioned concrete slabs. elevator shafts and stairwell structures that will consist of cast-in-place concrete walls extend to the roof level. A stair tower is planned on the north side of the building. An elevator tower with two elevator shafts and a stairwell is planned at the south side of the building. The south elevator tower is to consist of reinforced CMU construction. A structural steel colonnade is planned along the east perimeter of the structure. Reinforced CMU walls are located at the ground level for the mechanical room and Tier 3 of the structure. Earthwork is planned to consist of undercutting the existing fill soils and supporting floor slabs with a minimum of 3 feet of new fill material per the provided geotechnical report.

SCOPE OF SERVICES AND FEES

GTS, Inc. has reviewed the specifications regarding testing frequencies and testing requirements provided by Olsson engineering and Walker Consultants. Based on the review, the parking deck structural plans and our understanding of the construction schedule provided by Nabholz combined with our experience on previous projects, CMT and Special Inspection Services for this project are anticipated to include the following scope:

Earthwork Testing

- GTS will provide engineering support and field staff to evaluate and consult when problematic soil conditions are encountered.
- GTS will provide field technicians to perform field density testing of imported fill soils.
- Perform soil laboratory testing services for proposed fill soils at the project site.
- Undercut and replace 3 feet of new fill within the building pad per project documents

Trips

- Proofroll and/or Subgrade Evaluations by Staff Engineer – 5 total
- Undercut and replace 3 feet of new fill within the building pad as recommended in the Geotechnical Report – 6 trips
- Subgrade and Base Density Testing in Pavement Areas - 7 trips
- Trench Backfill at Utility Street Crossing and Storm Drain Backfill (assuming compacted backfill)– 15 trips
- Ramp and wall backfill – 5 trips
- Soil and Base Samples – 2 proctors with sieve analysis and Atterberg limits tests

Drilled Pier Foundations

The construction schedule details 30 days for foundation pier drilling. We anticipate providing the following:

- Full-time inspection of drilled pier deep foundations by a Staff Engineer or Geologist including verification of plumbness, diameters, lengths, socket embedment and suitable bearing material and additional information as outlined in specification section 31 63 29, Item B
- Inspect pier reinforcing steel cages for number of bars, diameter, size and spacing
- Sample and test plastic concrete per project specifications. Testing of the plastic concrete will include casting of concrete cylinders for testing of compressive strength, testing of its slump, air content, and temperature.

Drilled Pier Inspection and Testing Services

- We understand the schedule for drilled pier installation of 30 working days
- We anticipate providing full-time staff during installation of drilled piers for 30 days
- We estimate concrete placement occurring each day of pier drilling and casting 1 set of cylinders resulting in 30 sets of concrete cylinders

Structural Concrete Inspection and Testing

For budgeting purposes, we have separated the structural concrete at the ground level from the remaining tiers. Additionally, a testing scope and budget for the post-tensioned slabs is outlined on the following page. GTS proposes the following for concrete related inspections and testing:

- Perform observations of structural concrete reinforcing elements for location, number of bars, size and spacing.
- Sample and test plastic concrete per project specifications. Testing of the plastic concrete will include casting of concrete cylinders for testing of compressive strength, testing of its slump, air content, and temperature. Per specifications, 3 sets of cylinders per 100 cubic yards of concrete placed
- Provide on-site curing box for concrete specimens and perform site visits to pick-up concrete specimens for further laboratory compressive strength testing.
- Perform laboratory compressive strength tests on cured concrete cylinders.

Ground Level Structural Concrete - Grade Beams, Walls, Columns

The construction schedule details approximately 30 days of construction for the foundation grade beams and 14 days for construction of the concrete columns. Roughly 1,225 linear feet of foundation grade beams is planned. A total of 39 concrete columns is planned for the ground level.

Trips – Ground Level

- Grade Beams and Pier Caps Foundations – 10 trips for reinforcing steel inspections and 10 trips for concrete field testing casting a total of 10 sets of cylinders
- Concrete Walls and Bumper Walls – 4 trips for reinforcing steel inspections and 4 trips for concrete field testing casting a total of 4 sets of cylinders
- Concrete Columns - 5 trips for reinforcing steel inspections and 5 trips for concrete field testing casting a total of 5 sets of cylinders (8 columns poured per concrete placement)
- Garage Slab on Grade (100 CY) – 1 trip sampling 3 sets of cylinders
- Mechanical Room Slab on Grade – 1 trip and 1 set of cylinders
- Garage Ramp Slab on Grade – 1 trip and 1 set of cylinders
- Retaining Wall at West side of Building - 1 trip and 1 set of cylinders

Structural Concrete - Tiers 2 thru Tier 6

The construction schedule details approximately 60 days of construction to erect each elevated floor. Each level has been divided into two (2) areas. The following information was provided regarding the construction schedule:

- 14 days to install rebar and PT tendons (two (2) separate 7-day durations)
- 14 days to construct and pour concrete 36 columns (two 7-day durations)
- 2 slab pours

Estimated Trips – Tiers 2 thru Tier 6

- Concrete Columns – 2 pours per 7-day period resulting in a total of 4 pours per tier resulting in a total of 24 column pours and 24 sets of cylinders
- Slab Pour-Backs/Infill, Structural Upturn Beam – 3 pours per tier resulting in 15 concrete placements and 15 sets of cylinders.

Post Tensioned Concrete Slab Testing and Inspections

- GTS employees 4 certified Post Tensioning Institute (PTI) inspectors. These inspectors will perform inspections of PT cables and slab reinforcement prior to concrete pours.
- GTS PTI inspectors will observe stressing operations of PT cables and record elongations.
- Provide certified technicians to sample and test plastic concrete per project specifications. Testing of the plastic concrete will include casting of concrete cylinders for testing of compressive strength, testing of its slump, air content, and temperature. Per specifications, 3 sets of cylinders per 100 cubic yards of concrete placed
- Based the project documents and previous experience with Walker Consultants, 9 cylinders per set is required (3 cylinders will be field cured)
- Provide on-site curing box for concrete specimens and perform site visits to pick-up concrete specimens for further laboratory compressive strength testing.
- Perform laboratory compressive strength tests on cured concrete cylinders.

The following was used to develop a budget for the PT slab inspections and testing:

- The construction schedule and structural plans outline two (2) PT slab pours per tier. A total of 11 PT slab pours are planned. Slab pours are roughly 200-300 cubic yards.
- Construction schedule outlines 1 day of PT tendon stressing per slab pour (11 days of stressing operations)

Trips (PT Slabs and Beams)

- Slab pre-pour rebar and PT cable inspections – 11 trips by PTI inspector from GTS
- PT Slab Pours – 11 pours sampling 9 sets of cylinders resulting in a total of 99 sets of cylinders
- PT Stressing operations – 11 full-time days by certified GTS PTI Inspector

Concrete Testing – Civil Items and Pavement Approaches

- Sample and test plastic concrete per City of Fayetteville specifications. Testing of the plastic concrete will include casting of concrete cylinders for testing of compressive strength, testing of its slump, air content, and temperature. 1 set of 5 test cylinders will be cast
- Provide on-site curing box for concrete specimens and perform site visits to pick-up concrete specimens for further laboratory compressive strength testing.
- Perform laboratory compressive strength tests on cured concrete cylinders.

Estimated Trips

- Commercial Driveway Apron on West – 1 trip and 1 set of cylinders
- Colonnade Sidewalk – 3 trips and 3 sets of cylinders
- Sidewalk along the South Side of Building - 2 trips and 2 sets of cylinders
- Curb and Gutter – 3 trips and 3 sets of cylinders
- Transformer Pad and Dumpster Pad – 1 trip and 1 set of cylinders
- Storm Inlet structures – 2 trips

Structural Steel Inspections

- Inspection of structural steel elements by a Certified Welding Inspector including bolted connections
- Observe structural steel related items in accordance with Item B on Sheet S0.01
- A formal report will be generated documenting field inspections

Trips

- North Stair Tower: Structural Steel Observations - 2 trips
- South Stair Tower: HSS Weld Connections and Structural Steel Observations - 2 trips

- Colonnade Structure: Welded Connections and Structural Steel Observations – 3 trips
- Ground Level and Tier 3 Top of CMU Masonry Connection to bottom of Beam and PT Slab – 2 trips

RECOMMENDED ADDITIONAL INSPECTION AND TESTING (Per Sheet S0.3)

Although not requested, GTS is providing a scope to inspect masonry construction and perform testing services. Project structural sheet S0.01 identifies certain items to require verification and special inspection which include masonry construction items and guardrail strand inspections. Detailed inspections will be required considering the vast amount of reinforcing steel present within these walls and full grouting.

Guardrail Strands for the parking deck require additional inspection and testing per project plans. This is outlined on the following page.

Considering the frequency of testing for laboratory cylinders and anticipating the expediency of concrete pours, GTS is recommended a second technician to provide continuous monitoring of concrete placement and discharge of concrete during placement pours.

Masonry Construction Inspections and Testing

- Inspect the installation of reinforcing steel for masonry foundation walls, masonry unit cell for cleanliness, observation of mortar and expansion joints, and performing sampling and testing of grout and mortar.
- Perform laboratory compressive strength tests on cured grout and report results.
- We anticipate the following for the South Stair Tower:
 - Anticipate low-lift-grouting resulting in 3 grout lifts per pour. GTS to inspect rebar prior to grout placement resulting in 7 tiers and the roof level with 19 trips
 - Estimate 1 set of grout prisms per tier – 8 total grout sets
- We anticipate the following for the Mechanical Room and planned Police Area:
 - 5 trips to inspect masonry construction and reinforcing steel
 - 3 samples of grout obtained for grout prisms
- We anticipate the following for the Tier 3 West CMU Walls:
 - 3 trips to inspect masonry construction and reinforcing steel
 - 1 sample of grout obtained for grout prisms

Guardrail Strands Inspections

- Verify material and inspect placement of strands
- Continually observe stressing to seat wedges and stressing forces
- Perform periodic inspection of corrosion protection and sealing of sleeves in columns.

Trips

- Estimate 10 hours of inspections for stressing operations for the project
- Assume stressing per level will occur on separate days resulting in 10 site visits
- Provide summary report of stressing and field observations

Continuous Observation During Concrete Slab Pours

Structural Sheet S0.01 identifies required continuous inspections of concrete placement for proper application and techniques. Considering the sampling frequency of concrete (3 sets per 100 cubic yards) and our past experience on large concrete placement pours, a second technician is typically required to provide continuous observation. For concrete slab pours, we estimate a second technician will be required on-site for 4-5 hours to perform this observation.

We recommend a budget of \$3,250 be allocated for this task.



COST - PARKING STRUCTURE

Based on the information outlined in this proposal, GTS, Inc. has prepared a budget for Testing and Special Inspection Services for this Parking Garage are summarized in the table below. We have appended a breakdown of these fees tabulated on the following pages.

Item	Amount
Earthwork Testing	\$4,800
Drilled Piers Inspection and Concrete Testing	\$28,902
Structural Concrete Testing and PT Inspections	\$48,723
Civil Related Concrete Testing	\$3,200
Structural Steel Inspections	\$3,270
Requested Scope - Subtotal	\$88,895
Additional Recommended Scope	
Recommended Masonry and Guardrail Strand Inspections (required by structural drawings)	\$8,635
Additional Staffing for Continuous Observation during large concrete placement pours	\$3,250
Total	\$100,780

BY  _____

Date 1/13/2022

GTS, Inc.

BY _____

Date _____

Mayor Lioneld Jordan



**TESTING BUDGET
 REQUESTED SPECIAL INSPECTIONS AND TESTING SERVICES
 DOWNTOWN PARKING DECK
 CITY OF FAYETTEVILLE
 FAYETTEVILLE, ARKANSAS**

FIELD SERVICES	Units	Qty.	Unit Price	Extension
Soil and Base Density Technician	hourly	50	\$50.00	\$2,500.00
Staff Engineer-Proofrolls/Subgrade Evaluation	hourly	10	\$90.00	\$900.00
Reinforcing Steel Inspections	hourly	120	\$90.00	\$10,800.00
Concrete Field Technician	hourly	230	\$50.00	\$11,500.00
Post Tension Slab Inspections	hourly	45	\$90.00	\$4,050.00
PTI Certified Staff - Tendon Stressing	daily	11	\$800.00	\$8,800.00
Structural Steel Inspections	hourly	27	\$120.00	\$3,240.00
Staff Engineer - Drilled Piers	hourly	270	\$90.00	\$24,300.00
Trips (6 miles round trip - Fayetteville Lab)	each	343	\$3.40	\$1,166.20
Subtotal: Field Inspection and Testing				\$67,256.20

LABORATORY TESTING	Units	Qty.	Unit Price	Extension
Standard Proctor	each	2	\$140.00	\$280.00
Atterberg Limits	each	2	\$65.00	\$130.00
Sieve Analysis	each	2	\$65.00	\$130.00
Soil Sample Preparation	each	2	\$75.00	\$150.00
Curing, Stripping, Storing Concrete Cylinders	each set	180	\$30.00	\$5,400.00
Compressive Strength of Concrete Cylinders	each	949	\$11.00	\$10,439.00
Subtotal: Laboratory Testing				\$16,529.00

PROJECT MANAGEMENT/REPORT FEES	Units	Qty.	Unit Price	Extension
Professional Engineer Review	hourly	20	\$120.00	\$2,400.00
Report Preparation (Concrete, Density)	each	271	\$10.00	\$2,710.00
Subtotal: Project Management & Reporting				\$5,110.00

REQUESTED SCOPE TOTAL				\$88,895
MASONRY & GUARDRAIL STRANDS INSPECTIONS (see following page)				\$11,885



ADDITIONAL RECOMMENDED SCOPE ITEMS
 ITEMS OUTLINED IN STRUCTURAL DRAWINGS
 DOWNTOWN PARKING DECK
 CITY OF FAYETTEVILLE
 FAYETTEVILLE, ARKANSAS

FIELD SERVICES	Units	Qty.	Unit Price	Extension
Masonry Inspections	hourly	47	\$90.00	\$4,230.00
Grout Field Technician	hourly	15	\$57.00	\$855.00
Guardrail Strand Stressing	hourly	10	\$75.00	\$750.00
Continuous Concrete Placement Observations	hourly	65	\$50.00	\$3,250.00
Trips (6 miles round trip - Fayetteville Lab)	each	50	\$3.40	\$170.00
Subtotal: Field Inspection and Testing				\$9,255.00

LABORATORY TESTING	Units	Qty.	Unit Price	Extension
Compressive Strength of Grout Prisms	each	44	\$25.00	\$1,100.00
Curing, Stripping, Storing Grout Prisms	each set	11	\$30.00	\$330.00
Subtotal: Laboratory Testing				\$1,430.00

PROJECT MANAGEMENT/REPORT FEES	Units	Qty.	Unit Price	Extension
Professional Engineer Review	hourly	8	\$120.00	\$960.00
Report Preparation (Grout)	each	24	\$10.00	\$240.00
Subtotal: Project Management & Reporting				\$1,200.00

MASONRY INSPECTION TOTAL				\$11,885
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