

AMIRI ENGINEERING CORP.

Geotechnical, Materials & Environmental Engineers

October 14, 2024

Mr. Gerald Smith, Facilities Director
The City of Madison
100 Hughes Road
Madison, Alabama 35758

Subject: Proposal to Provide Special Inspections and
 Construction Materials Testing Services
 Proposed one-story project for Visitor locker room
 Multi-Purpose Stadium-Toyota Field
 Madison, Alabama
 AMIRI Proposal No. P244617

Dear Mr. Smith:

Thank you for the opportunity to submit this proposal to provide Special Inspections and Construction Materials Testing Services for the proposed one-story basement project for the visitor locker room project at Multi-Purpose Stadium in Madison, Alabama. This proposal has been prepared in two parts as follows:

Part I: Budget for Construction Materials Testing Services and Special Inspection Services.
Part II: Schedule of fees for Special Inspections and Construction Materials Testing Services.

We are looking forward to continuing to work with you on this project. If you have any questions regarding the information contained herein, or we may be of further assistance, please contact us at your convenience.

Sincerely,

AMIRI ENGINEERING CORPORATION



Nasser Amiri, MSE, P.E.
Senior Engineer

PART 1

BUDGET FOR CONSTRUCTION MATERIALS TESTING AND INSPECTION

In this part, we have provided a detail of the tests and services that were reviewed on the project specifications and plans and the Lump Sum cost for these services:

1. Subgrade observation and testing of earthwork within the entire project site.
2. Concrete testing.
3. Foundation Bearing Soil Observation and Testing.
4. Masonry Block fill and Mortar Testing.
5. Reinforced Steel Placement inspection for all structural and pavements elements.
6. Pre-placement observation of the slabs, footings, reinforcement steel, pavements, and walls.
7. Structural inspection, visual observation of welds, and testing of the bolt torques.
8. Asphalt and Basestone Sampling and Testing

Based on our experience with similar construction and review of the project plans and specifications, we are providing the following budget.

1.0 Site preparation observations, including Undercutting and Earthwork Testing

The following is a brief outline of the anticipated soil testing and monitoring services for the subject project.

- a. Obtain samples and perform appropriate laboratory testing, as necessary, on materials proposed for use as fill, backfill, and slab or paving sub grade. Tests include Moisture-Density Relationship by Standard Proctor Method (ASTM D 698) or Modified Proctor Method (ASTM D 1557).
- b. Observe and document subgrade conditions prior to soil fill or aggregate base course placement, including proof roll testing by the contractor with an approved vehicle.
- c. Observe placement of engineered fill and backfill (including backfill in utility trenches). Perform in-place tests for moisture content, density and degree of compaction. Where deficiencies are noted during fill or backfill placement, we notify the contractor and observe remedial actions, including reworking and recompacting materials.
- d. Provide documentation of events in the field and notify the contractor, Owner and other appropriate persons upon recognition of deficiencies.

Based on review of the Schedule and plans, earthwork will be completed in about 8 to 10 weeks. Based on review of the plans, it is assumed that up to 4 feet of fill placement will be required to reach the proposed subgrade elevations in the proposed building expansion area and In addition, we assume that proofrolling operations and site visits, during the earthwork operations, will require about 5 trips by the Registered Geotechnical Engineer (PE).

We assume that an Engineering Technician will visit the job site for Earthwork testing every day on an on-call basis. Furthermore, the subgrade soil prior to placement of fill, in any area that requires to be filled or receives pavement and building will be observed for the suitability of the existing soils by a Registered Engineer. The Registered Engineer will also observe proofrolling operations by appropriate Equipment, as specified by the project specifications.

2.0 Foundation Inspection

Footing bearing soil should be tested to verify that proper bearings material is reached prior to concreting the footing excavations. The foundation inspection time frame would depend on the contractor's schedule.

3.0 Concrete Testing

Based on review of the plans, we assume that project specification requires that one (1) set of concrete cylinders (4 specimens per set) be made from each 50 cubic yards of each concrete mix design placed in any one day; one (1) specimen tested at seven (7) days, two (2) specimens tested at 28 days, and one (1) specimen retained in reserve for later testing, if required. For the purpose of this proposal, we assume that a total of 40 sets of concrete cylinders (160 cylinders) will be cast at the subject project site.

4.0 Reinforcement Steel Inspection

We understand that the subject structure will be a steel framed building. Reinforcement Steel in footings, Floor Slabs, retaining walls and all concrete structures will require observation. We assume that a total of 30 site visits by professional Engineer will be required for Reinforcement Steel and Structural observation.

4.0 Structural Steel Inspection and Testing

We understand that structural members will primarily be Structural Steel Sections and Truss Joists. Based on a review of the plans, the connections will consist of Field Welds, Moment Welds, and bolted connections. Based on our experience with similar construction, we assume that these inspections can be performed in 40 to 60 hours.

- a. The bolted and welded connections will all be observed to determine if the bolt or weld size and length meet that shown on the plans and if the weld quality meets the project requirements. The following will be provided:
- b. Observation of connections between individual framing members.
- d. Perform additional testing in accordance with contract documents if maximum allowable rejection rates are exceeded.
- e. Provide documentation of events in the field and notify the contractor, and other appropriate persons upon recognition of deficiencies.

Basestone Testing

For the purpose of this proposal, we assume that Basestone Testing at the project site testing will include the following:

1. Proofrolling observation of the Basestone
2. Testing of Basestone for Compaction.

Asphalt Testing

The following is a brief outline of testing and observation of Asphaltic pavement, should that be requested. Routine asphalt placement observations at the subject project site include observation and documentation of temperature, placement and compaction operations during asphalt placement operations. During the placement operations, rolling patterns will also be established during the initial placement procedures for both binder course as well as wearing surface placement. For the purpose of this proposal, we assume that asphalt placement will be conducted in four (4) working days. We also assume that binder course will be placed in two (2) working day and asphaltic wearing course will be placed in two (2) days.

Quote

Based on the testing services outlined above and unit fees enclosed in the subsequent sections, our costs for performing construction materials testing and special inspection services, as outlined in this proposal, will be \$ 48,000.

PART II
SCHEDULE OF SERVICES AND FEES
FOR
CONSTRUCTION MONITORING AND MATERIALS TESTING

FIELD TESTING PERSONNEL

PROJECT ENGINEERING TECHNICIAN

Engineering Technician	\$ 60.00/hour
Senior Engineering Technician.....	\$ 70.00/hour
Staff Engineer/Geologist.....	\$ 85.00/hour
Senior Project Engineer/Manager, P.E.	\$120.00/hour
Master of Science in Civil/Geotechnical Engineering, 30 years of Experience and Registered Engineering License	

Concrete and Aggregate Testing

Laboratory compressive strength testing of concrete cylinders, grout and mortar
 Cubes, Flexural strength testing of beams:

• Concrete sampling and testing, per set of 4, includes slump, air, pick up, mold....	\$195.00
• Concrete Sampling and Testing, per set of 5, includes pick up, mold.....	\$215.00
• Concrete Sampling & Testing, per set of 6, includes Pick up, molds.....	\$240.00
• Flexural strength tests on beams, includes, sampling, pick up, per set of 4...	\$380.00
• Slump Test,.....	\$ 25.00
• Air Content Test, Pressure Method.....	\$ 25.00
• Air Content Test, Volumetric Method.....	\$ 30.00
• Mortar Sampling & Testing, includes pick up, per set of 3.....	\$140.00
• CMU/Grout Prism sampling & testing, including, pick up, per set of 3.....	\$190.00
• Unit weight determination.....	\$ 25.00
• Swiss/Schmidt Hammer, per day.....	\$ 30.00
• Floor Flatness/Levelness, per pour, includes technician time and equipment rental.....	\$500.00
• Concrete Coring, 3" core, per inch of depth.....	\$ 6.00
• Concrete Core, 4" core, per inch of depth.....	\$ 8.00
• Concrete Core, 6" core, per inch of depth.....	\$ 10.00
• Mix Design Review.....	\$ 120.00

SOIL TESTING

Moisture/Density Relationship	
a. Standard Proctor Compaction Method (ASTM D 698), per sample.....	\$110.00
b. Modified Proctor Method (ASTM D 1557), per sample.....	\$140.00
Field Density and Moisture Content Testing, Using Nuclear Gauge, per test.....	\$ 30.00
Natural Moisture Content Determination, per test.....	\$ 7.00
Atterberg Limit Determination, per sample.....	\$ 75.00
Material Finer than No. 200 Sieve (washed), per sample.....	\$ 75.00
Mechanical Grain Size Analysis, per sample.....	\$ 95.00

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Madison, Alabama

Dynamic Cone Penetrometer Test Rental, per day.....	\$ 10.00
Collect Bulk Samples for Proctor test.....	\$ 25.00
Sieve and hydrometer analysis, ASTM D422.....	\$150.00
Specific gravity, ASTM D854.....	\$ 55.00
Unit weight, dry, undisturbed sample.....	\$ 55.00
PH test,.....	\$ 25.00
Remolding samples to specified conditions.....	\$ 90.00
Unit Weight, split spoon samples.....	\$ 30.00
California Bearing Ratio.....	\$600.00

ASPHALT TESTING

Field density Tests,.....	\$ 25.00
Nuclear Density Gauge Rental, per hour.....	\$ 6.00
Asphalt Core thickness determination, cut cores and measure thickness.....	\$ 45.00
Measurement of basestone thickness,.....	\$ 20.00
Bulk Specific Gravity of cores,.	\$ 45.00

STRUCTURAL STEEL

Calibrate Torque Wrench rental, per day,.....	\$ 25.00
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TRIP CHARGES

Trip Charge, per round trip.....	\$ 55.00
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GENERAL COSTS

The personnel rates will be billed from portal to portal, with overtime billed for time in excess of eight (8) hours per day or for work performed on weekends, nights (between 12 AM and 6 AM), or holidays at a rate of 1.5.