

**Director of Schools**

David C. Murrell

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**Board of Education**

Diane Bain  
Fred Goins  
Scott Helton  
Vandy Kemp  
Robby Kirkland  
Phil Porter

**To:** Budget Committee, Blount County Commission  
**From:** Troy Logan, CFO  
**Date:** 7/14/2023  
**Re:** Fund 177 – Budget Increase for Roof Architect & Consulting Services, FY 23-24

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The Board of Education respectfully submits a Budget Increase resolution, attached, for estimated roof architect and consulting services for the following projects.

Friendsville Elementary Gymnasium new roof, \$28,000

Walland Elementary Gymnasium new roof (lockers/bathrooms section), \$25,000

Sincerely,

A handwritten signature in blue ink that reads "Troy Logan".

Troy Logan, CFO



July 12, 2023

James Duke  
Facilities & Capital Projects Supervisor  
Blount County Schools

RE: Friendsville Elementary School – Gym Roofs - Roof Design, Specification, and Project Monitoring

Dear Mr. Duke,

We are pleased to submit our quotation to conduct Roof Consulting Services for Blount County Schools.

The following scope of work will be performed:

**Asbestos Survey:**

- Core cuts will be taken, as needed, to determine the composition and number of existing roofing systems.
  - Core cuts provide accurate information on the number of plies, type and thickness of insulation and coatings, and the type and condition of structural decking that supports the existing roof system. They provide the most tangible information for roof system diagnostics. When core cuts are performed the following services will be provided:
    - A representative number of core cut samples for each roofing section or more as needed.
    - Determination of the condition of roofing system components
- CAD Drawings - Provide CAD drawings of each roof section.
  - Drawings will be provided to scale.
  - Perimeter details will be identified.
  - Primary Roof Penetrations will be categorized by type and their locations will be marked.
  - The existing roof system composition will be detailed.

- A report with test results will be provided including photos and a CAD drawing with core locations detailed.
  - Independent lab results will be included.

EPA regulation 40 CFR Part 763: specifies the minimum number of samples to be taken of each homogenous area of suspected ACM based on the type and quantity of the material as illustrated in the following table:

| Size of Homogeneous Area       | Minimum Number of Samples to be Collected | Recommended Number of Samples to be Collected |
|--------------------------------|---|---|
| Less than 1,000 sq. / ft.      | 3   | 9   |
| Between 1,000 & 5,000 sq./ ft. | 5   | 9   |
| Greater than 5,000 sq. / ft.   | 7   | 9   |

**Homogeneous Area** - In accordance with Asbestos Hazard and Emergency Response Act (AHERA) definitions, an area of surfacing materials, thermal surface insulation, or miscellaneous material that is uniform in color and texture.

**Structural Evaluation:**

1. Visit the site and access the building.
2. Observations should be made from inside the building and on the roof. When r o o f access is not possible, use means necessary to make observations from the perimeter (i.e., ladder or lift).
  - a. Follow OSHA recommendations for all work, safety devices, and working at heights.
  - b. Use good judgment and be aware of site and weather conditions that could make work hazardous.
  - c. BMC shall provide means for working at heights unless otherwise agreed upon.
  - d. Obtain all available documents regarding current roof structural systems including As-Built and Construction drawings.
2. Survey, thoroughly review, and document the supporting structure of each included roof area as follows:
  - a. Make observations as to the existing condition of the building. Report immediately any conditions of concern. Any existing conditions which require assumptions on the part of the Consultant to perform the scope of work need to be discussed as early as possible.
  - b. Take measurements for the purpose of confirming information on structural drawings and performing structural analysis.
  - c. The scope for this project includes an analysis of the following:
    - i. Existing Roof Panel
    - ii. Roof Purlins
    - iii. Roof Mainframe as necessary (dependent on project SOW and building type)
  - d. This scope does not include an analysis of the following:

- i. Columns
  - ii. Walls
  - iii. Footings
3. Perform Structural Analysis of the components included in the scope according to current building code in the state, province, or municipality where the project is located. Analysis should include:
  - a. Determine maximum allowable gravity load which may be added permanently to the roof.
  - b. Determine maximum purlin midspan deflection under the maximum allowable gravity load for roofs under 1:12 slope.
  - c. Check purlins against negative deflection for current code level wind loads.
4. Manufacturer will provide:
  - a. Weight of the proposed roofing replacement/recover materials.
5. Review of findings with Client after the structural analysis is performed to discuss the results.
6. Signed and sealed report on BMC's letterhead. This report should include the following information:
  - a. If existing conditions of concern are found during the site visit, provide a brief written description of these concerns with relative pictures (see 2.a).
  - b. A statement of the gravity load (psf) that can be added to the existing roof (see 3.a).
  - c. Roof plan noting purlin section type, spacing, span, and any areas with deficiencies.
  - d. Pictures of roof structure, especially any areas of damage or corrosion.
    - i. Digital copy of all pictures taken during the site visit(s).
  - e. Provide a written description of the following potential solutions based on the analysis results and review meeting(s) with Garland (see 5):
    - i. When the roof is found to have additional capacity for the proposed retrofit roof system:
      - Purlin Reinforcement Retrofit (PRR) such as Top Hat or Roof Hugger
      - Low slope roof system such as modified bitumen or single ply.
    - ii. When the roof is found to be deficient to carry the proposed additional weight, but structural modifications are considered:
      - Purlin Reinforcement Retrofit (PRR). Utilize Top Hat or Roof Hugger engineering reports to determine this.
      - Purlin Modifications (PMOD), provide summary scope of potential solutions that are available.
      - Mainframe Modifications (MFMOD), provide summary scope of the potential solutions that are available.
      - Tear off and replacement of the existing roof panels. Include requirements for purlin strapping or lateral bracing as required.
      - Provide a design services proposal for the above structural modifications.

## **Structural Remediation Services:**

Structural designs are based upon a visual survey of existing conditions and listed assumptions of existing components. The repair details are limited to the components specifically noted in the design documents and are not to be used on areas of the structure not specifically noted in the design documents.

Renovation of existing structures requires thorough coordination of the contract documents with existing conditions. The contractor must verify all relevant existing conditions, dimensions, and details prior to beginning construction. report any deviations from conditions or dimensions shown on the contract documents to the structural engineer of record for review of the design and possible revision of the contract documents.

The nature of structural demolition and stabilization is inherently uncertain. The exact condition and capacity of each structural element cannot be verified prior to the commencement of work.

As a result, it is imperative to report any discrepancies between 'the contract documents and actual field conditions, as well as any element of questionable structural integrity immediately to the architect and structural engineer of record for review.

Verify all existing conditions, dimensions, and elevations before starting work. notify the structural engineer of record in writing of any discrepancy.

The contractor is solely responsible for the design, adequacy, and safety of erection bracing, shoring, temporary supports, and all other means, methods, techniques, sequences, and procedures of construction.

Review of the submittals and/or shop drawings by the structural engineer of record is only for general conformance with the contract documents and does not relieve the contractor of the responsibility to review and check shop drawings before submittal to the structural engineer of record. The contractor must review and stamp all submittals prior to submission. The contractor remains solely responsible for errors: and omissions associated with the preparation of shop drawings as they pertain to member sizes, details, and dimensions specified in the contract documents. do not begin fabrication until shop drawings are completed and reviewed by the structural engineer of record.

Do not make shop drawings using reproductions of the contract documents or referencing the contract documents.

## **Specifications and Project Management**

### **Phase I**

- Meet with owner representative and facility directors on site to determine working conditions, limitations, expectations, general concerns, and review financial parameters.
- Discuss client's goals and desires for sustainable building solutions.
- Discuss required permits from the City, County, State Governments.

- Discuss existing roof system evaluation procedure (ie. Asbestos Testing Requirements, R-Value Requirements, Structural Concerns)
- Review multiple roofing manufacturer guidelines and procedures.
- Establish a project specific roofing budget.
- Review payment performance bond requirements with representatives.
- Perform an inspection of the desired roof area and produce a report with data and photos.
- Review solution options with the owner and determine if the project will proceed.

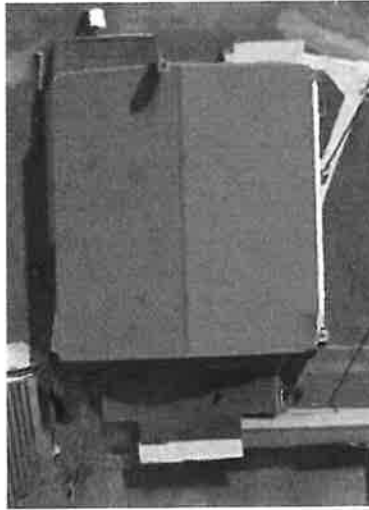
## **Phase II**

- Project Team will generate a detailed performance-based specification. \*\*Architectural stamped plans and drawings complete with wind-uplift calculations, snow calculations, drainage calculations, and project specific details can be produced *upon request – cost not to exceed \$5,000.00.*
- Present project specifications to the owner and make any necessary changes to the specifications.
- If the project is to progress, the necessary steps will be taken to proceed with a mandatory pre-bid.
- Pre-bid conference will be held on site to familiarize the contractors with facility and campus requirements. Here we will address any questions or concerns of the contractors.
- Issue any addenda if required.
- Review the contractor's bid results with the client and make recommendations.

## **Phase III**

- Organize a pre-construction conference on site with owner representatives, awarded contractor, material manufacturer, and BMC Project Team.
- Provide architectural schedule of values that will be submitted by the awarded contractor.
- Start project – BMC will perform site inspections and generate written progress reports complete with photos. (Weekly and a Final Inspections will be included. Additional Progress Inspections can be performed upon request.)
- Review any progress payment submitted by the contractor and approved if justified.
- Once the project is completed, owner representatives, contractor, material manufacturer, and BMC Project Team will meet on site to determine if a project punch list is required.
- Oversee the completion of punch list requirements and provide a written report with photos.
- The contractor is required to furnish BMC with the specified manufacturer's warranty.

**The following scope will be performed for the sum of:**



**Structural Evaluation for Roof Hugger System:**

- ***\$5,850.00***

**Structural Remediation Services:**

- ***To be determined based on Structural Evaluation Findings***
- ***Not to exceed \$5,000.00***

**Field Services and Roof Design and Specification:**

Phase III Consulting Friendsville (based on \$150K estimate although this may be higher since we are going longer lasting metal)

1. Conduct Pre-construction meeting and project monitoring duties: TBD on Final Bid Numbers. Price based on 4% of successful bidder less Phase I & II cost (\$20,850.00) minimum.
2. Price not to exceed: \$28,000.00

Thank you again for the opportunity to assist you with consulting services. Please call me directly with any questions you may have.

Sincerely,

Nicholas T. Losh  
President



July 12, 2023

James Duke  
Facilities & Capital Projects Supervisor  
Blount County Schools

RE: Walland Elementary School - Roof Design, Specification, and Project Monitoring

Dear Mr. Duke,

We are pleased to submit our quotation to conduct Roof Consulting Services for Blount County Schools.

The following scope of work will be performed:

**Moisture Diagnostic Surveys:**

- Perform a Moisture Diagnostic Scan on the designated roof sections.
  - Moisture Diagnostic Scans provide a powerful tool in the process of identifying roof areas with moisture content. By evaluating the results, you can establish whether the water infiltration is localized or is widespread across an entire roof area.
  - Nuclear scanning counts hydrogen molecules by emitting neutrons, the higher numbers will determine the amount of moisture in roof assembly.
  - Nuclear scans are required when more than one roof is present in the assembly as well as ballasted roof systems.
  - Infrared technology measures temperature differentials. Wet insulation retains heat long after the roof has cooled, and the camera will show heat signatures that are much higher than the signature of dry insulation. *Infrared will only read the top assembly of insulation. Meaning, if there is more than one roof, heat signatures will only be detected on the top roof.*
    - Reports containing all the findings, as well as the methods employed while completing the scan.
      - Confirm the condition of all roof areas by cross-referencing data with photographs.
    - Readings taken from a moisture meter are used to verify scan results.
    - Outlines of wet areas will be painted using highly visible marking paint.



- Core cuts provide accurate information on the number of plies, type and thickness of insulation and coatings, and the type and condition of structural decking that supports the existing roof system.
  - A representative number of core cut samples for each roofing section or more as needed.
  - Determination of the condition of roofing system components
- Drawings of each roof area will indicate the location of each wet area.
  - Detailed drawings will be provided.
  - Perimeter details will be identified.
  - Penetrations will be categorized by type and their locations will be marked.
  - The existing roof system composition will be detailed.

### **Asbestos Survey:**

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**Homogeneous Area** - In accordance with Asbestos Hazard and Emergency Response Act (AHERA) definitions, an area of surfacing materials, thermal surface insulation, or miscellaneous material that is uniform in color and texture.

**Specifications and Project Management**

**Phase I**

- Meet with owner representative and facility directors on site to determine working conditions, limitations, expectations, general concerns, and review financial parameters.
- Discuss client’s goals and desires for sustainable building solutions.
- Discuss required permits from the City, County, State Governments.
- Discuss existing roof system evaluation procedure (ie. Asbestos Testing Requirements, R-Value Requirements, Structural Concerns)
- Review multiple roofing manufacturer guidelines and procedures.
- Establish a project specific roofing budget.
- Review payment performance bond requirements with representatives.
- Perform an inspection of the desired roof area and produce a report with data and photos.
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**Phase II**

- Project Team will generate a detailed performance-based specification. **\*\*Architectural stamped plans and drawings complete with wind-uplift calculations, snow calculations, drainage calculations, and project specific details can be produced *upon request* – cost not to exceed \$5,000.00.**
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**Phase III**

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- Oversee the completion of punch list requirements and provide a written report with photos.
- The contractor is required to furnish BMC with the specified manufacturer's warranty.

**The following scope will be performed for the sum of:**



**Field Services and Roof Design and Specification:**

Phase III Consulting Walland (based on \$500K estimate)

1. Conduct Pre-construction meeting and project monitoring duties: TBD on Final Bid Numbers. Price based on 4% of successful bidder less Phase I & II cost (\$15,000.00) minimum.
2. Price not to exceed: \$25,000.00

Thank you again for the opportunity to assist you with consulting services. Please call me directly with any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nick T. Losh'. The signature is written in a cursive, flowing style.

Nicholas T. Losh  
President