



July 11, 2023

Mr. Tony Guigli
Project Manager
Building Department
333 Washington Street
Brookline, MA 02445

Re: John R. Pierce School Project
Designer Services Contract Amendment No. 6

Dear Mr. Guigli,

LeftField has reviewed Designer Contract Amendment No. 6 presented by Miller Dyer Spears (MDS) for extended basic services for Design Development, Construction Documents, Bidding, Construction Administration, Closeout and Reimbursable Consultants Services in the total amount of \$17,267,439.00. Of this total, \$16,240,869.00 is for MDS' services (including geothermal) and the remaining \$1,026,570.00 is an allowance for the Reimbursable Consultants' fees which are billed on an "as used" basis. The costs presented in Amendment No. 6 is below the Total Project Budget approved by the MSBA and the Town of Brookline. After an extensive review previously provided under separate, Leftfield believes the fees presented are fair and reasonable and slightly below the MSBA average for similar services.

The scope of services are required and are fair and reasonable. LeftField recommends that the Town of Brookline accept Designer Contract Amendment No. 6 in the amount of \$17,267,439.00

Should you have any questions regarding this recommendation of approval, please contact me.

Sincerely,

Lynn Stapleton, AIA, LEED AP B D + C

Attachment: MDS Designer Contract Amendment 6

Cc: Jim Rogers, LeftField, LLC
Jennifer Carlson, LeftField, LLC
Adam Keane, LeftField, LLC
Will Spears, Miller Dyer Spears, Inc.
Margret Clark, Miller Dyer Spears, Inc.

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 6

WHEREAS, the TOWN OF BROOKLINE (“Owner”) and MILLER DYER SPEARS, INC. (the “Designer”) (collectively, the “Parties”) entered into a Contract for Designer Services for the Feasibility Study and Schematic Design Phases for the John R. Pierce Elementary School Project (Project Number 201800460040) on January 26, 2021, (“Contract”). The John R. Pierce Elementary School is located at 50 School Street, Brookline, MA 02445; and

WHEREAS, the scope of this work is summarized in the attached Miller Dyer Spears (MDS) Proposal, revised March 1, 2023 is for extended basic services as outlined per Designer Services Contract and the approved Total Project Budget.

WHEREAS, Contract Amendment No. 1 was approved by the Town of Brookline on August 10, 2021; and

WHEREAS, Contract Amendment No. 2 was approved by the Town of Brookline on September 14, 2021; and

WHEREAS, Contract Amendment No. 3 was approved by the Town of Brookline on January 11, 2022; and

WHEREAS, Contract Amendment No. 4 was approved by the Town of Brookline on June 29, 2022; and

WHEREAS, Contract Amendment No. 5 is scheduled for approval by the Town of Brookline on July 11, 2023; and

WHEREAS, effective as of July 11, 2023, the parties wish to amend the contract, as amended:

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes this Contract Amendment No. 6 for the total value of **\$17,267,439.00**. The Miller Dyer Spears’ Amendment is for extended basic services as outlined per Designer Services Contract, the approved Total Project Budget and the attached MDS Proposal, revised March 1, 2023. The Designer is herein authorized to commence the services outlined in this Amendment, pursuant to the terms and conditions set forth in the Contract, as amended.
2. For the performance of services required under the Contract, as amended, the Designer shall be compensated by the Owner in accordance with the following Fee for Basic Services:

Fee for Basic Services	Original Contract	Previous Amendments	Amount of This Amendment	Total of All Amendments
Feasibility Study/Schematic Design Phase	\$1,294,466	\$ 170,652.11	\$ 0	\$ 1,465,118.11
Design Development Phase	\$ 0	\$ 0	\$ 3,705,919	\$ 3,705,919
Construction Documents Phase	\$ 0	\$ 0	\$ 6,229,098	\$ 6,229,098

Bidding Phase	\$ 0	\$ 0	\$ 394,247	\$ 394,247
Construction Phase	\$ 0	\$ 0	\$ 5,046,358	\$ 5,046,358
Completion Phase	\$ 0	\$ 0	\$ 394,247	\$ 394,247
Printing (Over Min.)	\$ 0	\$ 0	\$ 0	\$ 0
A/E Reimbursable Services	\$ 0	\$ 0	\$ 746,000	\$ 746,000
HAZMAT Services	\$ 0	\$ 0	\$ 173,157	\$ 173,157
Geotechnical/Geo-Environmental	\$ 0	\$ 0	\$ 509,883	\$ 509,883
Site Survey	\$ 0	\$ 0	\$ 54,780	\$ 54,780
Traffic Studies	\$ 0	\$ 0	\$ 13,750	\$ 13,750
Total Fee	\$1,294,466	\$ 170,652.11	\$17,267,439	\$18,732,557.11

This Amendment is extended Architectural and Engineering basic services for the Pierce School.

3. The Construction Budget shall be as follows:

Original Budget:	<u>\$168,022,660</u>
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Amended Budget _____

4. The Project Schedule shall be as follows:

Original Schedule: (based on 6/1/23 DD start) Substantial Completion – 8/16/27

Amended Schedule

5. This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract, as amended. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract, as amended, shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract, as amended, remain in full force and effect.

IN WITNESS WHEREOF, the Owner, with the prior approval of the Authority, and the Designer have caused this Amendment to be executed by their respective authorized officers.

OWNER:

TOWN OF BROOKLINE

(print name)

(print title)

By: _____
(signature)

Date: _____

DESIGNER:

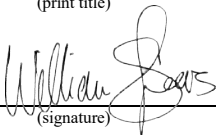
MILLER DYER SPEARS, INC.

William Spears

(print name)

Principal

(print title)

By: 

(signature)

Date: July 11, 2023



February 16, 2023
Revised March 1, 2023
Revised July 6, 2023

Jim Rogers, Principal
LeftField
101 Federal Street, Suite 700
Boston, MA 02110

RE: Pierce School, Brookline
Proposal for Continuation of Services

Dear Jim,

MDS Architects respectfully submits this proposal for continuation of Architectural and Engineering Services for the Pierce School in Brookline. ~~We are submitting this proposal in advance of the Town vote scheduled for May 23, 2023. We understand that acceptance of this proposal is contingent on a successful Town vote.~~

Project Schedule

We propose the following schedule, which generally aligns with the Construction Manager's schedule.
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- | | |
|-----------------------------------|----------|
| • DD drawings to estimator | 19 weeks |
| • DD cost reconciliation complete | 4 weeks |
| • VE complete and DD complete | 2 week |

Total DD	25 weeks
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- | | |
|--|----------|
| • Early release documents for demo and site enabling | 3 weeks |
| • 60% CD to estimator | 14 weeks |
| • 60% CD reconciliation complete | 4 weeks |
| • 60% CD VE complete and document update | 1 week |
| • 90% CD to estimator | 12 weeks |
| • 90% CD reconciliation complete | 4 weeks |
| • 90% CD VE complete and document update | 1 week |
| • CD ready for bid | 5 weeks |

Total CD	44 weeks
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Early Bid Package

One bid package for “Demolition and Site Enabling” will be issued approximately three weeks after the submittal of the Design Development package to the MSBA.

Assumed dates for the Construction phases are:

- Construction start - early package Mid-February, 2024
- Start of full construction February, 2025
- Substantial Completion August 16, 2027

Fee Proposal

Base Fee	
Design Development	\$3,705,919
Construction Documents	\$6,229,098
Bidding	\$394,247
Construction Administration	\$5,046,358
Closeout	\$394,249
Base Fee Subtotal	\$15,769,869
Fee for Geothermal Well Field Design in the Playground	\$471,000
Total Fee with Geothermal Well Field Design	\$16,240,869

ARE

Reimbursable Expenses			
Furniture and Equipment Selection and Procurement	Stefura	Lump Sum (if authorized by Town)	\$165,000
Technology Procurement	GGD	Lump Sum	\$35,200
Hazardous Materials Abatement	PEER	Lump Sum: T&M Allowance for site investigations:	\$66,255 \$19,342
HazMat Construction Phase Testing	UEC	T&M Allowance	\$87,560
Geotechnical Engineering	Lahalaf	Lump Sum: T&M allowance for CA based on 250 site visits:	\$55,473 \$380,710
Geothermal Test Well	GEI	Lump Sum	\$73,700
Site Survey – Playground & School Street	Feldman	Lump Sum	\$54,780
Traffic	Vanasse	Lump Sum	\$13,750
LEED - USGBC Expenses	USGBC	Allowance	\$19,800
Historic Building Brick Testing	RDH	T&M Upset Limit	\$19,250
Whole Building Air Tightness Test CA Phase	RDH	T&M increased to establish Upset Limit)	\$35,750
Total Reimbursables (w/o FF&E)			\$1,026,570

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AHM

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AGEO

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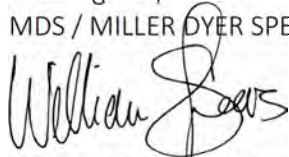
Assumptions and Qualification

- Site Investigations
 - A test pit and backfill/repair for geotechnical investigation at the Historic Building perimeter wall and for the mast arm street signal at School Street will be done by the CM, and is excluded from this scope
 - This proposal does not include trenching in School Street to verify existing utility locations, if needed; we are assuming that this service, if needed, will be provided by the CM.
 - This proposal does not include test pits as will be required to locate the 60" Tannery Brooke drain that traverses the baseball field, site of the geothermal well field.
 - Police Details
 - The surveyor has included 1 day of police detail for their invert investigation.
 - The geotechnical engineer has included 1 day of police detail for a boring and test pit and associated permitting for the street signal mast-arm foundation design. It is assumed that the CM will provide the test pit and patching.
 - Additional Police Detail days and permitting for test pits associated with investigations that may be required where the geothermal well lines cross School Street, are not included in this proposal. These are assumed to be coordinated and paid for by the Construction Manager, including any related permit fees.
 - Subsurface Utility Engineering (SUE) will be performed by the surveyor to locate underground utilities in the location of the proposed geothermal well field and at the new raised street crossing using Ground Penetrating Radar (GPR).
 - ~~Scope of services of the surveyor as submitted is a draft and is still in the process of coordination with the roadway designer (VAI) requirements.~~
- Scope of services of HazMat as submitted is a draft subject to review with the CM and OPM to arrive a shared understanding of when and how the sampling and demolition work will occur.
- The property line as proposed in the latest survey document dated April 30, 2021, with revision dated January 10, 2023, will be the basis of design; ~~we assume that the Town will take the necessary steps to ensure that the proposed property line is made legally binding.~~
- Permitting and permitting fees for the geothermal well field are not included in this proposal and are assumed to be by the Construction Manager; these include a Well Permit required by the Brookline Health Department, and a Water Discharge Permit from the Town of Brookline Water Resource Authority for the discharge of ground water produced during drilling.
- One geothermal test well and associated analysis is included in this proposal as a reimbursable expense.
- Construction phase testing of concrete, steel, soil compaction etc. is not included in this proposal but can be added as a reimbursable expense when CA commences.
- Whole Building Air Tightness Testing by RDH is included as a reimbursable cost to address the forthcoming new energy code requirement; to be coordinated with MSBA's commissioning agent.
- Design Scope
 - Irrigation System Consultant and Soils Consultant are included in the Base Fee and includes rainwater collection and reuse system design.
 - Landscape Design at the playground, to accommodate the installation of the geothermal well field, is limited to replacing, in-kind, the existing condition without modification, except that new LED lighting will be provided at the basketball courts.

- An energy modeling for LEED compliance, and a second model to meet the upcoming State energy code requirements is included in the Base Fee
- The building is being modeled as one building including the new and historic buildings. Should separate energy models be required for the new building and the historic building to meet the requirements of the new energy code, the additional fee for separate models would be **\$8,800 dollars**
- Photometric analysis for alterations to the street lighting along School is not included in the base fee, but can be provided for an additional fee of **\$3,300**
- LEED documentation to meet the requirements of the MSBA is included in the base fee
- Battery storage is not currently included in the scope of work.
- Structural engineering services do not include any structural tests and inspections during the construction phase, the design of temporary earth retention systems and/or temporary bracing / shoring systems.
- Stefura is proposed to perform full FF&E services per their attached proposal. If the procurement process is directly through WB Mason, MDS can provide a reduced scope of services. *These services will not commence without the Town's authorization.*
- Redesign of School Street will be performed by Vanasse Associates (VAI) – see attached proposal.
 - *The scope of work includes the surface adjustment of private utilities that may be required as a result of the proposed roadway narrowing, to accommodate the realignment of curb lines and new buffers, bike lanes and sidewalk. At this time, based on the proposed concept plans and surface information provided, the need for extensive private utility work is not foreseen. During design development, should extensive private utility work be required (relocation or reconstruction of major electric, gas, and communications lines, conduit banks or manholes), which is to be performed by the private utility company, a contract amendment for additional engineering services will be submitted to the CLIENT for authorization prior to proceeding with coordination efforts with the private utility company(s) during the project design and construction phases.*
 - This proposal assumes pavement mill/overlay; if full depth reconstruction is required by the Town, additional Geotechnical services would be required.
 - The specification for the roadway work will incorporate DOT standards by reference; should the Town require CSI format in lieu of reference to MassDOT Standard or Supplemental Specifications, an additional fee is estimated at **\$15,000**.

If you have any questions, please do not hesitate to contact me. We look forward to getting started on this exciting project.

Best regards,
MDS / MILLER DYER SPEARS



William Spears, AIA, LEED AP, MCPPO
Principal

Attachments: Spreadsheet of Base Fee and Reimbursable Fees
Reimbursable Consultant Proposals

PROPOSAL FOR INTERIOR DESIGN SERVICES FIXTURES FURNITURE AND EQUIPMENT (FF+E)

Prepared for Miller Dyer Spears

John R Pierce School PreK-8
Brookline, Massachusetts
17 February 2023

1. FIRM INFORMATION

Interior Design Firm	Stefura Associates Inc
Business Address	77 North Washington Street Boston MA 02114
Telephone Number	617 723 5164
Facsimile Number	617 723 5165
Contact	Lianne Vivilecchia IIDA lianne@stefura.com

2. PROPOSED SCOPE OF SERVICES

We understand the program to require utilization of approximately 172,307 gross square feet of renovated and newly-constructed space for 725 students in grades K-8 and 60 students in Pre-K.

This proposal is based upon the understanding that all FF+E will be new. Furniture installation will be conducted in one phase. The project is slated for completion in Summer 2027. Should completion of the phases fall more than six months beyond these dates, the fees for this project will require adjustment.

In this proposal Miller Dyer Spears Architects will be referred to as MDS and Stefura Associates will be referred to as SAI. "In house" meetings described in this proposal refer to all meetings attended by the design team.

For the purposes of this proposal, we assume that construction will be Substantially Complete prior to the installation of furniture. Should this not be the case, the fees will require adjustment.

Architectural drawings for this project are being produced in Revit. A full set of project specifications, construction documents will be made available to SAI for coordination of work. Digital files of all base drawings will be provided by MDS.

Any architectural shell adjustments, made as the project progresses, will be incorporated into the drawings by MDS. Updated digital files will be provided to SAI.



Proposal for Interior Design Services
John R Pierce School PreK-8
Brookline, Massachusetts
17 February 2023
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SAI will provide the School with contact information for a minimum of two equipment suppliers/vendors, per area (see below), available on the Massachusetts State Contract or Massachusetts Higher Education Consortium (MHEC.) SAI will provide budget allocation in a lump sum. The School will be responsible for determining budget allocation per department. The School will be responsible for providing detailed information on equipment products such as manufacturer, model number and quantity, by department/program. SAI will incorporate equipment information received from the School into the State Contract or MHEC packages and the bid package for the following areas:

PE and Health
Custodial and Grounds Equipment
Health/Nurse
Miscellaneous Teaching Aids
 OT/PT
 Special Education
 Classrooms
 General Teaching Aids
Music Equipment
Art Equipment
Vocations and Technology
Kitchen Smallwares
Media Center

Where products are not available on State Contract or MHEC, any substitutions for products specified must be evaluated and approved, in writing, by the School.

DESIGN DEVELOPMENT I

- This phase will occur during the *Construction Documentation* phase of the project
- Review existing reports, drawings and other available documentation related to the project
- Attend programming meetings with MDS and the School to fine tune the FF+E programming information collected to date
- Prepare and issue meeting minutes
- Based upon the criteria developed, prepare preliminary FF+E plans; submit to MDS and the School for approval
- Update the FF+E budget; submit to MDS and the School for approval
- Review the electric/communications/data plans, provided by MDS; coordinate and document locations per the approved FF+E plans
- Provide dimensional and placement information of FF+E for MDS's coordination of clearances required for construction, casework, and placement of control/signal devices.



DESIGN DEVELOPMENT II

- Based upon the criteria developed during *Design Development I*, develop furniture plans, furniture selections and finishes; furniture finishes will be coordinated with finalized and finalized architectural finishes provided by MDS
- Prepare fine-tuned FF+E plans reflecting information collected during *Design Development I*
- Make selections of products and materials based upon information collected during *Design Development I* phase; present samples of actual pieces to MDS and the School, where appropriate
- Review products available on the MSBA Collaborative Procurement Program, present applicable products to the Town for consideration
- Prepare a fine-tuned FF+E budget; if budget exceeds available funding for FF+E, prepare a document of recommended deletions, substitutions, or future purchases
- Products and materials will be presented in a loose format.

DOCUMENTATION

- Prepare one FF+E package for public bid; the package will include keyed FF+E plans and specifications
- Specifications will describe each product in terms of manufacturer, model number, dimensions, quantities, location in the building; material finishes and colors; one product (or equal) will be listed
- For products that are available through State Contract, MHEC and/or the MSBA Collaborative Procurement Program, specifications will be prepared in conjunction with the product supplier(s); all such pricing will be confirmed by the supplier(s)
- Provide pricing packages for State Contract, MHEC and/or the MSBA Collaborative Procurement Program purchases
- A draft of the front-end portion of the bid document will be provided to the Town for review and edit; SAI will incorporate the approved boilerplate into the final bid package; SAI will forward the reproducible set of all documents to the Town for bidding purposes.

BIDDING/STATE CONTRACT AWARD

- Provide document clarification and/or addenda during the bidding period
- Attend the bid opening, if required, record the bids, and prepare a bid tally
- Apparent low bidders presented as “equal” will be evaluated by SAI to ensure equivalency to the original specifications; a written summary of the evaluation(s) will be provided by SAI
- Provide recommendations regarding bid award to the Town for review
- Products quoted through the State Contract, MHEC and/or the MSBA Collaborative Procurement Program will be purchased by the Town based on final specifications and quotes provided by the supplier(s)
- Provide attachment(s) for the Town’s use in issuing FF+E purchase orders; issuing of purchase orders will be the responsibility of the Town.



Proposal for Interior Design Services
John R Pierce School PreK-8
Brookline, Massachusetts
17 February 2023
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CONTRACT ADMINISTRATION/INSTALLATION

- Review submittals including finish samples, shop drawings and installation drawings; review FF+E order acknowledgments
- Prepare a Digital Project Manual consisting of images of each specified product and finish samples; submit the Manual to the School for record purposes
- Track progress of FF+E production
- Prepare an FF+E installation schedule; coordinate site access for all FF+E contractor(s) with the School and the General Contractor
- Attend a meeting with the FF+E contractor(s), the School, MDS, and the General Contractor to review FF+E installation coordination
- Conduct a punch list walk through upon the completion of the furniture installation; prepare and issue the punch list
- Conduct one follow-up inspection upon completion of the punch list issues
- Advise the Town on payments to the FF+E vendor(s.)

3. PROFESSIONAL FEES

The fixed fee for interior design services will be \$150,000.00 (one hundred and fifty thousand dollars.) Reimbursable expenses are included in this fee.

Phase	Fee	Client/Site Meetings	In-House Meetings	Schedule
Design Development I	\$ 30,000.00	3	3	06/2023-09/2024
Design Development II	\$ 45,000.00	4	3	03/2026-07/2026
Documentation	\$ 20,000.00	0	0	08/2026-09/2026
Bidding/State Contract Award	\$ 15,000.00	2	0	10/2026-11/2026
Contract Administration/ Installation	\$ 40,000.00	3	3	12/2026-08/2027
Total	\$150,000.00			

4. OPTIONAL ADDITIONAL SERVICES

The items listed below are services that are not included in the base fees and can be provided at the School's request. Other items listed below in *6. Additional Services*, can be provided as required.

FF+E Installation Supervision

SAI can provide daily on-site supervision of the FF+E installation for an additional fee.

5. GENERAL TERMS AND CONDITIONS

Payment for the basic services shall be invoiced monthly for the percentage of work completed within each phase of work as noted in *3. Professional Fees*. Payment is expected within ten (10) days of the date that MDS receives payment. Notification of a stop work order will be issued if payment is not received within seventy-five (75) days of the invoice date.



Proposal for Interior Design Services
John R Pierce School PreK-8
Brookline, Massachusetts
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MDS and SAI agree to share professional credit for this project as follows: In each instance where MDS controls the professional credits that are published with respect to this project and MDS names any of its consultants on the project, it will also specifically credit Stefura Associates Inc for interior design. Conversely, SAI will credit MDS as architect in publications, reports or any other marketing materials where it controls the professional credits.

Revisions to any documents that are inconsistent with written approval or previous instruction will be categorized as work-in-addition to the original scope.

6. ADDITIONAL SERVICES

Other services that are not included, in addition to the ones listed under the separate scope phases, are listed below. These services can be provided by or coordinated through SAI. We propose that, should they be authorized, they be completed for an additional fee.

- FF+E inventory and other tasks associated with existing FF+E
- Any equipment requiring data connection including, but not limited to, computers, smart boards, scanners, printers, and photocopiers
- Kitchen design and implementation; kitchen equipment
- Design and documentation of custom-built furniture
- Selection, design, and specification of window treatment
- Design and coordination of signage
- Architectural or custom lighting research, design, selection or specification
- Formal presentation boards
- As-built documentation
- Post occupancy evaluation including post-project completion documentation requested by the MSBA
- Meetings and/or trips to Brookline, Massachusetts other than those noted in this proposal.

Agreed to by the following:

Will Spears AIA, LEED AP MCPPO
Principal
Miller Dyer Spears Architects

Date

Marcy Stefura IIDA
Stefura Associates Inc

17 February 2023

Date



GGD Consulting Engineers, Inc.

375 Faunce Corner Road, Suite D
Dartmouth, MA 02747

L#82092
Proposal

September 30, 2022

Miller Dyer Spears Architects
40 Broad Street, Suite 103
Boston, MA 02109

Attn: Will Spears, AIA, LEED AP, MCPPO

Re: John R. Pierce School – Technology Equipment Procurement
50 School Street
Brookline, MA 02445

Dear Mr. Spears:

We are pleased to submit our proposal to provide Professional Engineering design and construction phase services for the procurement of technology equipment for the Pierce School project.

THE PROJECT

The design work shall include the preparation of specifications for technology equipment as follows:

Wireless network electronics; network switches; computers & basic software (Microsoft Office); servers & server racks; printers/scanners/plotters; interactive projectors/whiteboards; video message boards; document cameras; portable projectors; video-on-demand system; classroom sound lift systems; TV studio, Language labs or MIDI labs (where PC's are required, the PC will be included only).

The following systems and equipment are **excluded** from this proposal:

POS system, software, and cash registers; library cataloging system and software; e-books; industrial printers (laser engraver/3D printers, etc.); shop equipment: copiers and electronic instruments.

BASIC SERVICES

1. Technology system shall include equipment types and specification of equipment as indicated above. Floor plans shall be produced indicating locations of the various equipment to be installed. In addition, we will coordinate work with the Owner and Vendor so that we are a single point of contact for both parties.
2. We will meet at various times to discuss equipment selections prior to bidding, not to exceed three (3) meetings. Attendance at meetings beyond this will be considered additional service and billed on a time and material basis.

3. We will organize the process of receiving quotes and distribute to the Owner. We will review quotes and provide our recommendations.
4. Service entrance coordination with the utility company is included in this proposal. The ordering of internet/telephone/CATV services is not included in the proposal and will be considered an additional service under a time and material basis.
5. We will assist in selecting a Vendor or multiple Vendors and provide recommendations. We will also assist in coordination with each Vendor during phasing. Our scope includes aiding the Owner's Project Manager in determining payment of requisitions and purchase orders.
6. We will provide an up-to-date cost estimate to keep the equipment purchased within the budget amount using state contract pricing until the equipment packages are procured.
7. We will coordinate with other system vendors (such as furniture, computer equipment, etc.) where appropriate to facilitate equipment.
8. We will furnish floor plans for Owner review showing indication of equipment type proposed.
9. Documents will consist of REVIT or AutoCAD drawings with 8½" x 11" paper specifications.
10. All work will be part of a new contract subject to State Bid List requirements.
11. Services during construction include a review of equipment; document interpretation and clarification as may be required. Periodic observations of the construction work and reports thereon are included to a maximum of three. Site observations are to determine general conformance of the work to the intent of the Documents. We have included two bid packages due to phasing.
12. Printing of bid sets and additional sets required for permitting and construction will be an additional reimbursable expense. Any local/town fees and advertisement fees associated with completing the project will be billed as a reimbursable expense.

COMPENSATION AND PAYMENT:

In consideration of the above, we propose a lump sum fee of Thirty-Two Thousand Dollars **(\$32,000.00)**, detailed as follows:

TASK	FEE
20% Document Submission	\$ 4,800.00
50% Document Submission	\$ 6,400.00
90% Document Submission	\$14,400.00
100% Document Submission	\$ 1,600.00
Construction Administration	\$ 4,800.00
TOTAL	<u>\$32,000.00</u>

Payment for the fee shall be made within 30 days of billing. Billings shall be rendered in proportion to the services performed in the preceding 30-day period.

EXTRA SERVICES

Extra Services shall be confirmed and authorized in writing prior to the rendering of same and may be compensated either by hourly reimbursement or on a mutually agreed upon fixed fee. Compensation for hourly services shall be in accordance with the following:

Principal	\$200.00/hr
Senior Engineer	\$155.00/hr
Engineer	\$125.00/hr
Designer	\$ 95.00/hr
Clerical	\$ 75.00/hr
Site Visit	\$1,000.00/per visit

REIMBURSABLE EXPENSES

Reimbursable expenses such as mailing, shipping, and printing are included in the Basic Services. Any local/town fees and advertisement fees associated with completing the project will be billed as a reimbursable expense.

INSURANCE COVERAGE

We provide complete insurance coverage which includes \$4,000,000 aggregate Professional Liability Insurance coverage. Upon acceptance of this proposal, we will provide you with proper certification.

This proposal is valid for 90 days from the issue date and is based on commencement of the initial design phase within 60 days of proposal acceptance.

If this proposal meets with your approval, please return a signed copy to our office. This will act as our agreement and notice to proceed.

Very truly yours,
GGD Consulting Engineers, Inc.



David M. Pereira, PE, Principal

Miller Dyer Spears Architects

Will Spears, AIA, LEED AP, MCPPO

DMP: ja

Date



February 8, 2023

Will Spears, AIA, LEED AP BD+C, MCPPO
Principal
MDS/MILLER DYER SPEARS
99 Chauncy Street, 8th Floor
Boston, MA 02111

E: wspears@mds-bos.com
P: 617-338-5350

Re: Proposal – John R. Pierce School – 50 School Street, Brookline, MA 02445
Environmental Science Consulting Services
P-07755

Dear Will:

In accordance with your request, PEER Consultants is pleased to provide this cost proposal to conduct the following environmental science consulting services, related to the proposed work at the John R. Pierce School property (the Property), located at 50 School Street (with a historical building at 32 Pierce Street), in Brookline, Massachusetts. The initial scope of work shown below will consist of tasks such as those which may occur under the Design Development phase. PEER previously completed tasks under the feasibility phase and schematic design, as per our proposal which was dated February 10, 2021.

BACKGROUND

As per information provided in the Request for Design Services, PEER understands that following: the John Pierce School is located in the heart of Brookline Village, and is named after John Pierce, noted pastor of the Walnut Street church during the mid-19th century. The original four-classroom Pierce School was built in 1854. This original structure is still used as part of the John R. Pierce School's historic building, and remains the oldest school building in Brookline and one of the oldest still in use in Massachusetts. In 1904, an addition was built onto the original building, expanding the school by eight classrooms, creating what is now known as the Pierce Historic Building. These 12 classrooms continue to serve the school today as early elementary and middle school classrooms.

In 1974 the Town of Brookline finished construction of the Pierce Main Building. Considered a model example of the open-space design popular in the 1970s it consists of three wings or units. The building is centered around a two-story library or resource center. The Historic Building is still occupied today and has a long history of being maintained with the latest major projects being brick repointing in 2016, roof

replacement and repairs in EPDM in 2002 and the slate shingles in 2014. In the early 1990s, the Main Building roof had many leaks and repair, and replacement of EPDM roofing was completed in 1993. This building has been maintained with minor repairs being completed as needed, but the majority of systems and fixtures are from the original 1974 structure.

The school consists of two buildings with a total combined square footage of 198,000 gsf and was originally designed as a three section per grade building in what has large open floor design component to it and has evolved into serving four and five sections per grade in 2019-2020. The new John R. Pierce School will be a four section Pre-K to Grade 8 school, to relieve overcrowding challenges and to replace or renovate obsolete buildings.

Per the Town Assessor's map, both buildings, Pierce Historical (1854) and Pierce Main Building (1974), are on the same parcel of land totaling 138,055 SF. The playground, owned and operated by the Town of Brookline Parks & Open Space division, is located across the street and students access the playground via a footbridge. The playground was renovated in 2016 and consists of 67,665 SF of dedicated (little league field, basketball court, playground areas) and passive (natural grass and trees) play space.

1. SCOPE OF WORK

Design Development Phase – Hazardous Building Materials - Environmental Science Consulting Services

PEER understands that the preferred solution to the John R. Pierce School on the Property is dependent on determinations during the design development study. PEER understands that solutions on the Property may include **NEW CONSTRUCTION** of the Main Building and/or **RENOVATION** of the Historic Building.

Therefore, PEER proposes to provide continued limited hazardous building materials survey support for the scope of work at the subject building(s) on the Property by conducting limited suspected asbestos containing material (ACM) and lead in paint on substrate sampling of building materials in readily accessible areas only, at the subject building(s), related to the proposed project.

PEER understands that a Construction Manager, such as Consigli may be involved with the project during Design Development; therefore, PEER understands that you will have access to the building(s), and that you will arrange/provide us access to the representative structures on the proposed date or dates of sampling. In order to preserve the potential integrity of the structure (and while the buildings are in use), destructive sampling of suspected building materials, which may impact the historical integrity, structural integrity, or impact health and safety of those occupants or workers present, or anticipated to be present, will not be conducted by PEER during this sampling event.

We understand that, as part of this hazardous building materials investigation, the Town or Others (i.e., not by PEER Consultants, P.C.) will provide (and pay for) someone knowledgeable to cut, core, remove, and/or replace the building material components, as well as provide for (and pay for) a contractor (the "Contractor") to repair any items related to the building material components. We understand that since the Buildings are still in use, that suspect hazardous building material samples will be collected in readily

accessible areas only, and that additional hazardous building material areas that may not be able to be sampled at this stage may still exist behind/between walls, above ceilings, beneath floors, beneath the roof deck, beneath slabs or underground, on foundations, in crawl spaces, in confined spaces, behind or associated with any electrical, heating, ventilation, air conditioning, or mechanical system, and in other non-accessible or unsafe areas (as determined by PEER), which may currently be or become part of your work scope. PEER also understands that the Contractor will have the means and methods to access all sampling locations (for PEER to collect samples), which may occur associated with the Work within the interior and/or exterior of the Building.

PEER understands that the Facility Owner/Operator has specifically requested that PEER not collect samples of any material for analysis of polychlorinated biphenyls (PCBs) at the Buildings.

PEER anticipates staffing this project with one (1) Massachusetts licensed asbestos inspector, or staffing this project with one (1) Massachusetts licensed asbestos inspector and one (1) Environment Scientist, who will act as an assistant to the licensed asbestos inspector, as further detailed in the below tables. PEER proposes to conduct the hazardous building materials investigation portion of our scope of services at the Property, as per the number of days outlined in the Table or Tables below.

PEER understands that there may be areas in, on, or associated with the Buildings that are unsafe to enter as of this proposal, and/or may be considered a confined space, and/or may not be accessible until after the Buildings are no longer occupied. PEER understands that for these areas, and any other area or areas which may contain detectable asbestos containing materials, or which may contain presumed asbestos containing materials but whose quantity of asbestos may not be quantifiable, you will be developing a unit price bid form ("ADD" and/or "DEDUCT"), along with a description for the specific building materials for inclusion in the Contract Documents.

Though PEER assumes that the sequence of your Work at the Buildings will occur on similar schedules, PEER will summarize the results of the hazardous building materials investigation for the Buildings in two separate reports during Design Development titled "Draft Hazardous Building Materials Inspection – Main Building" and titled "Draft Hazardous Building Materials Inspection – Historic Building", and two separate reports during Construction Documentation titled "Final Hazardous Building Materials Inspection – Main Building" and titled "Draft Hazardous Building Materials Inspection – Historic Building".

As per the tables below, PEER will prepare two (2) asbestos project designs (one for the Main Building and one for the Historic Building), one (1) lead safe practices specification, one (1) universal waste specification, and one (1) underground storage tank (UST) removal specification. PEER will conduct contract administration services, as outlined in the tables below.

PEER understands that you will provide us scaled existing drawings/plans for the Buildings, which you or Others may already be developing for the project. PEER understands that you may already have details from previous as-built plans: such as window sizes, door sizes, and similar existing features, including quantities, which you will be able to provide to us for information purposes. Therefore, at the conclusion of this limited hazardous building materials investigation, PEER understands that we will inform you of building materials determined by the analytical laboratory as containing detectable asbestos, and you will inform us of the quantity (units, linear feet, square feet) of building materials that this represents for the

Buildings. PEER may also choose to return to the Buildings to estimate certain quantities (units, linear feet, square feet) of laboratory identified asbestos containing building materials at the Buildings.

Please inform us in advance whether the current scope of this proposal may take place during normal business hours, or whether we will need to plan for sampling during nights, holidays, or the weekend. This proposal assumes personnel staffed during normal business hours. If our understanding of this portion of the scope of the project is different from actual anticipated work, or if labor hours outside of normal business hours are expected, please inform us immediately, and we will make appropriate adjustments to this proposal.



Design Development Phase – Ge-Environmental Soil - Environmental Science Consulting Services

PEER understands that the Geotechnical Engineer may be on site for three (3) days and choose to drill five (5) to six (6) borings at the proposed project site to a completion depth of 20 feet, and therefore, PEER proposes to collect up to six (6) soil samples (either as grab or composite) from either surface or subsurface soils from the borings at the project site, completed at the same time of the geotechnical boring development.

PEER assumes that our senior environmental scientist will be present during a geotechnical investigation (by Others) on the Project site, that the Geotechnical Engineer will be calling DIGSAFE, and will be arranging and paying for the Drilling Contractor, and that therefore PEER's senior environmental scientist may collect soil pre-characterization data from the soil borings by splitting the soil material in the split spoon with the Geotechnical Engineer.

PEER anticipates staffing this project with one person, and conducting the soil geo-environmental investigation at up to six (6) pre-selected locations at the project site, during three (3) business days.

The cost estimate table below also includes a per sample laboratory cost for the analysis of surface and/or subsurface soil for the following pre-characterization parameters: Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Total Petroleum Hydrocarbons (TPH), PCBs, MCP 14 Metals, Specific Conductivity, Reactivity (Cyanide and Sulfide), Corrosivity, and Flash Point/Ignitability. Please inform us if the Town requires any additional environmental parameters be included as part of this soil investigation, and we will revise our proposal accordingly.

PEER understands that as part of our continued pre-characterization Geo-Environmental Investigation that we will be provided a copy of the updated Geotechnical Characterization Report (by Others), when complete. Once the updated Geotechnical Characterization Report is received, PEER will begin to prepare one Limited Soil Pre-Characterization Report for the Project site, which will summarize and update the results of our Limited Geo-Environmental Subsurface Soil Investigation.

2. COST

For the work outlined above, including in consideration of our assumptions, we propose a fee for services as indicated in the following Tables.

The number of samples is estimated; a place holder based on the assumed number of hazardous materials present, and based on the bulk asbestos samples required to be collected under the regulations, and will be billed only for actual samples analyzed (more or less).

We understand that should there be additional environmental-type tasks as the project moves forward, we would be pleased to provide you a separate cost proposal for any additional task items at such time.

Table A – Investigation Phase – Design Development

Environmental Science Consulting Services Level of Effort: Investigation Phase	Total Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
Task 3.1.A. – Interior or Exterior , Hazardous Building Materials Inspection: Preparation, Hazardous Building Material Inspection (travel, sampling, sample chain of custody documentation). One licensed asbestos inspector to collect readily accessible hazardous building material samples (asbestos) at the Buildings , and includes ODCs of mileage and supplies. Day 1.	2,155.00
Task 3.1.B. – Interior or Exterior , Hazardous Building Materials Inspection: Preparation, Hazardous Building Material Inspection (travel, sampling, sample chain of custody documentation). One licensed asbestos inspector to collect readily accessible hazardous building material samples (asbestos) at the Buildings , and includes ODCs of mileage and supplies. Day 2.	1,984.00
<i>Task 3.1.X. – Interior or Exterior, Hazardous Building Materials Inspection: Preparation, Hazardous Building Material Inspection (travel, sampling, sample chain of custody documentation). One licensed asbestos inspector to collect readily accessible hazardous building material samples (asbestos) at the Buildings, and includes ODCs of mileage and supplies. This Task assumes a per day unit cost through December 7, 2023 for PEER to be on-site for the purpose of hazardous building material inspection, and serves as a placeholder for additional days on site, as may be needed.</i>	1,896.00 (per day) 2 Days \$3,792
Task 3.2.A. – Interior or Exterior , Limited or Destructive Hazardous Building Materials Inspection: Preparation, Hazardous Building Material Inspection with an on-site Contractor (travel, sampling, sample chain of custody documentation). One licensed asbestos inspector working alongside a Contractor, to collect readily accessible hazardous building material samples (asbestos) at the Buildings , and includes ODCs of mileage, and supplies. Day 1.	2,155.00

Environmental Science Consulting Services Level of Effort: Investigation Phase	Total Cost (\$)
Task 3.2.B. – Interior or Exterior , Limited or Destructive Hazardous Building Materials Inspection: Preparation, Hazardous Building Material Inspection with an on-site Contractor (travel, sampling, sample chain of custody documentation). One licensed asbestos inspector working alongside a Contractor, to collect readily accessible hazardous building material samples (asbestos) at the Buildings , and includes ODCs of mileage, and supplies. Day 2.	1,984.00
<i>Task 3.2.X. – Interior or Exterior, Limited or Destructive Hazardous Building Materials Inspection: Preparation, Hazardous Building Material Inspection with an on-site Contractor (travel, sampling, sample chain of custody documentation). One licensed asbestos inspector working alongside a Contractor, to collect readily accessible hazardous building material samples (asbestos) at the Buildings, and includes ODCs of mileage, and supplies. This Task assumes a per day unit cost through December 7, 2023 for PEER to be on-site for the purpose of hazardous building material inspection with a Contractor, and serves as a placeholder for additional days on site, as may be needed.</i>	1,896.00 (per day) 2 Days \$3,792
Estimated Subtotal	TO BE DETERMINED
Task 3.3.A. – Bulk ACM Analysis by PLM PEER is required by AHERA to collect a certain quantity of “samples” based on building material type and homogeneous areas. Therefore, for this phase of the project (Tasks 3.1. and Task 3.2), PEER estimates that 200 bulk ACM samples may be collected associated with the Buildings. Assumes 200 bulk asbestos samples for the Buildings on the Property @ \$15/sample. PEER will only invoice for actual samples analyzed.	3,000.00
Task 3.3.B. – Bulk ACM Analysis by TEM NOB Based on recent MADEP policy guidance regarding conclusiveness of asbestos sampling, PEER anticipates that up to ten (10) of the bulk ACM analyses for Task 3.1 and Task 3.2 may need to also be run by EPA Method TEM NOB. Assumes 10 bulk asbestos samples for the Buildings on the Property by TEM NOB @ \$100/sample; 1-week TAT. PEER will only invoice for actual samples analyzed.	1,000.00
Task 3.3.C. – Bulk ACM Analysis by PLM For the phase of the project which may occur under Task 3.1.X. or Task 3.2.X, PEER estimates that an additional 80 bulk ACM samples may be collected associated with the Buildings. Assumes 80 bulk asbestos samples for the Buildings on the Property @ \$15/sample.	1,200.00
Estimated Subtotal	5,200.00

\$15,862

Environmental Science Consulting Services Level of Effort: Investigation Phase	Total Cost (\$)
Task 3.4.A. – Lead in Paint PEER estimates that ten (10) paint chip samples by laboratory analysis (Inductively Coupled Plasma) at \$25/sample may be collected from the Historic Building at the Property. Swab sample is 24 hours TAT; Chip sample is 7 day TAT (from time of laboratory receipt).	250.00
Task 3.4.B. – Toxicity Characteristic Leaching Procedure (TCLP) Lead in Paint on Substrate. Based on the potential concentration of lead in paint on certain (non-metal) substrates, as it relates to the Historic Building as a waste stream, PEER recommends analyzing specific painted components for TCLP lead in order to determine whether the painted waste stream may be considered a hazardous waste. Assumes TCLP Lead analysis on five (5) non-metal painted substrates at the Building @ \$90/sample); 7 day TAT.	450.00
Task 3.4.C. – One Lead Safe Renovator Supervisor (working alongside a Contractor), to collect readily accessible, non-metal painted substrates at the Historic Building , for TCLP analysis as per Task 3.4.B., and includes preparation of samples for the analytical laboratory, ODCs of mileage, and supplies. Task is assumed to occur concurrent (on the same day) with Task 3.2.A.	See Task 3.2.A
Estimated Subtotal	700.00
Task 3.5. – One licensed asbestos inspector, to estimate (linear feet, square feet, units) only readily accessible hazardous building materials (with detected asbestos) located in accessible areas (as determined by PEER) at the Buildings , and includes ODCs of mileage, at the completion of tasks (Task 3.1 through Task 3.4). This task assumes three (3) business days on the Property. PEER will only invoice for actual days on the Property, under this task.	5,300.00
Estimated Subtotal	5,300.00
Task 3.6.A. – One updated <u>Draft</u> Hazardous Building Materials Inspection Report for the Main Building .	1,380.00
Task 3.6.B. – One updated <u>Draft</u> Hazardous Building Materials Inspection Report for the Historic Building .	1,380.00
Estimated Subtotal	2,760.00
Task 3.7 - Limited Geo-Environmental Soil Investigation: Preparation, Geo-Environmental Soil Investigation in coordination with Geotechnical program by Others, Sample Chain of Custody Documentation, and Delivery of the Soil to the Analytical Laboratory. One senior environmental scientist over three (3) business days of drilling, and includes ODCs of mileage, and supplies.	5,560.00

Environmental Science Consulting Services Level of Effort: Investigation Phase	Total Cost (\$)
Task 3.8 - Laboratory cost for the analysis of (grab or composite) surface and/or subsurface soil based on the above parameters. Six (6) soil samples @ \$895/sample. 7 day TAT.	5,370.00
Task 3.9 - Limited Soil Pre-Characterization Report (One Updated Final Report) for Project Site.	2,068.00
Estimated Subtotal	12,998.00
Estimated Total	TO BE DETERMINED

\$42,820

Table B – Specification Development Phase

Environmental Science Consulting Services Level of Effort: Specification Development Phase	Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
Task 4.1.A.1. – Prepare one Draft Asbestos Project Design (Specification) for the Main Building .	2,758.00
Task 4.1.A.2. – Prepare/update as one Final Asbestos Project Design (Specification) ^{##} for the Main Building .	690.00
Task 4.2.A.1. – Prepare one Draft Asbestos Project Design (Specification) for the Historic Building .	2,068.00
Task 4.2.A.2. – Prepare/update as one Final Asbestos Project Design (Specification) ^{##} for the Historic Building .	518.00
Estimated Subtotal	6,034.00
Task 4.3.A.1. – Prepare One Draft Lead Safe Practice (Specification) for the Buildings .	1,035.00
Task 4.3.A.2. – Prepare/update as one Final Lead Safe Practice (Specification) for the Buildings .	260.00
Estimated Subtotal	1,295.00
Task 4.4.A.1. – Prepare One Draft Universal Waste and Miscellaneous Hazardous Material (Specification) for the Buildings .	862.00
Task 4.4.A.2. – Prepare/update as One Final Universal Waste and Miscellaneous Hazardous Material (Specification) for the Buildings .	175.00
Estimated Subtotal	1,037.00
Task 4.5.A.1. – Prepare One Draft Underground Storage Tank Removal (Specification) for the Buildings . Assumes one Underground Storage Tank total for the Buildings.	1,035.00
Task 4.5.A.2. – Prepare/update as one Final Underground Storage Tank Removal (Specification) for the Buildings .	260.00
Estimated Subtotal	1,295.00
Task 4.6.A. – Prepare/update as One <u>Final</u> Hazardous Building Materials Inspection Report for the Main Building .	518.00
Task 4.6.B. – Prepare/update as One <u>Final</u> Hazardous Building Materials Inspection Report for the Historic Building .	518.00
Estimated Subtotal	1,036.00
Estimated Total	10,697.00

Table C – Bid Phase

Environmental Science Consulting Services Level of Effort: Bid Phase under Asbestos Abatement	Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
Task 5.1 – PEER’s senior environmental scientist will attend the on-site “Bidders” briefing for the proposed asbestos abatement Project for the Buildings . This task assumes that the briefing will occur on the project site, and includes up to two (2) hours on the Property, and other direct costs such as mileage.	705.00
Estimated Total	705.00

Table D – Construction Phase – Asbestos

Environmental Science Consulting Services Level of Effort: Construction Phase under Asbestos Abatement	Total Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
<p>Task 6.1.A – One Review of the Asbestos Abatement Contractor’s Initial <u>Pre-Construction Meeting Submittal</u>.</p> <p>[Assumes Asbestos Abatement Contractor Pre-Construction Meeting Submittal is “legible, organized, administratively complete, and accurate” when PEER receives it, as per Section 028200. Assumes one Initial Pre-Construction Meeting Submittal total.</p> <p>Note: Each additional review, as may be needed, of the Asbestos Abatement Contractor Initial Pre-Construction Meeting Submittal will be invoiced at a unit cost of \$315/review. Owner may wish to seek reimbursement from general contractor/asbestos abatement contractor for additional reviews.</p> <p>PEER assumes based on recent asbestos abatement projects that one initial review [\$630] and two (2) additional reviews @\$315/review may be required. PEER will only invoice for actual reviews completed.</p>	1,260.00
<p>Task 6.1.B – Each Review (at PEER’s office) of Asbestos Abatement Contractor RFIs <u>during</u> Asbestos Abatement Activities, as may be needed. Unit cost = \$175 per review per submittal or RFI.</p> <p>PEER assumes that there will be five (5) RFI’s received from the asbestos abatement contractor during the asbestos abatement project. PEER will only invoice for actual RFI’s reviewed.</p>	875.00
<p>Task 6.1.C – One Review of the Asbestos Abatement Contractor’s Initial <u>Submittal at Completion of Asbestos Abatement</u>.</p> <p>[Assumes Asbestos Abatement Contractor’s Initial Submittal at Completion of Asbestos Abatement is “legible, organized, administratively complete, and accurate” when PEER receives it, as per Section 028200. Assumes one Submittal at Completion of Asbestos Abatement review total.</p> <p>Note: Each additional review, as may be needed, of the Asbestos Abatement Contractor’s Submittal at Completion of Asbestos Abatement will be invoiced at a unit cost of \$315/review. Owner may wish to seek reimbursement from general contractor/asbestos abatement contractor for additional reviews. PEER assumes based on recent asbestos abatement projects that one initial review [\$630] and two (2) additional reviews @\$315/review may be needed. PEER will only invoice for actual reviews completed.</p>	1,260.00

Environmental Science Consulting Services Level of Effort: Construction Phase under Asbestos Abatement	Total Cost (\$)
Task 6.2 – Pre-Construction Meeting. PEER understands that the Contractor must schedule and meet with the Facility Owner/Operator, Architect/Engineer, and the Asbestos Consultant for a pre-construction meeting in advance of commencing asbestos abatement work on the project. This task assumes one meeting by the Asbestos Consultant of up to 2 on-site hours, and includes preparation, travel, and other direct costs.	705.00
Task 6.3 – Additional Site Visits (when requested by the Facility Owner/Operator or Architect/Engineer). Includes up to a 2-hour site meeting, preparation, travel, and ODCs. Assumes five (5) additional project site visits total @ \$705 per site visit. PEER will only invoice for actual site visits completed.	3,525.00
Estimated Total	7,625.00

Table E – Construction Phase – Lead in Paint

Environmental Science Consulting Services Level of Effort: Construction Phase under Lead in Paint	Total Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
<p>Task 7.1.A – One Review of the Lead Safe Renovator Contractor’s Initial <u>Pre-Construction Meeting Submittal</u>.</p> <p>[Assumes Lead Safe Renovator Contractor Pre-Construction Meeting Submittal is “legible, organized, administratively complete, and accurate” when PEER receives it, as per Section 028319. Assumes one (1) review of the Initial Lead Safe Renovator Contractor’s Pre-Construction Meeting Submittal total, for the cited buildings with lead in interior or exterior paint or coatings.</p>	630.00
<p>Task 7.1.B – One Review of the Lead Safe Renovator Contractor’s Initial <u>Submittal at Completion of Lead-Safe Practice Activities</u>.</p> <p>[Assumes Lead Safe Renovator Contractor Submittal at Completion of Lead-Safe Practice Activities is “legible, organized, administratively complete, and accurate” when PEER receives it, as per Section 028319. Assumes one (1) review of the Initial Lead Safe Renovator Contractor’s Submittal at Completion of Lead-Safe Practice Activities total, for the cited buildings with lead in interior or exterior paint or coatings.</p>	435.00
Estimated Total	1,065.00

Table F – Construction Phase – Universal Waste

Environmental Science Consulting Services Level of Effort: Construction Phase under Universal Waste	Total Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
Task 8.1.A – One Review of the Contractor’s Initial Universal Waste <u>Pre-Construction Meeting Submittal</u> . Assumes one (1) review of the Initial Universal Waste Pre-Construction Meeting Submittal total for the cited buildings.	630.00
Task 8.1.B – One Review of the Contractor’s Initial Universal Waste <u>Submittal as part of Project Closeout Documentation</u> . Assumes one (1) review of the Initial Universal Waste <u>Submittal as part of Project Closeout Documentation</u> total for the cited buildings.	435.00
Estimated Total	1,065.00

Table G – Construction Phase – Underground Storage Tank

Environmental Science Consulting Services	Total Cost (\$)
Level of Effort: Construction Phase under Underground Storage Tank	
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
Task 9.1.A – One Review of the Underground Storage Tank removal Contractor's (Pre-Removal) Submittals.	630.00
Task 9.1.B – One Review of the Underground Storage Tank removal Contractor's (Post Removal) Submittals.	435.00
Task 9.1.C – Documentation of Underground Storage Tank removal. PEER will be present on the Property only to observe site activities during the Underground Storage Tank removal (by Others). Based on the presumed presence of one (1) underground storage tank, PEER assumes one (1) day on the Property.	1,738.00
Task 9.1.D – PEER will prepare a Summary Field Memorandum, describing observations by PEER conducted under Task 9.1.C.	1,035.00
Estimated Total	3,838.00

Table H – Licensed Site Professional (as needed) Services

Environmental Science Consulting Services Level of Effort: LSP (as needed) Services	Total Cost (\$)
John R. Pierce School – Redevelopment 50 School Street, Brookline, Massachusetts	
Task 10.1 – Provide as needed Environmental Science Consulting Services. Provide or subcontract to provide as needed LSP services (together, the “Services”), based on year-current fully loaded labor rates, plus materials and other direct costs, up to an initial not to exceed fee of \$10,000. PEER will only conduct or subcontract these Services up to the stated not to exceed fee. Should the Architect or Others request these Services, or should the Services require continuation past the initial not to exceed fee of \$10,000, PEER will request your written authorization to proceed with these Services or PEER will provide you with an updated proposal for your authorization to proceed with these Services.	10,000.00
Task 10.2 – Laboratory and any other vendor fees or third party fees in order to complete any of these Services will be determined when needed, and PEER will seek your authorization to proceed with these fees, when needed.	To Be Determined
	\$77,815

3. SCHEDULE

We can start work as soon as this project is awarded to PEER through the issuance of a contract, and as soon as you can schedule property access and other site support staff for this project. Please note that physical, chemical, biological, and/or viral hazards, as well as any other local, State, or Federally imposed restrictions may delay the initiation of this assignment.

4. STAFF RESPONSIBILITY

Mr. David Gorden will be in charge of the project, and we understand that you will provide general direction and policy decisions on behalf of your organization. Other staff members with appropriate technical backgrounds will participate on this project.

5. GENERAL PROVISIONS

Our work for clients is conducted on a confidential basis, and we will treat information received from you or developed by us in accordance with our Established Professional Standards.

Our work will be on a best-efforts basis. We expect that the results will meet the objectives sought, and we have assigned to the work professional personnel having the required skills, experience and competence. Our recommendations and the written material we provide will be our best judgment based upon the information available to us. In any event, our liability for damages arising out of your use of the

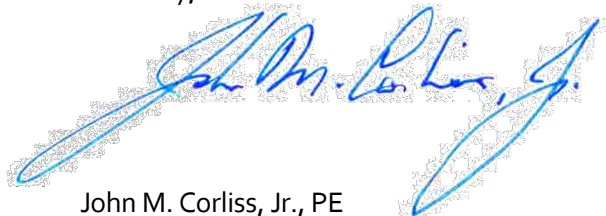
results of our work or any recommendations we may make shall not be greater than the amount paid to us for the professional services rendered.

Any change in this agreement shall be confirmed in writing. This agreement shall be interpreted according to the laws of the Commonwealth of Massachusetts.

6. ACCEPTANCE

We appreciate the opportunity to work with you on this important assignment for the **Public Schools of Brookline**. This proposal is considered valid when signed below, and when signed and returned to PEER within thirty (30) days of the proposal date. PEER reserves all rights to update this proposal, including an update to fees, either prior to or after the Town of Brookline's May 23, 2023 Town Meeting. To authorize us to proceed, please issue us a contract to complete the work, and sign and return this proposal to us.

Sincerely,



John M. Corliss, Jr., PE
Senior Vice President and Chief Engineer
PEER Consultants, PC

Accepted for
MDS/MILLER DYER SPEARS

By: _____

Title: _____

Date: _____

March 1, 2023

Mr. Will Spears, AIA
Senior Principal
MDS/MILLER DYER SPEARS ARCHITECTS
40 Broad Street, Suite 103
Boston, MA 02109

Reference: **Asbestos Containing Materials Construction Monitoring and Air Sampling Services
Pierce School, Brookline, MA**

Dear Mr. Spears:

Thank you for the opportunity for Universal Environmental Consultants (UEC) to provide professional services.

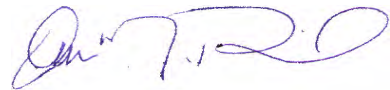
We are pleased to submit our proposal for the above referenced project.

Should this proposal meet with your approval, kindly execute, and return the enclosed proposal.

Please do not hesitate to call me at (508) 628-5486 if you have questions about this proposal or our services.

Very truly yours,

Universal Environmental Consultants



Ammar M. Dieb
President

UEC:\Proposals\IDM\MDS-Pierce School, Brookline-M.DOC

Enclosure

**PROPOSAL
FOR
ASBESTOS CONTAINING MATERIALS CONSTRUCTION MONITORING
AND
AIR SAMPLING SERVICES
AT THE
PIERCE SCHOOL
BROOKLINE, MA**

SCOPE OF SERVICES:

- A. UEC Project Manager will attend a pre-construction conference prior to start of work. The conference establishes specific scheduling requirements, logistical arrangements, chain of command, and emergency procedures and phone numbers.
- B. UEC Project Monitors will provide on-site asbestos abatement and building demolition activities monitoring and observe the contractor's practices and procedures during the removal and demolition process.
- C. UEC Project Monitors will attend meetings during asbestos abatement activities.
- D. UEC Project Monitors will collect and analyze air samples in accordance with Federal and State regulations as follows:
 - ◆ Background air samples by Phase Contrast Microscopy (PCM) prior to the commencement of abatement activities in each area to establish the ambient levels of airborne fibers.
 - ◆ General area air samples by PCM during abatement activities both inside and outside abatement work areas to verify airborne fiber levels do not exceed required limits.
 - ◆ Clearance air samples by PCM and Transmission Electron Microscopy (TEM) as required by Federal and State regulations. PCM samples will be collected and analyzed on-site. TEM air samples will be analyzed by a licensed laboratory in accordance with 40 CFR 763.as required by Federal and State regulations.
- E. UEC Project Monitors will perform air sampling on the exterior of the school during demolition as required by the DEP since ACM damproofing was found on the exterior.
- F. Produce a final report, including daily logs, sample results based on EPA compliance audit protocol.

PAYMENT:

UEC will submit invoices for work completed. Invoices shall be paid within ten (10) days from client's receipt of payment from the owner. This proposal is subject to UEC conditions.

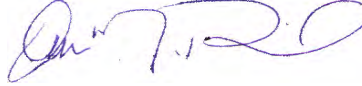
FEES FOR SERVICES:

Fees for services will be charged on time and material basis with an estimated fee as follows.

Pre-Construction Meeting	\$ 500.00	\$ 500.00
Monitor per 8-hour Shift (regular time) x 100 Shifts	\$ 500.00	\$ 50,000.00
Designer and Project Manager (per hour) x 40 Hours	\$ 115.00	\$ 4,600.00
Per PCM air samples x 10 Samples per Shift	\$ 20.00	\$ 20,000.00
Per TEM air samples x 50 Samples (48-hours TAT)	\$ 80.00	\$ 4,000.00

Closure Report	\$ 500.00	\$ 500.00
The estimated not to exceed fee		\$ 79,600.00
Based on 100 Monitoring Shifts/50 TEM air samples.		
(The fee will need to be updated once a schedule has been received)		

Proposal Authorized By:



Ammar M. Dieb
President

Proposal Accepted by:

Signature: _____

Mr. Will Spears, AIA
Senior Principal
MDS/MILLER DYER SPEARS ARCHITECTS
40 Broad Street, Suite 103
Boston, MA 02109

February 13, 2023

Ms. Margaret Clark, RA, LEED AP BD+C, WELL AP, MCPPO
Miller Dyer Spears Inc.
99 Chauncy Street
Boston, MA 02111
Phone: (617) 338-5350
Fax: (617) 338-0033
E-mail: mclark@mds-bos.com

**Re. Proposal for DD, CD, and CA Geotechnical Services
Proposed Pierce Elementary School
Brookline, Massachusetts
LGCI Proposal No. 22127-Rev.1**

Dear Ms. Clark:

Lahlaf Geotechnical Consulting, Inc. (LGCI) appreciates the opportunity to submit this proposal to provide design development (DD) phase, construction document (CD) phase, and construction administration (CA) phase geotechnical services for the proposed Pierce Elementary School in Brookline, Massachusetts. This proposal is based on your request for proposal dated October 13, 2022, and information you provided to us during our phone conversation on January 31, 2023. Our revision is based on your e-mail dated February 13, 2023.

Project Description and Background

The site is comprised of the existing Pierce Elementary School, located at 50 School Street in Brookline, Massachusetts, and the Pierce Playground, located across School Street from the existing school. The Pierce School Extended Daycare (the former Pierce Elementary School), a historic building, is located south of the existing school.

We understand that the project is in the schematic design (SD) phase. We understand that of the three previously considered options for the proposed school, the option of demolishing the existing building and replacing it with a new building was selected. The proposed building will generally have a footprint that mostly overlaps with that of the exiting building (slated for demolition). We understand that the proposed building will have a ground floor with a finished floor elevation (FFE) of about 32.3 feet. The proposed building will be 4 stories high and will be connected to the existing nearby historic building via an underground passage.

LGCI previously performed preliminary explorations at the site and submitted a preliminary geotechnical report dated June 14, 2021 to Miller Dyer Spears Inc. (MDS). As part of our preliminary explorations, LGCI performed eighteen (18) soil borings at the site. Our borings indicated topsoil, asphalt, or a concrete surface, overlying existing fill and buried organic soil that extended to depths ranging between 0.7 and 14 feet beneath the ground surface, overlying natural sand and gravel. LGCI recommended removing and replacing the existing fill and

buried organic soil or improving the existing fill and buried organic soil with aggregate piers or rigid inclusions.

Technical Approach

The purpose of our services is to perform three (3) additional borings at the exterior of the existing building, including performing a soil boring and installing a groundwater observation well in the area of the existing garage where wetness has been reported. The borings will be advanced to depths of up to 20 feet beneath the ground surface or refusal, whichever occurs first. Our explorations will include two (2) soil borings within the existing garage. These borings will be performed using a portable drill rig to a depth of up to 15 feet beneath the ground surface. We anticipate that the borings will be completed in three (3) days.

We will also observe test pits performed against the existing building's wall that exhibits wetness. We have assumed that the test pits will be performed by others. At your request, we have included in this proposal a separate cost item to perform a soil boring for a traffic signal mast arm on School Street.

We have included in this proposal a scope for performing a soil boring for the proposed traffic Signal mast arm on School Street. Our drilling subcontractor will apply for a permit and will post the necessary boing with the City of Brookline to perform a soil boring on School Street for the proposed mast arm. The boring will be advanced to a depth of 25 feet. If needed, this boring will be completed separately from the borings described above. We have budgeted one (1) additional day to complete this boring. At the request of the construction manager (CM), we have also included field time to observe one test put at the mast arm location. We understand that the test pit will be excavated by the CM.

Proposed Scope of Work

DD Explorations

1.1 Utility Clearance – LGCI will provide a field representative to stake the boring and test pit locations in the field. We also request that you provide us with a plan showing existing utilities at the site. We will contact Dig Safe Systems, Inc., and the Town of Brookline to assist the owner in locating underground utilities at the site. We request that a representative of the owner observe our marked exploration locations to clear them of private utilities. LGCI will not assume responsibility for damage to unmarked or mismarked underground features.

1.2 Test Pit Excavations – We have assumed that the test pits to be performed against the existing building to explore for the possible causes of the wetness inside the existing building will be performed by others. We request that the test pits be performed at the exterior of the existing building near where wetness has been reported. The test pits should extend to the bottom of the exterior wall.



1.3 Soil Borings – We will engage a drilling subcontractor who will perform standard penetration tests (SPT) and will obtain split-spoon samples at 5-foot intervals and at perceived strata changes in the exterior borings. No SPT will be conducted in the interior borings.

If we observe an environmental condition in the borings, we will halt the drilling and notify you. Excess drill cuttings will be left on site.

1.4 Groundwater Observation Wells – Our drilling subcontractor will install a groundwater observation well near the basement wall where wetness was reported inside the existing building.

1.5 Field Representative – LGCI will provide a field engineer at the site to coordinate and observe the borings and test pits, collect soil samples, and prepare field logs. Our field representative will also monitor the groundwater observation well installed at the site, including the groundwater observation well installed during our previous explorations.

1.6 Laboratory Testing – We will perform six(6) grain-size analyses on soil samples obtained from the explorations to assess the suitability of reusing the onsite materials as backfill.

1.7 Consult with MDS Regarding Wetness Inside Existing Building – We will interview school staff who are familiar with the wetness to inquire how often and to what extent the wetness is present at the site. We request that you provide us with the name(s) of such staff. We will also visit the site following a rainstorm, to observe if the wetness occurs following rain events.

1.8 Geotechnical Report – We will prepare and submit our geotechnical report electronically.

Our report will include:

- Summary of the subsurface investigation methods used;
- LGCI's borings logs and test pit;
- Plan showing approximate boring and test pit locations;
- Depth to groundwater, if encountered;
- Depth to refusal, if encountered;
- Description of the subsurface conditions;
- Laboratory test results;
- LGCI's opinion about the possible causes of the interior wetness and our recommendations for a remedy;
- LGCI's opinion about the feasibility of shallow foundations;
- Recommendation for net allowable bearing pressure;
- Recommendations for ground improvements, if needed;
- Construction considerations, including removal of unsuitable soils, groundwater control, suitability of reusing onsite materials as backfill, temporary support of excavation systems, and rock removal, if needed.

2. CD Phase Services



- 2.1 Review Drawings – We will coordinate with you, and we will review the geotechnical aspect of the foundation and civil drawings and provide written comments. We have budgeted twenty-four (20) hours for this task.
- 2.2 Prepare Specifications – We will prepare the Earth Moving and Ground Improvement Specifications. We have budgeted twenty (20) hours for this task.
- 2.3 Consultation – We have budgeted twenty-four (24) hours for general consultation with you during the DD and CD phases.

3. CA Phase Services

- 3.1 Kickoff Meeting – We will attend a kickoff meeting with the contractor to discuss scheduling and the contractor's construction sequence. We have budgeted six (6) hours for this task.
- 3.2 Contractor Submittals and RFIs – LGCI will assist MDS with the review of requests for information (RFIs) and contractor submittals related to geotechnical issues. We have budgeted eighty (80) hours for this task.
- 3.3 Site Visits to Observe the Subgrade of Footings and Slabs – We will provide a geotechnical field representative to observe the removal of the unsuitable materials, the ground improvements, if applicable, and the subgrade of footings and slabs. Our field representative will provide recommendations about the suitability of backfill materials. In addition, we would be pleased to attend site meetings regarding the foundation work, if requested. Our scope does not include observation of backfilling operations and field density testing. We understand that the owner will retain a separate testing agency to perform these services. We have assumed that the earthwork operations will require two hundred fifty (250) visits. We have budgeted ten (10) hours per visit.
- 3.4 Field Observation Reports, Review, and Coordination – We will provide a geotechnical field representative to consult with you and with the contractor during earthwork operations. Our field representative will prepare daily field reports containing a summary of our observations and a summary of the geotechnical recommendations made in the field. We have budgeted about one (1) hour per field report and one (1) hour per day for a senior engineer for coordination and review.

Recommendations for unsupported slopes, stormwater management, erosion control, pavement design, site specific liquefaction analyses, lateral load analyses of piles, slope stability analyses, and cost or quantity estimates are not included in our scope of work.

LGCI's scope of services does not include an environmental assessment for the presence or absence of wetlands or analytical testing for hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site, or mold in the soil or in any structure



**Proposal for DD, CD, and CA Geotechnical Services
Proposed Pierce Elementary School
Brookline, Massachusetts
LGCI Proposal No. 22127-Rev. 1**

at the site. Any statements regarding odors, colors, or unusual or suspicious items or conditions are strictly for the information of the client.

Proposed Schedule

Assuming that there are no delays with site access or other factors such as permitting, LGCI will begin scheduling the work upon receiving authorization in the form of a signed copy of this proposal. Our drilling subcontractor can mobilize to the site within about three (3) to four (4) weeks of receiving the authorization to access the site, or the utilities being cleared at our exploration locations, whichever occurs last. LGCI can provide you with preliminary boring logs and preliminary geotechnical recommendations within one week of completing the explorations. We will provide our geotechnical report about two to three weeks after the end of our explorations.

Project Fee

LGCI will perform the scope of services described in items 1.1 to 1.8, and in items 2.1 and 2.2 on a lump sum basis and the remainder of the services on a time-and-expenses basis. The breakdown of our fee is shown below.

SD/DD Phase Exploration Services and Geotechnical Report			
1.1a	Project Setup/Boring and Test Pit location Plan	580	
1.1b	Mark Borings and Test Pits in the Field	\$1,290	
1.1c	Utility Clearance	\$175	
1.2	Excavation Subcontractor (2 days) - BY OTHERS	\$0	
1.3	Drilling Subcontractor (3 days)	\$12,615	
1.4a	Install Groundwater Observation Well	\$450	
1.4b	Monitor Groundwater Wells (3 readings)	\$1,190	
1.5	Geotech. Rep. to Observe Borings and Test Pits	\$6,890	
1.6	Laboratory Testing	\$710	
1.7	Consult with MDS Regarding Wet Basement	\$2,330	
1.8	Boring and Test Pit Logs and Geo. Report	\$3,600	\$29,830
CD Phase - Specifications and Review Services			
2.1	Review Geo. Aspect of Found. Drawings	\$3,600	
2.2	RFIs and Submittals	\$3,600	
2.3	Consultation	\$4,500	\$11,700
CA Phase Services			
3.1	Kickoff Meeting	\$980	
3.2	Review Submittals and RFIs	\$13,120	
3.3	Field Visits (250) and Mobilization Cost	\$258,750	
3.4	Review, Coordination, and Field Reports	\$73,250	\$346,100
			<u>\$387,630</u>

* See below additional cost for performing a boring on School Street for the proposed traffic signal mast arm.



**Proposal for DD, CD, and CA Geotechnical Services
Proposed Pierce Elementary School
Brookline, Massachusetts
LGCI Proposal No. 22127-Rev. 1**

The additional cost for performing one (1) boring for the proposed traffic signal mast arm, including marking the boring location, calling Dig Safe, engaging a drilling subcontractor for one (1) day, applying for a street opening permit and posting the required bond, engaging a police detail, observing the soil boring, and providing recommendations for mast arm foundation design in accordance with the MassDOT's standard drawings titled: "Overhead Signal Structure & Foundation, Sheets 1 through 7," dated December 2015, will be **\$8,900**.

Additional consultation will be performed on a time and expenses basis using the following rates: \$102/hour for a field representative, \$127/hour for a geotechnical engineer, and \$150/hour for a senior geotechnical engineer.

No services beyond those described above would be provided without your prior knowledge and approval. If site conditions or your needs require a change in the scope of work, we will prepare for your approval a change order request that summarizes the changes to the project scope and fee. The fee is based on the following additional conditions:

- Our costs and fees indicated in this proposal are valid for a period of six months from the date of the proposal. Our unit rates will be increased by 4 percent per year after the first 6 months following the date of this proposal.
- LGCI will coordinate access to the site with you and with the school.
- We have assumed that the exploration locations will be cleared for private utilities by a representative of the property owner. Explorations not cleared by the owner, will require vacuum explorations at an additional fee, or will have to be abandoned.

Terms and Conditions

We propose to perform our work in accordance with the terms and conditions of our existing agreement (our proposal No. 20095-Rev. 2 dated December 23, 2020, revised on January 6, 2021, and signed by Ms. Margaret Clark of MDS on February 22, 2021. Your acceptance of this proposal by signing and returning one complete copy will form our agreement for these services and will serve as written authorization to proceed with the described scope of work.

LGCI trusts that the above proposal will be sufficient to meet your needs. If this proposal is acceptable, please sign and return a complete copy to LGCI. If you have any questions, please call us at (978) 330-5912.



Proposal for DD, CD, and CA Geotechnical Services
Proposed Pierce Elementary School
Brookline, Massachusetts
LGCI Proposal No. 22127-Rev. 1

Sincerely,

LAHLAF GEOTECHNICAL CONSULTING, INC.



Abdelmadjid M. Lahlaf, Ph.D., P.E.
Principal Engineer

Agreed to by (please type name): _____ **on (date):** _____

Company Name: _____

Signature: _____





Consulting
Engineers and
Scientists

February 7, 2023
Proposal 2202211

Ms. Margaret Clark
MDS/Miller Dyer Spears Architects
40 Broad Street, Suite 103
Boston, Massachusetts 02109

Dear Ms. Margaret Clark:

**RE: Proposal for Geothermal Engineering Services
Pierce Elementary School Project
Brookline, Massachusetts**

GEI Consultants, Inc. (GEI) is pleased to submit this proposal to provide geothermal engineering services for the proposed Pierce Elementary School located in Brookline, Massachusetts. As requested, this proposal provides our approach, scope and budget for geothermal engineering services including a test well program, well field design, and construction administration support.

Project Understanding and Approach

We understand that the Pierce Elementary School project includes the construction of a new approximately 182,000 square foot, 3-story school building. The project team has determined that a ground source heat pump (GSHP) system will be used to provide heating and cooling for the building.

We understand that in the Geothermal Feasibility Study, provided by CDM Smith, Inc., a geothermal closed-loop well field system was recommended for the project that includes 110 U-Bend wells at 20-foot spacing, each extending to a 600-foot depth.

We understand that the geothermal well field is proposed to be located in the Pierce School Playground area across School Street from the proposed new building. The Pierce School Playground consists of an asphalt basketball court, a baseball field located on the southern portion of the playground, and playground equipment located on the northern portion of the playground. The entire playground area covers approximately 107,000 square feet. The baseball field and basketball court alone can fit approximately 120 wells at a 20-ft well spacing, not including the northern portion of the playground. So, this location has sufficient area to fit the number of wells required for the well field as estimated in the feasibility study.

Each of the geothermal wells will consist of HDPE pipes grouted inside approximately 6-inch-diameter boreholes. The geothermal well field will be connected in circuits to manifolds inside approximately two to three geothermal circuit vaults in the proposed well field location. The main supply and return piping from each vault will be routed into the building for the connection to mechanical pipes to be designed by project HVAC engineer. These main supply and return pipes need to cross beneath School Street to connect to the building. GEI will provide well field design including vault specifications and building penetrations. We also recommend a test well program be performed to support the design of well field design. The recommended test well will match the type proposed for the well field so that the test well can eventually be integrated into the final well field as production well during construction. Generally, we do not recommend mixing different types of wells in the well field.

Permitting Understanding

We understand that the project may start the permitting process prior to the start of test well program. To assist with project planning, we offer the following information on well field permitting based on our experience on other similar projects in the region. The Massachusetts Department of Environmental Protection (MassDEP) categorizes geothermal wells (both open and closed loop) as Class V Injection Wells. Per MassDEP Regulations, as of December 2, 2016, the installation and operation of a Class V closed-loop GSHP well no longer requires the filing of a UIC Registration application with MassDEP, provided that the well has been installed and is operating in accordance with MassDEP's Guidelines for GSHP Wells, and provided that the well is not used to produce water. This change is based upon amendments to the MassDEP Ground Water Discharge Permit Program regulations, 314 CMR 5.00, that were promulgated on that date.

Other key permitting requirements for both test wells and final well field construction may include: 1) A Well Permit from the Town of Brookline Health Department; 2) Water Discharge Permit through Town of Brookline or Massachusetts Water Resources Authority for the discharge of groundwater produced during drilling of geothermal wells. We understand that the permits will be obtained by others.

Scope of Work

Based on our understanding of the proposed geothermal systems and the overall project design, we propose a scope of work consisting of the following:

- Test Well Installation and Thermal Conductivity Test:
 - Install one geothermal test well and conduct formation thermal conductivity test.
 - Provide a technical memorandum summarizing the test well program and findings of the formation thermal conductivity test.
- Geothermal Well Field Design:
 - Prepare a well field design based on the results of the thermal conductivity tests, final building heating/cooling loads, and the selected heat pump system.
 - Prepare contract drawings for the geothermal well field layout and details and prepare specifications.
 - Support the MSBA design package submissions at different design phases.
 - Assist with the bidding process for the geothermal well field construction.
- Construction Administration Services:
 - Provide construction administration services, including responses to submittals and RFIs, and part time field observation of the geothermal well field flushing, purging, flow, and pressure testing as well as system charging.
 - Provide support for project closeout.

Test Well Installation and Thermal Conductivity Test

The test well and thermal conductivity testing are important steps required to support the geothermal design. The test well not only will allow testing of thermal properties of the geologic formation for final sizing of the well field, but also provide useful information for construction considerations, like depth to bedrock, rock fractures, groundwater production, and borehole stability. This information can result in a more efficient well field design and reduce the risk during construction.

Considering the site plan, proposed well field location, and estimated well field size, we propose one geothermal test well to be installed at the proposed well field location during the Design Development (DD) phase, and formation thermal conductivity testing be conducted.

The geothermal test well will be about 6 inches in diameter and will be installed to a depth of approximately 600 feet. Steel casing will be installed to at least top of bedrock for borehole stability. A 1.25-inch-diameter SDR11 HDPE U-bend piping will be installed in the well upon completion of the drilling. The wells will be backfilled with grout with a thermal conductivity of 1.4 Btu/hr-ft-°F using tremie methods. At least 5 days after the completion of the test wells, a 48-hour thermal conductivity test will be conducted to evaluate formation thermal conductivity and ground temperature. After completion of testing, the wells will be temporarily covered with an irrigation box to allow for incorporation into the well field as production wells.

The test well program will include the following:

- GEI will develop specifications for the construction and installation of the geothermal test well and the in-situ thermal conductivity testing.
- GEI will plan and coordinate with the project team for the locations of the test well. GEI will mark the proposed test well location in the field and coordinate with the geothermal well drilling subcontractor to contact Dig Safe.
- GEI will engage a geothermal well drilling contractor to perform the installation of the geothermal test well and conduct the formation thermal conductivity testing.
- GEI will provide a field engineer for observation of the geothermal test well installation on a full-time basis. The field engineer will log the soil and rock formations encountered during drilling, drilling processes, and oversee the installation of the U-bend loop, grouting operations, and flushing, flow and pressure testing of loop. It is assumed that the installation of the test well will take up to 3 days to complete.
- GEI will coordinate and provide part-time observation of the formation thermal conductivity testing.
- GEI will attend up to two coordination meetings for the implementation and construction of the test wells and thermal conductivity testing.
- GEI will provide a test well log, including soil and rock formations encountered, groundwater production rate, rate of penetration, grouting information, etc. for inclusion in the Contract Documents. GEI will also review and provide a copy of formation thermal conductivity testing report prepared by the subcontractor who will conduct the thermal conductivity testing.
- GEI will provide a technical memorandum summarizing the test well program and findings of the formation thermal conductivity test.

For this proposal, we have made the following assumptions and exclusions for the test well program:

- Site access for the truck-mounted drill rig will be provided by the Owner. We understand that removal of fencing, curbs, tree, or other hardscapes will be conducted by the Owner if required.
- The Owner will coordinate the proposed test well location with the Conservation Commission for approval. Our drilling subcontractor will provide a silt fence around the drill rig. We understand that our drilling subcontractor will not provide construction fencing. Any additional stormwater controls required by the Conservation Commission are not included.

- Our drilling subcontractor will notify Dig Safe at least 72 hours before performing the work. We have not included costs for a utility locating company but could engage these services for an additional fee if needed.
- Disturbed areas will be backfilled with excavated materials. Re-seeding, sodding, or other surface restoration are not included.
- Each geothermal well will generate approximately 6 to 9 cubic yards of spoils. These spoils consisting mostly of wet drill cuttings will be loaded into an onsite dumpster(s) provided by the geothermal driller. We have assumed that spoils will be left at the site and spread in a non-landscaped area designated by the Owner or OPM.
- Drilling fluids and groundwater generated from the test well will need to be managed during the test well installation. It is assumed that the fluids will be managed through a combination of recharging into earth pits and tanks provided and installed by the drilling contractor.
- Assumption of 120 feet of bedrock depth for test well steel casing protection based on Driscoll School test well report indicated in the feasibility study, beyond which a unit casing cost of \$46/foot applies.
- Upon completion of the test well program, an irrigation box will be installed to protect the well head. Installation of manhole and cover is assumed to not be required and is not included in the proposal.
- Management of contaminated soil/groundwater or decontamination of drilling equipment is not required.
- Prevailing wages do not apply to this project.
- No bond or retainage is assumed.

Geothermal Well Field Design

GEI will conduct analyses and design the geothermal well field based on the heating and cooling loads provided by others and the results from the geothermal test well.

During the final design stage, if the design well depth needs to be adjusted to accommodate higher design heating/cooling loads or constraints on well field area, it can be increased to a depth up to 700 feet. Well depths beyond 700 feet typically are not recommended as drilling may become more challenging, particularly if a zone of heavily fractured rock with high yielding groundwater is encountered. In the case that the design well depth needs to be increased, say from 600 feet to 700 feet, the test well can still be integrated into the final well field as a production well with minimal impact on the well performance. We do not anticipate extended well depths will be required based on our experience on the project.

Specifically, the design tasks will include the following:

- Review heating and cooling loads, proposed heat pump performance data, and HVAC system operation and design parameters, which will be provided to us by HVAC designer.
- Design the geothermal well field based on loading and equipment information, formation thermal conductivity testing results, and site layout. The design will include sizing the geothermal well field, pipe sizing, grout material, well configuration, and well field layout.
- Prepare drawings for geothermal well field layout and details. We have assumed that we will be provided the necessary base survey and all existing and new site utility plans in AutoCAD format for the development of the geothermal well field layout.

- Prepare specifications for the geothermal well field, including the specification for the geothermal circuit vault and geothermal pipe penetration into the building. We have assumed that specifications for site preparation, earthwork, dewatering and drainage, material disposal, all civil and landscape site work, plumbing or indoor HVAC system and piping will be provided by others.
- Attend up to six meetings with project team as requested.
- We have assumed that all HVAC design, including all mechanical equipment, piping, valves, and other appurtenances inside the building will be performed by others.
- We have budgeted to submit one set of drawings and specifications at the end of the DD phase, one set for bidding, and one set at the end of the Construction Documents (CD) phase. We will support MSBA submissions on well field design.

Construction Administration Services

The performance of the geothermal well field system depends heavily on the quality of the construction and installation. As part of the nature of underground construction, quality control must be implemented at the time of construction because post-construction testing cannot verify the quality of the installation that is buried hundreds of feet below ground. Based on our experience with large geothermal well field construction on similar types of projects, construction observation throughout the installation of the geothermal wells and system testing is critical to proper construction and to facilitate modifications during construction that are commonly required due to the complexity of geothermal well drilling and system installation.

GEI will provide field observation on some critical construction activities throughout the well field installation to observe that the quality control is properly implemented and documented. These critical construction activities including grouting, looping, and flushing, flow testing, pressure testing of the loop system. GEI will not provide full-time field observation for drilling but will review driller logs submitted by well field contractor.

Our construction services include the following:

- GEI will assist with the bidding process and respond to Contractor RFIs and submittals.
- GEI will review drilling logs and inspection reports to confirm proper documentation of the geothermal well construction.
- GEI will provide an average of one and half days per week for the observation of grouting, looping and associated testing on individual loops throughout the well field construction.
- GEI will observe and document the flushing, purging, flow, and pressure testing of each circuit and for the pressure test of the system at the vaults. We have assumed 4 days to flush, purge, flow and pressure test the circuit piping and 2 days to conduct final flushing and performance test. We have included an allowance for GEI to provide 6 days of field observation during flushing, purging, flow and pressure testing of the geothermal system.
- GEI will observe and document the system charging with propylene glycol and deionized water. We have included an allowance for GEI to conduct two site visits for the system charging.
- GEI will attend up to six additional site visits or meetings with the General Contractor, Subcontractor, OPM and design team during construction for coordination.
- GEI will provide support for project closeout.

We have assumed the following for providing field observation on some critical construction activities:

- A total of 110 U-bend wells, each extending to 600 feet deep.
- Two drill rigs to be used for the entire construction period.
- A combined production rate of five wells per week, a total of 22 weeks for the well field construction.

If the combination production rate is different from our assumption of five wells per week, associated costs on the field observation will be adjusted.

Costs

We estimate the cost of geothermal services as follows:

Test Well Program			
GEI Labor	\$24,000		
Test Well Installation and Testing Subcontractor	\$43,000		
Geothermal Well Field Design Services	\$35,000		
Geothermal Construction Administration Services	\$106,000		
Total	<u>\$208,000</u>		

REIMBURSABLE

\$15,000 DD
\$20,000 CD

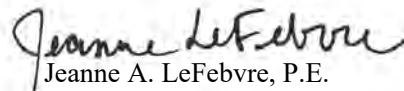
BASE FEE

Our fee is payable on a lump sum basis. Invoices will be submitted monthly based on the work performed at the end of the billing cycle. Our work will be performed in accordance with the attached Standard Professional Services Agreement (Attachment A). If this proposal is acceptable, please return a signed copy of the Agreement which will serve as our contract and authorization to proceed with the work.

We will work cooperatively and effectively with your design team to leverage our expertise to provide practical and effective geothermal engineering services that match the needs of the project. GEI sincerely appreciates this opportunity to contribute to this exciting school development project. If you have any questions or require additional information, please do not hesitate to contact Jerry Wang at 617-909-1077.

Very truly yours,
GEI CONSULTANTS, INC.

Jerry Wang, Ph.D., P.E.
Project Manager, Tunneling & Geothermal Lead


Jeanne A. LeFebvre, P.E.
Geotechnical Project Manager

List of Attachments:

Attachment A. GEI Standard Professional Services Agreement

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February 21, 2023

Margaret Clark, RA, LEED AP BD+C, WELL AP, MCPPO
MDS / Miller Dyer Spears
99 Chauncy Street, 8th Floor
Boston, MA 02111
617-338-5350
mclark@mds-bos.com

Re: **Existing Conditions Survey,
Boring/Test Pit Locations and
SUE Investigations
Pierce Playground
School Street
Brookline, MA
JN 2201216**

Dear Margaret,

Pursuant to your request, we are pleased to submit our proposal to provide land surveying services at the aforementioned site. Survey limits and SUE investigation limits are outlined on separate attached figures.

In order to achieve your project's goals, we propose to provide the following:

Task 1 – Existing Conditions Survey

- Perform an existing conditions survey of a portion of Pierce Playground, shown as the outlined area northwest of School Street on the attached SUE Investigation Limits figure.
- Perform an existing conditions survey of a portion of School Street, outlined as area 4 on the attached figure.
- Expand survey of Area 1 on the northwest side of School Street to include sidewalks, fences, steps, buildings and door threshold elevations.
- Expand survey at the north corner of Area 1 to include 25' northeasterly on Aspinwall Ave and northwesterly on Harvard Ave, highlighted on the attached figure.
- Perform research at the Brookline Assessor's and Engineering Departments.
- Perform field survey to include planimetric and topographic features, including but not limited to buildings, ledge, isolated trees (6" caliper & larger), wooded areas, landscaped areas, walks, walls, curbs, tree wells, signs, fences, light poles, steps, paved areas, spot grades, entrance grades, 0.5' contours, surface utilities and inverts of sewer and drain structures. Other subsurface utilities will be compiled from record plans.

- Subsurface improvements/utilities will be located directly by survey to the extent that they are accessible from the surface or marked on the ground by Dig-Safe or the various utility companies. Subsurface features that cannot be located by ground survey will be shown from record documents, if available. While every effort will be made by our staff to accurately transfer the data from the aforementioned record plans of public or private agencies, we will not be able to make any statement regarding the accuracy or completeness of the information shown on the record plans.
- Reference Town of Brookline Base as the vertical datum and NAD83 as the horizontal datum.
- Compile our survey to at 1":20' scale and supply a digital file in AutoCAD Civil 3D and PDF copies for your files.
- Perform our survey work in compliance with the Code of Massachusetts Regulations 250 CMR 6.0 Land Surveying Procedures and Standards.
- Field survey to be conducted in snow free conditions.

Task 2 – Locate Tannery Brook Drain, Test Pits and Borings

- Locate 60" Tannery Brook drain line from test pit locations, add to base mapping.
- Locate test pits in School St including crossing area between Pierce School and Pierce Playground, add to base mapping.
- Locate additional borings or test pits on the school site, add to base mapping.
- Task 2 is allocated 4 days for field survey and associated office set up time, field survey processing and drafting.

Task 3 – SUE Investigations

- Provide Subsurface Utility Engineering (SUE) Services in the form of Quality Level B in accordance with ASCE 38-22 Standards.
- This is a Full SUE investigation. Electromagnetism, and GPR will be used to locate metallic utilities/anomalies.
- Locating all accessible utilities inside the area outlined below.
- *Irrigation lines are plastic and are normally not part of the investigation, an attempt to mark out the lines will be made and the results will be conveyed.
- SUE is performed in accordance with the ASCE 38-22 standards and the American Public Works Association. This will help enhance the utilities surveyed/information based on the Quality Level (D-A) requested.

- Any hinderance to the SUE investigation, e.g., no Quality Level D information (record drawings), limited/no access to utility features (Utility structures, valves, utility rooms in buildings, etc.), and other above ground obstacles (parked cars, construction trailers, sites under construction, snow, debris piles), can affect the investigation.
- GPR survey areas must be open and free of obstructions. The presence of surface obstructions prevents full GPR survey coverage and adversely impacts data interpretation. Please remove all vehicles and other large obstacles prior to Feldman's arrival on site.
- GPR is an indirect method. Ground-truthing of results by vacuum excavation or test pit is recommended (ASCE 38-22 Quality Level A designation).
- Any Permit Cost, Coordination, and Execution is NOT Feldman's responsibility. The client can request Feldman take on this task, in which case time and costs associated with the process will be added to the overall proposal fee. Feldman does not take responsibility for the permits processing time affecting project start dates or deadlines.
- Perform our survey work in compliance with the Code of Massachusetts Regulations 250 CMR 6.0 Land Surveying Procedures and Standards.
- Deliverables must be discussed and agreed upon before the project starts. Summary reports, AutoCAD DWG files, PDF sheets, Revit 3D modeling products, KMZ Google Earth files, pictures, and videos can be delivered.
- Deliverable comments and review time from draft deliverable date (emailed) must be completed by the client within 30 days. Feldman will send an email to ask if any comments need to be address before that time has expired. If review time goes beyond the 30-day mark, the client agrees to pay Feldman Per Diem for further deliverable comments and review.

The fee for the work outlined above will be:

Task 1 – \$23,000 – included 1 day police detail for invert investigations

Task 2 - \$10,800

Task 3 - \$16,000

Please note that we may need to revise the terms of this proposal if we do not receive authorization by July 31, 2023.

Work can be scheduled upon receipt of written authorization to proceed in accordance with the terms of this proposal. We anticipate that a draft plan can be delivered within 6-8 weeks of receipt of said authorization. Please sign, date and return this proposal to us as your authorization to proceed and we will schedule the fieldwork to begin accordingly.

For your protection we maintain General Liability, Automobile Liability, Workers Compensation and Professional Liability (errors and omissions) Insurance. Invoices are issued monthly and will be due upon receipt.

We look forward to working with you towards the successful completion of your project.

Very truly yours,

FELDMAN GEOSPATIAL

Accepted By: _____



Kevin Arsenault, PLS

Project Manager

karsenault@feldmangeo.com

Firm _____

Title: _____

Date: _____

For an efficient billing process please fill out the following:

Billing address if different from above: _____

Accounts Payable Contact and Email: _____

Accounts Payable Telephone Number: _____

Your Job or PO Number: _____

Any Other information to be included with our invoice: _____

SURVEY LIMITS



SUE INVESTIGATION LIMITS



AGREEMENT FOR PROFESSIONAL SERVICES

BETWEEN

VANASSE & ASSOCIATES, INC.

AND

MDS/MILLER DYER SPEARS ARCHITECTS

PROJECT NO. 9642

February 13, 2023

This Agreement is composed of Parts I and II. Part I includes details of the services to be performed, timing of the services, and compensation. Part II (attached) contains the General Terms and Conditions of Agreement, which are the general terms of the engagement between MDS/Miller Dyer Spears Architects hereinafter called the "CLIENT," and Vanasse & Associates, Inc., hereinafter called the "CONSULTANT."

COMPENSATION

1. The total estimated compensation for performing the Scope of Services pertaining to Tasks 1 through 12 described in detail in Part I of this Agreement is estimated below:

Labor Fee ¹	\$169,500
Traffic Signal Subconsultant	8,000
Traffic Counts	1,400
Survey	<u>By Others</u>
TOTAL ESTIMATED FEE	\$178,900

2. The detailed estimate for the Labor Fee portion is as follows:

<u>Tasks</u>	<u>Labor Fees</u>	
1 Data Collection and Base Plans	\$2,500	← REIMBURSABLE
2 Traffic Analysis & Sight Distance Evaluation	10,000	
3 Preliminary Engineering	35,000	← BASE FEE \$37,000 DD \$43,000 CD
4 Environmental Permit Documents	--	
5 Final Engineering	41,000	
6 Right-of-Way and Layout	--	
7 Project Meetings/Coordination	4,000	
8 Abutter Coordination	--	
9 Bidding and Negotiating	2,000	
10 Final Traffic Signal Layout Plans	--	
11 Construction Services ²	75,000	
12 Utility Coordination	<u>--</u>	
TOTAL LABOR FEE	\$169,500	

¹Labor fee is defined as the fee for direct labor, overhead, and profit ~~exclusive of expenses.~~

expenses are not
reimbursable



3. Services rendered in Tasks 1 through 6 will be invoiced on a percentage of completion against the Total Labor Fee with the exceptions noted above. Services rendered in Tasks 7 through 12 will be invoiced on an hourly basis using the CONSULTANT's standard billing rate schedule in effect at the time services are performed.
4. The CONSULTANT will not exceed the total estimated fee as stated herein without the written approval of the CLIENT.
5. ~~The CONSULTANT shall be reimbursed for subconsultants, and expenditures made specifically for the project, such as printing and reprographics, travel and subsistence, traffic counts and other data collection, telephone, shipping, postage, courier services, equipment rentals, purchase of maps and similar documents, soil investigations, etc. at 1.10 (10%) times the actual costs.~~

delete this paragraph



PART I – SCOPE OF SERVICES

The CONSULTANT shall perform in accordance with the Terms and Conditions of this Agreement the services hereinafter described.

Description of Services

The CLIENT has retained the CONSULTANT to provide planning and engineering services involved in the design of roadway improvements and traffic control for the Proposed School Street Pedestrian improvements associated with the revisions to the John R. Pierce School in Brookline, Massachusetts.

The CONSULTANT, acting as the representative of and a consultant to the CLIENT, shall perform the engineering services involved in the design of the Proposed School Street Pedestrian improvements in Brookline, Massachusetts. The design shall include services involved with the production of construction documents. The services include the following:

- Engineering research and base plan preparation
- Preliminary design
- Construction plans, specifications, and estimate
- Construction services

Project Limits and Description of Improvements

The Limits of work begin at the intersection of School Street and Washington Street and extend east approximately 800 feet to the intersection of Harvard Street. Proposed improvements include the following:

School Street

- Narrow School Street to provide a single travel lane in each direction; and a raised separated bike lane and sidewalk with landscaped buffer on both sides of School Street. Install radar feedback speed signs on School Street east of Washington Street and west of Harvard Street – two (2) locations.
- Install pedestrian signal and raised crosswalk on School Street; and install speed humps on both the eastbound and westbound approaches to the raised crosswalk.
- Perform pavement milling and overlay and install pavement markings and signing.

School Street at Washington Street

- Modify the existing traffic signal equipment to accommodate the revised geometry on School Street.
- Install pavement markings and signing to accommodate proposed pedestrian and bicycle crossings, as required.
- Optimize timing, phasing, and vehicle and pedestrian clearance calculations.

School Street at Harvard Street

- Modify the existing traffic signal equipment to accommodate the revised geometry on School Street.
- Install pavement markings and signing to accommodate proposed pedestrian and bicycle crossings, as required.



- Evaluate installation of bike boxes
- Optimize timing, phasing, and vehicle and pedestrian clearance calculations.

Harvard Street at Proposed School Driveway

- Evaluate the sight distance at the location of the proposed garage driveway at Harvard Street to assess feasibility of this proposed new access.

Design efforts will concentrate on intersection and roadway improvements. Included as part of these improvements will be geometric modifications, narrowing of the existing pavement cross section, mill & overlay, utility system adjustments, drainage system work, traffic signals, signs and pavement markings. Improvements shall conform to the concept plan entitled: School Street Option 1 Two Way Traffic Calmed Vehicle Travel, prepared by Brookline Engineering/Transportation Division.

It is understood that the Scope of Services under this Agreement can be changed by actions of the Town of Brookline and CLIENT, Changes, modifications, schedule revisions, etc. made by the Town or CLIENT can result in changes in the scope of work and, therefore, compensation to associated tasks.

The services to be performed under this Agreement shall be performed in twelve (12) separate tasks.

1.0 Data Collection and Base Plans

1.1 **Highway Survey** – The CONSULTANT will provide a detailed survey request for additional survey required to prepare the base plans and develop the design plans for the proposed off-site improvements. The CLIENT shall conduct a topographic survey within the project limits. The CLIENT shall perform the following:

- Establish horizontal and vertical control.
- Establish coordinates and closed set of base lines for streets. Reproduce historic base lines where possible.
- Locate surface detail including drainage and utility features, signs, driveways, trees, fences, walks, mailboxes, etc.
- Locate edge of pavement, shoulders, sidewalks, pavement markings, etc.
- Provide a digital terrain model (DTM) from which the CONSULTANT can produce existing ground cross sections at 50-foot intervals, at driveways and critical locations.
- Locate utilities that are visible or marked out in the field.
- Locate all wetland flags delineating wetland boundaries.
- Obtain pipe sizes, invert and rim elevations, and detail sketches for drainage and sanitary structures.
- Reduce, check, and plot survey data at appropriate scale. Surface detail shall include buildings, doorways, curbs, sidewalks, utility poles, utility covers, Rights-of-Way (ROWs), etc.

1.2 **Utility Research.** The CLIENT shall obtain plans from private and public utilities within the project limits to confirm the information provided by survey on the prepared base plans. Subsurface utilities will be located based on record data and will be approximate.



- 1.3 **Right-of-Way Research.** The CLIENT shall research the roadway layout to verify information provided by survey within the project limits for information regarding parcel ownership, deed restrictions, utility easements, restrictive covenants, etc., as required.
- 1.4 **Base Plan Preparation.** The CONSULTANT shall field check the survey provided and will coordinate with the CLIENT relative to any missing or incomplete elements discovered. The CONSULTANT will then incorporate additional detail and configure the survey as required to prepare a base plan conforming to MassDOT submission guidelines.

2.0 **Traffic Analysis and Sight Distance Evaluation**

- 2.1 Perform a detailed Traffic Signal Warrants Analysis (TSWA) for the proposed pedestrian crosswalk intersection with School Street in accordance with the methodology and procedures outlined in the Manual on Uniform Traffic Control Devices (MUTCD). Traffic volume on School Street will be collected for a twelve-hour (7:00 AM to 7:00 PM) weekday period while school is in session. The number of at-grade pedestrian crossings as well as above-grade pedestrian crossings will also be collected during this time period. Coordination with the Pierce School staff will be required to ensure a “typical” day is observed for the counts. Pedestrian Volume (Warrant No. 4), School Crossing (Warrant No.5), and Coordinated Signal System (Warrant No. 6) will be reviewed under this analysis.
- 2.2 Conduct traffic analysis to determine effects on traffic flow resulting from installation of at grade signalized pedestrian crossing over School Street. Utilize previously collected traffic count data as available for the following locations:
 - School Street and Aspinwall Ave at Harvard Street
 - School Street at Washington Street
 - School Street at Proposed pedestrian crossing

Analysis will focus on weekday morning and weekday afternoon peak periods and will also review proposed changes to School Street approaches at both intersections due to the geometric changes contemplated as part of the Brookline DPW concept plan for School Street improvements.
- 2.3 Provide a sight distance evaluation for the intersection of Harvard Street at the proposed School Driveway (garage driveway) for both vehicles and pedestrians (pedestrian sight distance as per Town of Brookline Zoning By-Law requirements, Section 6.04.4.f.1), and depicted on a site plan using sight triangles.

3.0 **Preliminary Engineering**

- 3.1 **Conceptual Improvement Plan.** The CONSULTANT will evaluate the proposed Conceptual Improvement Plan provided by the Town and prepare up to two (2) concept alternatives including plans and typical sections consistent with State and Federal guidelines and standards for roadway, pedestrian and bicycle accommodations for submission to the CLIENT and the Town for review. The plan will be prepared based on the updated survey information and shall depict the following preliminary details:
 - Roadway layout
 - Pavement markings and signing
 - Typical sections (roadway, sidewalk, bike lanes/shared use path, landscape buffers, etc.)



FORM OF AGREEMENT

BETWEEN

MDS/MILLER DYER SPEARS ARCHITECTS
99 Chauncy Street, 8th Floor
Boston, MA 02111

(CLIENT)

AND

VANASSE & ASSOCIATES, INC.
35 New England Business Center Drive, Suite 140
Andover, MA 01810
(CONSULTANT)

Date: February 13, 2023

For the Following Project:

Proposed School Street Pedestrian Improvements

in

Brookline, Massachusetts

The CLIENT and CONSULTANT agree as follows:



- Traffic calming measures (raised crosswalks and speed humps)
- Traffic signal layout
- Schematic drainage and utility modifications
- Right-of-way (approximate)
- Project limits

to correspond to A/E team's Design Development package

3.2 **Preliminary Design (25% Plans)** Based on the preferred concept plan selected under Task 3.1, the CONSULTANT will prepare the preliminary design plans for submission to the Town of Brookline for review and comment. The CONSULTANT will perform the following services:

- Prepare graphic geometrics of street and intersection alignment including the raised/separated bike lanes, sidewalks, wheelchair ramps and crosswalks.
- Prepare typical sections, pavement marking and signing plans, and top line cross sections for the proposed School Street improvements.
- Prepare design for the proposed raised crosswalk and pedestrian signal including basic signal layout, phasing and timing.
- Prepare design for the proposed pedestrian and bicycle improvements at the School Street/Washington Street and School Street/Harvard Street intersections, including pavement markings and signing and traffic signal plans and data sheets for the proposed changes to the traffic signal timing and vehicle and pedestrian clearance intervals.
- Define project limits, construction materials, and conceptual details.
- Outline Right-of-Way impacts, if any.

3.3 **Technical Traffic Memorandum.** The CONSULTANT shall prepare an abbreviated traffic report addressing intersection operations with and without the proposed traffic signal timing changes, including:

- Capacity and level-of-service analyses of intersections.
- Geometric/lane configuration analysis.

3.4 **Temporary Traffic Control Plans** – Prepare preliminary temporary traffic control plans that will permit continuous access to adjacent properties as well as carry through traffic without excessive delay during construction.

3.5 **Preliminary Estimate.** A preliminary construction cost estimate will be prepared. Cost at this stage will be approximate.

4.0 **Environmental Permit Documents (Not in Contract)**

5.0 **Final Engineering**

Following approval of the proposed preliminary design plans by the Town, the CONSULTANT shall proceed with Final Engineering as outlined below. The Scope of Services and Compensation for Final Engineering may be revised prior to commencing work to reflect any increased scope of work or design effort at this stage.



5.1 **Soils Investigation.** The CONSULTANT shall establish locations of necessary soil explorations for the project area. **Cost for police details shall be paid for by the CLIENT.** Included in this effort will be the following:

- Establish locations for borings and test pits for all proposed traffic signal mast arms and develop location plan for the explorations.
- Provide general specifications for types of borings to be performed.
- Analyze results of exploration program.
- Include soil borings in the Special Provisions for the project.
- Observe borings.

to correspond to A/E team's
60% CD package

5.2 **Final Design – 90% Plans and Specifications.** The CONSULTANT in the advancement of the final design for the project shall prepare the 90% Design Submission for review and comment by the Town.

In the development of the final design and the preparation of the contract plans and specifications, the CONSULTANT shall perform the following tasks:

5.2.1 **Response to Comments** - Review and prepare response to the 25% design comments issued by the Municipality.

5.2.2 **Roadway Design** – Provide design plans and calculations for:

- Construction/materials
- Layout and lane configuration
- Raised pedestrian crossing and speed humps
- Sidewalk, bike lanes and landscape buffers
- Traffic signal design, phasing and timing
- Grading and drainage
- Pavement marking and signing
- Cross sections

5.2.3 **Utilities** – Coordinate with the project team and Town for any public utility connections or modifications required within the right-of-way

Coordination with private utility companies is not included in the scope of work. Should private utilities require relocation and/or modification associated with the proposed roadway improvements, an amendment for additional services will be submitted to the CLIENT for authorization prior to proceeding with work.

5.2.4 **Special Provisions** – Design work will be based on the current edition of the MassDOT (formerly MassHighway) Standard Specifications for Highways and Bridges and Supplemental Specifications to the Standard Specifications. The CONSULTANT shall prepare Special Provisions for construction materials and procedures not covered by the MassDOT Standard or Supplemental Specifications. **Should the Town require CSI format, an additional fee will be required for the engineering services. This additional fee is estimated to be \$15,000.**



5.2.5 **Construction Cost Estimate** – Prepare a quantity estimate and an engineer's itemized cost estimate based on the MassDOT Standard for the proposed improvements.

5.2.6 **Temporary Traffic Control Plans** – Prepare temporary traffic control plans that will permit continuous access to adjacent properties as well as carry through traffic without excessive delay during construction. to correspond to A/E team's 90% CD package

5.3 **Final 100% Plans, Specifications and Estimate (PS&E)** - The CONSULTANT shall prepare the Final 100% PS&E Submission for Town review and comment. The CONSULTANT shall review and prepare response to the 90% design comments issued by the Town, prepare final revisions to the plans, specifications and cost estimates.

5.4 **Final Construction Documents.** The CONSULTANT shall prepare final construction documents including plans, specifications and cost estimate submission to the CLIENT for use in soliciting construction bids.

6.0 Right-of-Way and Layout (Not in Contract)

7.0 Project Coordination/Meetings

7.1 **Project Coordination/Meetings.** The CONSULTANT will be available to attend project meetings with the CLIENT. Services include coordination, written correspondence, meeting preparation and attendance, supporting graphics (when required), travel, and documentation in the form of meeting notes.

7.2 **Public Meetings/Hearings.** The CONSULTANT will be available to attend public meetings/hearings with the CLIENT. Services include coordination, preparation, travel, attendance, supporting graphics (when required), and documentation in the form of meeting notes. Public hearings are assumed as follows:

- Preliminary Design Public Hearing

7.3 **Agency Review Meetings.** After the delivery of each submission to the Town , the CONSULTANT will be available to attend agency review meetings with the Town during the review of project plans and reports. Design submissions are scheduled in as follows:

- Preliminary Design – 25% Plans and Technical Traffic Memorandum
- Final Design – 90% Plans and Specifications
- Final Design – Final 100% Plans, Specifications and Cost Estimate (PS&E)

Services provided during these tasks typically include:

- Liaison with the Municipality during design development.
- Attendance at review meetings and/or site visits.
- Written response to the Municipality and other agency comments.
- Follow-up with the Municipality and local officials to expedite the review process.



8.0 Abutter Coordination (Not in Contract)

9.0 Bidding and Negotiating

The CONSULTANT shall perform the following tasks:

- 9.1 Attend the pre-bid and bid opening meetings, prepare bid tabulation sheets, and assist the CLIENT in evaluating bids or proposals.
- 9.2 Prepare responses to contractor questions and issue addenda as appropriate to interpret, clarify, and expand the Bidding Documents.

10.0 Final Traffic Signal Layout Plans (Not in Contract)

11.0 Construction Services

Construction services will be provided based on a time and expenses basis of payment.

- 11.1 **Shop Drawings.** The CONSULTANT shall respond to requests for information (RFI) and review and approve Shop Drawings, samples, and other data that Contractor(s) are required to submit, but only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Such reviews and approvals or other actions shall not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions and programs incident thereto.

11.2 Construction Observation.

The fee for construction observation is based on provision of full-time observation services at 40 hours/week for an estimated construction duration of 12 weeks. The CLIENT agrees to the following in connection with observing the work of Contractor(s) while it is in progress:

- 11.2.1 The CONSULTANT shall visit the site at intervals appropriate to the various stages of construction as the CONSULTANT deems necessary to observe, as an experienced and qualified design professional, the progress and quality of the various aspects of Contractor(s)' work. Based on information obtained during such visits and observations, CONSULTANT shall endeavor to determine in general if such work is proceeding in accordance with the Contract Documents. The CONSULTANT shall keep the CLIENT informed of the progress of the work.
- 11.2.2 The purpose of the CONSULTANT's visits to the site will be to enable the CONSULTANT to better carry out the duties and responsibilities assigned to and undertaken by the CONSULTANT during the Construction phase, and in addition, by exercise of the CONSULTANT's efforts as an experienced and qualified design professional, to provide for CLIENT a greater degree of confidence that the completed work of Contractor(s) will conform generally to the Contract Documents and that the integrity of the design concept as reflected in the Contract Documents has been implemented and preserved by Contractor(s). On the other hand, the CONSULTANT shall not, during such visits or as a result of such observations of Contractor(s)' work in progress, supervise, direct, or have control over Contractor(s); nor shall the CONSULTANT have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor(s), for safety precautions and programs incident to the work of Contractor(s), or for



any failure of Contractor(s) to comply with laws, rules, regulations, ordinances, codes, or orders applicable to Contractor(s) furnishing and performing their work. Accordingly, the CONSULTANT can neither guarantee the performance of the construction contracts by Contractor(s); nor assume responsibility for Contractor(s) failure to furnish and perform their work in accordance with the Contract Documents.

- 11.2.3 **Defective Work.** During such visits and on the basis of such observations, CONSULTANT may disapprove of or reject Contractor(s) work while it is in progress if CONSULTANT believes that such work will not produce a completed project that conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the project as reflected in the Contract Documents.
- 11.2.4 **Interpretations and Clarifications.** The CONSULTANT shall issue necessary interpretations and clarifications of the Contract Documents and in connection therewith, prepare work directive changes and change orders as required.
- 11.2.5 **Tests.** The CONSULTANT shall have authority as the CLIENT's representative to require special testing of the work. The CONSULTANT shall also receive and review all certificates of observations, testings, and approvals required by laws, rules, regulations, ordinances, codes, orders, or the Contract Documents (but only to determine generally that their content complies with the requirements of, and the results certified indicate compliance with, the Contract Documents).
- 11.2.6 **Disputes between CLIENT and Contractor(s).** The CONSULTANT shall act as initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work thereunder and make decisions on all claims of CLIENT and Contractor(s) relating to the acceptability of the work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of the work. The CONSULTANT shall not be liable for the results of any such interpretations or decisions rendered in good faith.
- 11.2.7 **Payment Requisition.** Based on the CONSULTANT's on-site observations as an experienced and qualified design professional and on review of payment requisitions and the accompanying data and schedules:
- The CONSULTANT shall determine the amounts owed to Contractor(s) and recommend in writing payment(s) to Contractor(s) in such amounts. Such recommendations of payment will constitute a representation to CLIENT, based on such observations and review, that the work has progressed to the point indicated, and that, to the best of CONSULTANT's knowledge, information, and belief, the quality of such work is generally in accordance with the Contract Documents. This is subject to an evaluation of such work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, and to any other qualifications stated in the recommendation. In the case of unit price work, CONSULTANT's recommendations of payment will include final determinations of quantities and classifications of such work (subject to any subsequent adjustments allowed by the Contract Documents).



- By recommending any payment, the CONSULTANT will not, thereby, be deemed to have represented that exhaustive, continuous, or detailed reviews or examinations have been made by the CONSULTANT to check the quality or quantity of Contractor(s) work as it is furnished and performed beyond the responsibilities specifically assigned to CONSULTANT in this AGREEMENT and the Contract Documents. CONSULTANT's review of Contractor(s)' work for the purposes of recommending payments will not impose on the CONSULTANT responsibility to supervise, direct, or control such work or for the means methods, techniques, sequences, or procedures of construction or, safety precaution or programs incident thereto or Contractor(s)' compliance with laws, rules, regulations, ordinances, codes, or orders applicable to their furnishing and performing the work. It will also not impose responsibility on CONSULTANT to make any examination to ascertain how or for what purposes any Contractor has used the moneys paid on account of the Contract Price, or determine that title to any work, materials, or equipment has passed to CLIENT free and clear of any lien, claims, security interests or encumbrances, or that there may not be other matters at issue between CLIENT and Contractor that might affect the amount that should be paid.

11.2.8 **Contractor(s)' Completion Documents.** The CONSULTANT shall receive and review maintenance and operating instructions, schedules, guarantees, bonds and certificates of observation, tests and approvals which are to be assembled by Contractor(s) in accordance with the Contract Documents. However, CONSULTANT's review will be only to determine that their content complies with the requirements of the Contract Documents; in the case of certificates of observation, tests, and approvals, the results certified indicate compliance with the requirements of the Contract Documents. The CONSULTANT shall transmit Contractor's Completion Documents to CLIENT with written comments.

11.2.9 **Observations.** The CONSULTANT shall conduct observations to determine if the work is substantially complete and a final observation to determine if the completed work is acceptable so that CONSULTANT may recommend, in writing, final payment to Contractor(s) and may give written notice to CLIENT and the Contractor(s) that the work is acceptable (subject to any conditions therein expressed). However, such recommendations and notices will be subject to the limitations expressed in paragraph 11.2.7.

11.2.10 **Limitations of Responsibilities.** The CONSULTANT shall not be responsible for the acts or omissions of any Contractor, or of any subcontractor or supplier, or any of the Contractor(s), or subcontractor's or supplier's agents or employees, or any other persons (except CONSULTANT's own employees and agents) at the site or otherwise furnishing or performing any of the Contractor(s)' work. However, nothing contained in paragraphs 11.2.1 through 11.2.10 inclusive shall be construed to release the CONSULTANT from liability for failure to properly perform duties and responsibilities assumed by CONSULTANT in the Contract Documents.

11.3 **As-Built Drawings.** The Contractor shall prepare a set of reproducible record prints of drawings showing those changes made during the construction process, based on the marked-up prints, drawings, and other data furnished by Contractor(s).



12.0 Utility Coordination (Not in Contract)

Submissions

The following submissions related to specific tasks shall be made by the CONSULTANT.

- Task 1: Data Collection and Base Plans.** At the completion of this Task, the CONSULTANT will provide the CLIENT with a copy of the base plans, if requested.
- Task 2: Traffic Signal Warrants Analysis.** At the completion of this Task, the CONSULTANT will provide the Final Traffic Signal Warrants Analysis.
- Task 3: Preliminary Engineering (25% Design Plan).** At the completion of this Task, the CONSULTANT will provide preliminary design plans and Technical Traffic Memorandum.
- Task 4: Final Engineering.** At the completion of this Task, the CONSULTANT will provide the following:
- 90% Design Submission – response to the 25% design comments; and construction plans, special provisions, preliminary quantity take offs and cost estimate.
 - Final 100% PS&E Submission – response to the 90% design comments; and final construction plans, special provisions, quantity take offs and cost estimate.

Additional Services

The following services are not anticipated and therefore, not included in this Agreement at this time:

- Structural design other than for design elements described in the Scope of Services including, but not limited to walls, drainage, utility, traffic signal and sign structures and foundations that do not conform to MassDOT standard design and construction details.
- Major drainage studies and design of major storm drains. (It is to be assumed that proposed drainage will be connected to existing drainage lines and that no major drainage study or design beyond the limits of work will be required.)
- Design for construction of new utilities (other than drainage and minor adjustments to existing utilities).
- Bridge ratings, structural analysis of existing bridge, and retaining walls and structures conditions report.
- Environmental Impact Report and/or Environmental Assessment/Statement.
- Geotechnical services for structures and ledge locations. CLIENT will contract directly with a geotechnical firm if these services are required.
- In accordance with Land Court procedures, preparation of rights-of-way plans, layout plans, taking plans, and descriptions involving the alteration of Land Court parcels.



- Preparation of the project as a defined Urban Systems Project requiring MassDOT and FHWA reviews and procedures. This effort will require additional meetings and follow-on services to be established during defined review periods.
- Survey services during construction.
- Investigation, testing, or analysis of hazardous waste.
- Coordination/liaison with private utility companies
- Design for new, relocation or modification of existing private utilities.

Should services be required in these areas, or areas not previously described, the CONSULTANT will prepare a proposal or amendment, at the CLIENT's written request, which contains the Scope of Services, Compensation, and Schedule to complete the additional items.



CLIENT CONFIRMATION AND AUTHORIZATION

MDS/Miller Dyer Spears Architects agrees with and accepts this proposal for professional services. MDS/Miller Dyer Spears Architects also agrees with the Terms and Conditions of Agreement, which is attached, and acknowledges this as being received. Together these constitute the entire agreement between Vanasse & Associates, Inc. and MDS/Miller Dyer Spears Architects.

Receipt of an executed copy of this agreement will serve as notice to proceed.

MDS/Miller Dyer Spears Architects certifies that funds or financing are available to meet their financial commitments and maintain the payment schedule under the terms and conditions of this Agreement.

Agreed and Accepted for:

MDS/MILLER DYER SPEARS ARCHITECTS AUTHORIZATION

	Task	Fee
_____ Authorized Agent Signature	Total Labor Fee	\$169,500
_____ Title	Traffic Signals Subconsultant	8,000
_____ Name (Please Print)	Traffic Counts	1,400
_____ Date	Survey	<u>By Others</u>
	TOTAL ESTIMATED FEE	\$178,900

VANASSE & ASSOCIATES, INC. AUTHORIZATION

Authorized Agent Signature

Partner

Title

Stephen M. Boudreau, P.E.

Name (Please Print)

February 13, 2023

Date



TO **Miller Dyer Spears**
C/O **Will Spears**
EMAIL **wspears@mds-bos.com**
Miller Dyer Spears
40 Broad Street, Suite 103
Boston, MA 02109

24507.001
Pierce School Building
Enclosure Consulting

DATE February 8, 2023

REGARDING **Proposal for Building Enclosure Consulting Services**

Dear Mr. Spears,

As requested by Miller Dyer Spears (MDS), RDH Building Science Inc. (RDH) is pleased to provide you with this proposal for a building enclosure consulting services for the New John Pierce School located at 50 School St, Brookline, MA.

Project Background

Based on discussions with you and preliminary drawings provided by you the new John Pierce School project will consist of a new 3-story, 230,000gsf school building built over a below grade parking structure. The new school is clad with brick and slate veneer with areas of punched aluminum windows and curtain wall. The roof will be a single ply membrane with rooftop PV. The project also includes an addition to the historic load bearing masonry school on the property which will be connected to the new school via a tunnel and bridge. The entire project is seeking Net Zero Energy performance.



Early phase rendering of the new John Pierce School Building



RDH Services

Based on our previous work and discussions with you, we have identified the following key services for this project. Overviews of our proposed services are provided, and a detailed description of the proposed scope is provided in the associated appendix.

→ **Building Enclosure Consulting Services – Appendix A**

Fees and Terms

FEE SUMMARY TABLE - BASE SCOPE				
DESIGN PHASE Fixed Fee			Base Bid	Optional
Design Development (DD) - Fixed Fee			\$17,500	
Construction Documents (CD) - Fixed Fee			\$40,000	
WUFI and Hygrothermal Analysis - T&E			\$15,000	
Up to 3 Retrofit Strategies				
Material Testing for Hygrothermal Analysis - T&E				\$17,500
Up to 4 locations (3 bricks per location)				
Thermal Analysis - T&E			\$40,000	
DESIGN PHASE SUBTOTAL			\$112,500	\$17,500
CONSTRUCTION PHASE Time + Expense			#UNITS	
Construction Admin	\$2,100 /month	15	\$31,500	
Construction Field Review	\$2,800 /visit	20	\$56,000	
Whole Building Air Tightness Testing				\$27,500
CONSTRUCTION PHASE SUBTOTAL			\$87,500	\$27,500
ESTIMATED PROJECT FEE TOTAL (BASE BID)			<u>\$200,000</u>	<u>\$45,000</u>
ESTIMATED EXPENSES			#VISITS	
Transportation, Parking, etc.			\$500	
ESTIMATED EXPENSES TOTAL			\$500	

REIMBURSABLE

BASE FEE

The above tables provide budget fee estimates and expenses. We bill on a time and expense basis in accordance with our General Terms and Conditions for this project, including our Project Rate Sheet, which are attached and made part of this agreement. If you require the use of other terms, we will make good faith efforts to negotiate alternative contract terms; however, if we are not able to mutually agree upon replacement terms or other form of contract, then the terms of this agreement will apply to the services already provided.

Qualifications

RDH is a building science consulting firm intent on *Making Buildings Better* with a focus on the building enclosure and its interaction with other building systems. We believe that we are different from other consultants and provide services at a distinctly advanced level.

Key differentiators are:

Building Science Depth – RDH staff have a deep understanding of building science fundamentals. Many of our staff have advanced degrees in building science, are teaching

at leading building science education programs, and/or are involved in practical research for the industry. This expertise allows us to explore new concepts for buildings from first principles, whereas others must rely on technology they have seen before. This means we can provide more creativity in exploring design alternatives. This depth and breadth of expertise has resulted in RDH being retained to prepare numerous industry guideline documents and to participate in many codes and standards committees.

Cost-Effective Construction – RDH consists of not only building science engineers and architects, but also highly experienced construction personnel. We have a construction management team that focuses on the implementation of building enclosure construction. We also have staff with hands-on experience in the construction of building enclosure systems. This practical expertise includes those who have worked for curtain-wall and other manufacturers, as well as contractors and installers for roofing, metal cladding and other building enclosure systems. These personnel bring valuable insights related to sequencing, cost effectiveness, and buildability of the enclosure to each project.

Research and Forensics – RDH has a research team that works extensively with government agencies and the design and construction industry. In particular, we assist manufacturers in the development and testing of new products and are therefore intimately familiar with the performance characteristics of the vast array of building materials and products on the market. Our research facilities and expertise focus on the real-world performance of enclosure system and are always available to project teams to assess new materials and systems in depth so that they can be used with confidence on projects.

We are also involved in investigating many of the major building failures in North America and abroad. This experience provides valuable insight regarding performance and informs our consulting practice.

Energy and Sustainability – Passive design strategies relying on efficient building enclosure systems are a key requirement to achieve ever increasing energy requirements. Our team has the unique ability to provide an integrated approach to enclosure and energy efficient design, allowing for the development of optimized solutions that provide cost effective means of achieving the design intent and energy performance goals. RDH has extensive expertise in whole building energy modelling for many building types, from small and large residential buildings to commercial offices, institutional buildings, and government buildings.

Passive House – Passive House certification uses an enclosure-first approach to aggressively reduce a building's heating demand. This approach requires innovative enclosure design that aligns well with RDH's building enclosure consulting services. RDH is the most experienced firm specializing in large Passive House buildings. RDH is the only North American team that includes 4 PHI-accredited Building Certifiers, 3 Passive House Trainers, 22 Certified Passive House Consultants/Designers (CPHC/Ds), 3 PHIUS Verifiers, 2 Certified Passive House Builders, and a Certified Passive House Tradesperson. Since Passive House took off in Canada, RDH has consulted on or certified more than 70 projects – totaling four million square feet – including homes, student residences, affordable mid-rise, offices and luxury high-rise. Because the RDH Passive House and



building enclosure engineering teams are fully integrated, RDH can deliver an unrivaled level of design expertise, risk reduction, and cost minimization.

Personnel

Our work will be overseen by Lucas Nahrgang, PE, as the Project Principal, and Andrew Steingiser, RA. will be the Project Manager and primary point-of-contact for our services. We will involve other technical specialists and support staff as our scope dictates and have enclosed staff biographies for the key staff that we anticipate will be involved in the project.

Closure

If our proposal and attached Terms and Conditions are acceptable, please sign the acceptance of our proposal on the next page or send a letter (or email) to the writer indicating acceptance of the proposal. We can then begin work on the project as we put the formal agreement in place.

Please do not hesitate to contact the writer should you wish to discuss any aspect of our proposal. We look forward to working with you.

Yours truly,

Lucas Nahrgang | PE (MA, +others)
Principal, Senior Project Engineer
lnahrgang@rdh.com
T 617-326-2476
RDH Building Science Inc.

Andrew Steingiser | RA, CPHC, LEED
AP
Associate, Project Architect / Passive
House Consultant

encl.

Bios; Terms of Agreement

APPENDIX A – Building Enclosure Consulting

Our building enclosure consulting services are led by one Principal at RDH who calls upon other individuals with specific areas of expertise as required by the project. The depth of expertise on our team is a key advantage of working with RDH.

Our scope applies to all assemblies that separate the interior from exterior environments, including below and above-grade walls, all glazed areas, roofs, and balconies.

The scope of work described below is organized in the order that it will occur chronologically. In addition, we have indicated if a phase of work is an optional task.

Design Phase

RDH will review the building enclosure assemblies from design development through to completion of the construction documents, focusing on control of water penetration, air leakage, water vapor diffusion, and thermal continuity.

Our design review recommendations will be based on our understanding of the project and our opinions of appropriate building enclosure design practices. The architect and owner will need to evaluate our recommendations in the context of project budget and differing risk-tolerance objectives and determine how-or whether-they will be incorporated into the project design.

During the design phase, we recommend planning for post review meetings where we discuss our comments with the owner and architect. We view these meetings as an important step for both the owner and architect to understand the rationale behind our recommendations, and to confirm which recommendations will be implemented and which will not. Our budgets are based on the number of meetings and reviews indicated.

Design Development

Our design development phase services include the following tasks and assumptions:

- Review and comment on one (1) design development drawing and specification set with comments provided in the form of notes and sketches on the drawings
- Attend two (2) 3-hr meetings to discuss our drawing and specification review comments or other design and coordination issues
- Up to the budgeted amount, participate in informal communications (email, teleconference, etc.) with the design team regarding coordination of the building enclosure systems, and design and detailing related questions

Deliverable: DD Drawing & Spec Review, 2 Meetings

Construction Documents

Our construction document phase services include the following tasks and assumptions:

- Review and comment on two iterations (typically at 60% and 90% complete) of drawings prepared by the architect with comments provided in the form of notes and sketches on the drawings
- Review project specifications for building enclosure components when they are approximately 90% complete and provide comments and recommendations in the form of notes marked directly on the specifications. Our review is focused on the performance requirements included within the specifications and the appropriateness of specified products for their intended use. It does not include the review of cross-references and industry standard references, nor will we compare installation instructions in the context of manufacturer recommended methods
- Make recommendations for quality assurance during construction, including specific recommendations regarding mock-ups, testing, and inspections for inclusion in the specifications, identifying key details/systems of the building enclosure where mock-ups and testing will be beneficial
- Attend two (2) 3hr meetings to discuss our drawings and specifications review comments.
- Up to the budgeted amount, participate in informal communications (email, teleconference, etc.) with the design team regarding coordination of the building enclosure systems, and design and detailing related questions.

Deliverable: 60%CD Drawing; 90% Drawing & Spec Review, 2 Meetings

WUFI/Hygrothermal Modelling

As part of this scope of work we purpose to conduct transient hygrothermal analysis (using WUFI-Pro 6.5) to assess the relative performance of up to 3 retrofit scenarios of the Historic Pierce School to assess the risk for freeze-thaw deterioration with differing insulation strategies. Additional scenarios can be considered through an add service requests. These will be summarized in a brief report.

The WUFI model built using brick material property data from our existing database. However, RDH is able to conduct material testing for the in-situ brick to derive the necessary material properties for the WUFI model should the need arise. We have provided an additional scope and fee for this testing below.

Deliverables: Model Results for 3 retrofit scenarios and report.

Material Testing for Hygrothermal Properties – Optional

RDH will review brick samples shipped directly from the selected site and perform material property testing as outlined in Table 1 below. These material properties are necessary for hygrothermal (WUFI) modelling and assessing freeze-thaw risk associated with the proposed retrofit wall assembly(ies).

TABLE 1 – SCOPE OF MASONRY MATERIALS TESTING	
Property	Method
Dry Density	ASTM C20

Porosity	ASTM C20
Thermal Conductivity	ASHRAE Handbook of Fundamentals Or TEMPOS Pin method
Heat Capacity	ASHRAE Handbook of Fundamentals Or TEMPOS Pin method
Water Absorption Coefficient	ASTM C1794
Vapor Permeance	ASTM E96
Reference Water Content	ASTM C1498
Free Water Saturation	DIN 12087
Critical Freeze-Thaw	by frost dilatometry method as adapted by RDH for masonry materials

The thermal conductivity will be estimated based on dry density and heat capacity will be estimated. Both will be based on values found in ASHRAE Handbook of Fundamentals 2017 or later. If sample sizes and shapes permit, RDH may employ a transient linear heat source apparatus to improve estimates of the thermal properties of the masonry materials provided.

- RDH expects that testing and reporting will be completed within 6 weeks of receipt of the samples. Vapor permeance and free water content can take over a month to come to equilibrium with satisfactory data, so measures will be taken incrementally through the test. If it is apparent that the testing will take longer than the timeframe above, an initial estimate of the measurement will be provided, followed by final results once testing is completed.
- We anticipate receiving three (3) brick samples from up to 4 locations on the building RDH will review the samples for variation and choose the one that best represents the average conditions.
- RDH will prepare a written report to document the material testing methods and measured material properties. A follow-up conference call will be scheduled to discuss the results.
- Our provided budget for this optional service does not include fees associated with collection and shipping of the brick samples.

Deliverables: Material testing for up to 4 locations on the building. report, conference call.

Thermal Performance Calculation

As part of the design development phases of the project we will provide thermal resistance values (R-values) for the selected assemblies based on previous thermal modelling and available industry sources. However, we have assumed this project will need be subject to the targeted compliance pathway of the 225 CMR 23 Energy Stretch and Opt-in Code and building specific calculations may be required.

Our thermal performance calculation services include the following tasks and assumptions:

- Provide update R-Value, U-Value, and thermal bridging (psi- and chi-value) estimates for building enclosure assemblies, systems, and details based on values from literature sources and our internal library. We have assumed the quantity take offs associated with the areas and length of the modelled details will be captured by the energy modeler on the project.
- Perform 2-dimensional and 3-dimensional thermal modelling of building enclosure assemblies and details as needed to determine thermal performance value for the purposes of achieving building energy performance objectives or evaluating condensation risk. We have assumed approximately 10-15 details/conditions will require modelling.
- We assume that this modelling will be used to establish the design, but final values for many systems will be required to be determined and submitted by suppliers. This would typically include performance values for at least glazing systems and cladding attachment system.

Deliverable: Produce a thermal modelling report documenting the thermal performance of the assemblies and details for which modelling was completed.

Construction Phase

Our scope is based on an assumed construction duration of 28 months with 20 months of RDH involvement for enclosure-related construction. Near the beginning of the construction phase of the project, we will develop a Construction Phase Plan that incorporates pre-installation meeting, submittal review process, the focus of each of our site visits, as well as any mock-up and testing work.

Construction Admin Support (CAS)

Submittal Review

We will review contractor submittals and shop drawings for building enclosure assemblies and components. Our fees assume that submittals will be in complete specification section packages, and that both the general contractor and the architect will have reviewed and commented on the submissions prior to RDH review.

As the enclosure assemblies are not yet specified, our budget includes review of two iterations of shop drawings for a curtain wall system and two iterations of shop drawings for a panelized wall system, for a total of four submittal/shop drawing reviews. Additional reviews may be required depending on the selected façade and enclosure design/materials and can be performed on a time and expense basis.

Our review of curtain wall assemblies does not include customized design and offshore manufacturing which requires additional review. If necessary, these services and associated fees are included within our façade engineering scope.

We will also provide specialized technical assistance to the architect in the review of other standard building enclosure items. We anticipate this will only be required to supplement the specification writer's review for significant building enclosure components, or when

there is a specific technical question regarding a submittal; we have not included a review of all construction phase submittals.

RFI and Technical Assistance

We will generally not attend on-site consultant's meetings but are available on an as-required basis to discuss specific enclosure issues. We have not budgeted to attend weekly or bi weekly meetings on site. Our services typically include:

- Assist architect/owner in determining appropriate solutions for non-standard details not specifically dealt with in the documents, or that have been created by site conditions
- We will provide specialized technical assistance to the architect, reviewing and responding to contractor requests for information (RFI) and architect supplemental instructions (ASI). This includes support with design-related requests or to field conditions that were not addressed during design
- We anticipate this will only be required to supplement the architect's review of detail clarifications, alternate product requests, or when there is a specific technical question.

Since the number of RFIs and request of review from the construction team varies from project to project, we will provide the above service as needed on a time and expense basis. Our services in this area are typically largely dependent on the completeness of the construction documents.

Construction Field Review (BE-FR)

During construction, we will undertake periodic field reviews of the building enclosure construction. The actual number of required visits may vary depending on the performance of the sub-trade contractors. We have budgeted for field review until occupancy with a maximum of 20 site visits.

Our site visits typically include:

- Attendance at pre-installation meetings with the design team and the contractor and sub-contractors. We view these pre-installation meetings as an opportunity to review sequencing and pre-submittals. We assume three pre-construction meetings on site
- Confirm that the building enclosure construction is in general conformance with the drawings and specifications based on a sampling of the work at selected locations
- Identify non-standard details not specifically dealt with in the documents, or that have been created by site conditions
- Check that appropriate material specifications are being met and liaise with manufacturers to have them confirm that they are reviewing the use of their products on site as required
- Review on-site mock-ups

- Meet with the designated general contractor representative during each site visit, and subsequently prepare and submit a site visit report (SVR) to summarize our observations. Our SVRs can be collected and organized as action lists, by trade, for deficiency resolution by the general contractor

Whole Building Airtightness Testing - Optional

RDH pioneered much of the large building testing research work in BC, and code compliance testing in Washington State. We are active on the Air Barrier Association of America committee on air leakage testing, and our staff provided input on the Army Corps of Engineers Whole-Building Air Leakage Testing Protocol. We are often consulted by code officials and those who write air leakage testing standards for input and were part of the team that developed the pressure-neutralized approach for incrementally testing portions of buildings. We own and maintain our own equipment including fan doors and controls, infrared cameras and other diagnostic equipment used for these tests.

At this time, the precise airtightness testing requirements for the project have not yet been established. We can work with the project team and relevant authority to establish the requirements based on the specific building design. Typically, testing of the whole building at once is required; however, alternate approaches may be available and more applicable for buildings with many separate interior volumes, tall buildings, and buildings with phased occupancy. Our typical whole building airtightness testing scope of services is described below for reference, and once the project requirements are established we can work with you to establish a budget for this work.

RDH will perform airtightness testing of the building to demonstrate compliance with the 225 CMR 23 requirements. Our scope of services generally includes pre-test review with the contractor; meetings; testing; reporting and follow-up work.

Testing will be conducted under both pressurization and depressurization.

We anticipate performing one whole building airtightness tests.

We assume the following:

- All building preparation work, as directed by RDH, will be performed by an Assisting Contractor (typically the general contractor). Preparation work includes, but is not limited to, temporarily sealing HVAC intakes/exhausts that do not have dampers, propping open all interior doors, and shutting down all mechanical systems
- The building can be configured as a single interconnected zone, meaning a total of one (1) test will be performed.
- Our proposed scope of services for testing includes the following:
 - Develop an airtightness testing plan
 - Coordination with the contractor in advance of the tests, including timing, preparation of openings, sizes of openings between suites etc.
 - Reference volume and area calculation per compliance requirements, for calculation of the air leakage rate

- Whole building airtightness test. If the building fails the initial test and additional tests and/or diagnostics are desired, we can provide additional support on a time and expense basis
- Prepare a test report including documentation of the methodology, results, and supporting calculations, as required for 225 CMR 23.

Please note that the proposed budget is contingent upon these assumptions and may vary if site conditions require more or less equipment and/or effort.

Limitations – Construction Phase

The list below provides a summary of the most common variables that can impact our required level of service and presence on site (in no particular order).

- Thoroughness and completeness of the original design, and the degree to which significant design changes or value engineering occur in later phases of the pre-construction phase efforts
- Complication of architectural design, complexity of materials and assemblies, novelty of systems, and intricacy of the façade geometry
- The degree to which value engineering modifies the design as it applies to the building enclosure detailing or material selection
- The level of contractor and subcontractor involvement in pre-construction discussions. We find that more involvement from the GC and sub-trades during late design and early pre-construction significantly reduces the amount of renegotiation of detailing during the mock-up and early construction phases
- General Contractor sophistication with regards to internal quality control and pre-review of construction documents prior to sub-contractor bid-out
- Thoroughness and completeness of submittal packages
- Number of substitution requests that result in modification to the design detailing or installation procedures
- Availability of a single point of contact from the general contractor throughout the construction phase effort, and the degree to which this point of contact is dedicated to building enclosure-related matters
- Overall level of experience from the general contractor and sub-contractors with building enclosure construction practices
- Deficient work by the contractor that requires multiple reviews for construction verification

Schedule "A" – Project Rates and Reimbursable Expenses

<p>PROJECT RATE ADJUSTMENT</p> <p>RDH reviews rates across the firm on a periodic basis and Project Rates are subject to adjustment consistent with that periodic review. Project Rates may be increased by no more than 10% per year.</p> <p>REIMBURSABLE EXPENSES AND LITIGATION SUPPORT</p> <p>The <i>Client</i> agrees to pay direct expenses, grossed up by 10% to cover overhead, reasonably incurred by <i>RDH</i> in the performance of the services.</p> <p>Equipment will be provided by <i>RDH</i> as required to perform the services and will be charged at rates established periodically and provided to the <i>Client</i> upon request.</p> <p>Attendance at, and preparation for, court, mediation, deposition, discoveries, or hearings are at the above rates plus 50%. A different rate schedule may apply for work undertaken in connection with an expert role.</p>	<p>PROJECT RATES</p> <table> <tr> <th>Description</th><th>Project Rates (\$/hr)</th></tr> <tr> <td>Senior Specialist</td><td>310</td></tr> <tr> <td>Senior Construction Manager</td><td></td></tr> <tr> <td>Specialist</td><td>285</td></tr> <tr> <td>Construction Manager</td><td></td></tr> <tr> <td>Senior Project Manager 3</td><td></td></tr> <tr> <td>Senior Project Manager 2</td><td>260</td></tr> <tr> <td>Senior Project Engineer / Senior Project Architect</td><td></td></tr> <tr> <td>Senior Project Technologist</td><td>235</td></tr> <tr> <td>Senior Project Manager 1</td><td></td></tr> <tr> <td>Senior Project Designer / Consultant</td><td></td></tr> <tr> <td>Project Engineer / Project Architect</td><td></td></tr> <tr> <td>Project Technologist</td><td>210</td></tr> <tr> <td>Project Manager 2</td><td></td></tr> <tr> <td>Project Designer / Consultant</td><td></td></tr> <tr> <td>Superintendent</td><td></td></tr> <tr> <td>Engineer 2 / Architect 2</td><td>185</td></tr> <tr> <td>Designer / Consultant</td><td></td></tr> <tr> <td>Project Manager 1</td><td></td></tr> <tr> <td>Engineer 1 / Architect 1</td><td></td></tr> <tr> <td>Engineer (EIT) 2</td><td>165</td></tr> <tr> <td>/ Intern Architect (IA) 2</td><td></td></tr> <tr> <td>Technologist 4</td><td></td></tr> <tr> <td>Field Representative 4</td><td></td></tr> <tr> <td>Building Scientist 3</td><td></td></tr> <tr> <td>Engineer (EIT) 1</td><td></td></tr> <tr> <td>/ Intern Architect (IA) 1</td><td></td></tr> <tr> <td>Technologist 3</td><td>150</td></tr> <tr> <td>Field Representative 3</td><td></td></tr> <tr> <td>Building Scientist 2</td><td></td></tr> <tr> <td>Estimator</td><td></td></tr> <tr> <td>Coordinator 3</td><td></td></tr> <tr> <td>Drafter 3</td><td></td></tr> <tr> <td>Building Scientist 1</td><td></td></tr> <tr> <td>Drafter 2</td><td>135</td></tr> <tr> <td>Coordinator 2</td><td></td></tr> <tr> <td>Technologist 2</td><td></td></tr> <tr> <td>Field Representative 2</td><td></td></tr> <tr> <td>Technologist 1</td><td></td></tr> <tr> <td>Coordinator 1</td><td>120</td></tr> <tr> <td>Field Representative 1</td><td></td></tr> <tr> <td>Drafter 1</td><td></td></tr> <tr> <td>Assistant</td><td>100</td></tr> </table>	Description	Project Rates (\$/hr)	Senior Specialist	310	Senior Construction Manager		Specialist	285	Construction Manager		Senior Project Manager 3		Senior Project Manager 2	260	Senior Project Engineer / Senior Project Architect		Senior Project Technologist	235	Senior Project Manager 1		Senior Project Designer / Consultant		Project Engineer / Project Architect		Project Technologist	210	Project Manager 2		Project Designer / Consultant		Superintendent		Engineer 2 / Architect 2	185	Designer / Consultant		Project Manager 1		Engineer 1 / Architect 1		Engineer (EIT) 2	165	/ Intern Architect (IA) 2		Technologist 4		Field Representative 4		Building Scientist 3		Engineer (EIT) 1		/ Intern Architect (IA) 1		Technologist 3	150	Field Representative 3		Building Scientist 2		Estimator		Coordinator 3		Drafter 3		Building Scientist 1		Drafter 2	135	Coordinator 2		Technologist 2		Field Representative 2		Technologist 1		Coordinator 1	120	Field Representative 1		Drafter 1		Assistant	100
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Field Representative 1																																																																																							
Drafter 1																																																																																							
Assistant	100																																																																																						