

TOWN of BROOKLINE

Massachusetts

BUILDING DEPARTMENT

Daniel Bennett Building Commissioner

TO: Selectboard/ School Committee

FROM: Ray Masak, PE Project Manager

SUBJECT: Brookline High School- Amendment 17

Design Services (FY 19)

DATE: April 20, 2020

On the Calendar this week, the Building Department is requesting the approval of an amendment for designer services for the subject project in the total amount of \$69,097.

The appropriation for this contract was approved by Town Meeting as part of the overall CIP for FY19. This amendment is for additional design services involving the MBTA station and as-built progress fiel surveying. Refer to the Hill memo dated May 8, 2020 and the Rawn memo dated May 8, 2020 for further explanation of services.

The Building Department will be available on Tuesday evening to answer any questions. Thank you for your consideration.



Hill International, Inc.

75 Second Avenue, Suite 300 Needham, MA 02494 Tel: 617-778-0900

Fax: 617-778-0999 www.hillintl.com

May 8, 2020

Mr. Ray Masak, P.E. Project Manager Town of Brookline Building Department 333 Washington Street Brookline, MA 02445

Re: William Rawn Associates Amendment 17 - Add Services

Dear Mr. Masak:

We have received and reviewed WRA's Amendment Request #17 for requested additional design services associated with relocation of the enabling duct banks, helical pile and platform redesign, and additional surveying for record easement documentation within MBTA property. Additional design services in this amendment are for three separate tasks and are performed by AECOM and Feldman Land Surveyors. The services proposed were previously reviewed and commented on by Hill, and the Amendment reflects revisions we support:

Scope #1 is related to enabling duct bank relocation efforts by AECOM. Hill had previously received this Add Service request from AECOM on 1/28/20 for \$34,590 and requested additional support from WRA/AECOM on 2/3/20 which did not allow for presentation at the February BBC meeting. Additional documentation including AECOM narrative and an overlaid plan was provided on 4/23/20 with an increased cost to \$42,160. WRA and Hill reviewed and provided comment to AECOM thereafter and the cost was reduced back to the original \$35,490. Hill further reviewed AECOM's documentation and analyzed cost. Hill determined that reimbursement for additional design services are due to AECOM given that the enabling duct bank basis of design was established in the 100% OCS & Enabling package issued 3/15/19 and relocation was driven later in 2019 by finalization of the building foundation design elements as well as MBTA 60% design review comments issued in July 2019 including AREMA wall foundation changes and the addition of helical piles in the platform. The AECOM team was engaged in duct bank relocation efforts for roughly (6) months from August 2019 to January 2020 and have asked for reimbursement of 167 hours. This equates to about 6.5 hours per week of combined staff time, which is acceptable to Hill.

Scope #2 is related to helical pile relocation and platform redesign due to revised OCS portal foundations. On a continued design coordination effort, AECOM had to adjust a number of adjacent helical pile locations as well as platform rebar design, triggered by the previous change of OCS portal foundations from a drilled caisson system to a series of mini-piles and pile cap (presented in Amendment #16). These additional services were necessary to complete the platform re-design.

Scope #3 is related to as-built progress field surveying required of Feldman in order to update the MBTA/ToB Easement Exhibit B plans (which Feldman originally issued and stamped) for Cypress building foundation limits for the permanent rights and easements within the MBTA property; updated accurate as-builts/records and legal descriptions is a requirement of MBTA License 16043A Section 5.8 and other sections of Easement/License/Escrow legal documents. Additionally, Feldman also had to research, survey and confirm location of abutting properties & existing fence lines south

of the MBTA tracks; this task was necessary for WRA/AECOM to respond to Skanska MBTA Station RFI 55 to confirm inbound platform edge missing dimensions.

Scope #4 remains under review and is subsequently deleted from request at the May 12th BBC. The proposal from McPhail was received on 5/5/20 and additional back-up documentation was provided on 4/7/20 which did not allow Hill to complete their review and recommendation.

Hill recommends approval of the \$69,097.00 Amendment 17.

Very truly yours,

Andy Felix

Project Director

WILLIAM RAWN ASSOCIATES | Architects, Inc.

10 Post Office Sq. Suite 1010 Boston, MA 02109 t. 617.423.3470 www.rawnarch.com

Ray Masak Project Manager Town of Brookline Building Department Brookline Town Hall 333 Washington Street Brookline, MA 02445

May 6, 2020 REVISED: MAY 8, 2020

Project Name: Brookline High School Expansion Project

Re: Contract Amendment #17 CC: Andy Felix, Sam Lasky

Additional Service Proposal for:

- 1. Helical Pile coordination due to OCS portal foundation revisions (AECOM)
- 2. As-built survey work for Town of Brookline / MBTA easement agreement (Feldman)
- 3. Extension of earthwork site supervision time (McPhail)
- 4. Transportation Board mitigation measures and documentation (HSH)

Dear Ray,

We would like to present the following four additional service proposals to the Brookline Building Commission on May 12, 2020.

Scope 1: MBTA Brookline Hills Platform (Project H) Ductwork re-coordination due to platform foundation changes requested by the MBTA (helical piles), AREMA wall changes, and MBTA Plaza design changes due to commuter input.

This scope of work is due to substantial revisions to ductbanks shown in the March 15, 2019 100% OCS submission. The MBTA requested changes to the building foundation design to meet AREMA requirements for freight trains. Additionally, the foundation changes requested by the MBTA for helical piles affected the original ductbank pathways. Finally, changes to the MBTA plaza design required additional coordination work to relocate hand holes. Please see additional justification for this additional service in AECOM's proposal (attached). This additional service has been submitted under Article 8.8.2 of the Owner / Architect contract.

Scope #1 Fee Summary

AECOM: \$34,590

WRA 10% Admin: \$3,459

Subtotal: \$38,049

Scope 2: Helical pile relocation and platform re-design due to revised OCS Portal Foundations:

AECOM made substantial revisions to the platform design in order to coordinate the new OCS portal foundations with the platform. Adjustments to the helical pile locations, quantity, and rebar design were needed for coordination between the platform precast panels and the new OCS mini-pile foundations. This scope of work is separate from additional services for the OCS portal foundation redesign approved by the Building Commission during the April 2020 meeting (Amendment #16). Please see additional justification for this additional service in AECOM's proposal (attached). This additional service has been submitted under Article 8.8.2 of the Owner / Architect contract.

Scope #2 Fee Summary

AECOM:

\$14,874

WRA 10% Admin:

\$1,874

Subtotal:

\$16,748

Scope 3: Additional Survey Work for Town of Brookline / MBTA Easement

Feldman has exceeded their previous additional services fees for assisting the Town of Brookline with the MBTA / ToB easement agreement. This additional service proposal includes:

- Field and documentation work to complete as-built below grade foundation drawings
- Locate abutter property lines south of the MBTA tracks

See attached proposal for additional information.

Scope #3 Fee Summary

Feldman:

\$13,000

WRA 10% Admin:

\$1,300

Subtotal:

\$14,300

Scope #4: Increased Time on Site for Continuous and Periodic Special Inspections by the Geotechnical Engineer at the Cypress Building (Project A) and STEM Wing (Project C)

There are two State of Massachusetts requirements (IBC 2015) for on-site special inspections by a licensed geotechnical engineer:

Will be reviewed in

Code Requirement #1: Continuous Special Inspections

May and possibly presented during June BBC meeting

Table 1705.6 Required Special inspections and Tests of Soils

 Verify use of proper materials, densities, and lift thicknesses during placement and compaction of compacted fill.

Table 1705.7 Required Special Inspections and test of Driven Depp Foundation Elements

- 1. Verify element materials, sizes and lengths comply with the requirements.
- 2. Determine capacities of test elements and conduct additional load tests, as required
- 3. Inspect driving operations and maintain complete and accurate records for each element.

4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.

Table 1705.8 Required Special Inspections and Tests of Cast-in-Place Deep Foundation Elements

- 1. Inspect drilling operations and maintain complete and accurate records for each element.
- Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable), and adequate end-bearing strata capacity. Record concrete grout volumes.

 Will be reviewed in

Code Requirement #2: Periodic Special Inspections

May and possibly presented during June BBC meeting

Table 1705.6 Required Special Inspections and Tests of Soils

- 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity
- 2. Verify excavations are extended to proper depth and have reached proper material
- 3. Perform classification and testing of compacted fill materials.
- 5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.

Table 1705.8 Required Special Inspections and Tests of Cast-in-Place Deep Foundation Elements

3. For concrete elements, perform tests and additional special inspection in accordance with Section 1705.3.

The Cypress Building and STEM Wing durations for Sitework and Foundations has been extended due to COVID-19 and due to unforeseen conditions associated with demolition and underpinning the existing STEM Wing Foundation. The following is a summary showing how the durations for sitework and foundations have changed from schedule to schedule.

Project A Cypress Building Sitework and Foundations

September 2018 Schedule

September 30, 2019 to February 27, 2020

Duration: 5 months (22 weeks)

70 00 00 10	19-Feb-20
51 13-Dec-19	27-Feb-20
5	51 13-Dec-19

January 2020 Schedule

October 12, 2019 to March 31, 2020

Duration: 6 Months (26 weeks)

Duration Increase: 4 weeks

Julation in	crease. 4 weeks	E .	75 FF	\	1111
SUM-1100	Summary - Sitework & Foundations at MBTA D Line Area				09-Mar-20
SUM-1090	Summary - Sitework & Foundations at Cypress St Lot	4	14	25-Nov-19 A	17-Mar-20

April 2020 Schedule (Some COVID-19 Schedule Impacts Shown)

October 12, 2019* to June 1, 2020

Duration: (35 weeks)

Duration Increase: 9 weeks

SUM-1100	Summary - Sitework & Foundations at MBTA D Line Area	39	12-Oct-19A	01 Jun-20
SUM-1090	Summary - Sitework & Foundations at Cypress St Lot	D	25-Nov-19 A	01-Apr-20 A

^{*}It is unclear why the start date in Skanksa's schedule changed between the January 2020 schedule and the April 2020 Schedule

Project C STEM Wing Sitework and Foundations

September 2018 Schedule

November 1, 2019 to January 24, 2020

Duration: 3 months (12 weeks)

Project C - S	STEM Wing			
SUM-1030	Summary - Enabling & Abatement - Shore / Protect Existing Basement & Connector / Reloc	8	20-Jun-19 A	25-Sep-19
SUM-1070	Summary - Demo Roberts Wing	33	21-Aug-19 A	31-Oct-19
SUM-1090	Summary - Sitework & Foundations	55	01-Nov-19	24-Jan-26

January 2020 Schedule

November 8, 2019 to February 5, 2020 Duration: 3.25 months (13 weeks)

Duration increase: 1 week	
Project C - STEM Wing	17 08-Nov-19 A 05-Feb-20
SUM-1090 Summary - Sitework & Foundations	The state of the s
	Will be reviewed in
April 2020 Schedule	May and possibly
November 8, 2019 to June 1, 2020	presented during
Duration: 7months (29 weeks)	. •
And the second s	June BBC meeting
Duration Increase: 16 weeks	
Project C - STEM Wing	
SUM-1090 Summary - Sitework & Foundations	49 08-Nov-19 A 15-Jun-20

In February, the Building Commission approved an 4 additional weeks of time on site as part of Contract Amendment #14 (see Scope 3 for \$5,500/wk for a total of \$22,000). McPhail was able to stretch this fee through the first week of May. This additional service proposal is for an additional 4 weeks of full time observation and 2 weeks of special inspections for a not to exceed fee proposal of \$27,500. Please see McPhail's attached proposal for additional information. If additional time is required on site, WRA will present a future contract amendment to the Commission in June or July 2020.

4 weeks @ \$5,500 / week = \$22,000

McPhail William Rawn 10% Administration Fee Scope #1 Total:

Additional Service Fee Total:

\$69,097 \$99,147

Please let us know if you have any questions or comments.

Regards,

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Andy Jonic, AIA Senior Associate William Rawn Associates, Architects Inc.

Attachments: McPhail Additional Service Proposal, AECOM proposal, Feldman Proposal

ATTACHMENT F

CONTRACT FOR DESIGNER SERVICES

AMENDMENT NO. 17____

Wh	HEREAS, the Town of Brookline Iliam Rawn Associates, Architects Inc.		_ ("Owner) and lectively, the "Parties")			
v vi ent	tered into a Contract for Designer Serv	ices for the Brookline	High School			
	pansion		Order # 21803108) at the			
	ookline High					
	<u>.</u>					
"C	ontract"; and					
Wł	HEREAS, effective as ofMay 6, 2	020, the Parties wis	sh to amend the Contract:			
thi: wh	DW, THEREFORE , in consideration of s Amendment, and other good and val- ich are hereby acknowledged, the Par- lows:	uable consideration, the	receipt and legal sufficiency of			
1.	 The Owner hereby authorizes the Designer to perform services for the Design Development Phase, the Construction Phases, and the Final Completion Phase of the Project, pursuant to the terms and conditions set forth in the Contract, as amended. 					
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*	After this Amendment:			
			Amendment fee: \$99,147 \$69,097			
	Feasibility Study Phase	\$	\$			
	Schematic Design Phase	\$	\$			
	Design Development Phase	\$	\$			
	Construction Document Phase	\$	\$			
	Bidding Phase	\$	\$			
	Construction Phase	\$	\$			
	Completion Phase	\$	\$			
	*Includes previous Amendments	, 				
	Total Fee	\$13,921,080.00	\$14,020,227.00			
			\$13,990,177,00			

\$13,990,177.00

This Amendment is a result of: Additional services related to additional geotechnical engineering construction observation due to COVID-19 schedule delays and unforeseen conditions, as-built survey field and documentation work for the MBTA/Town of Brookline easement agreement, and MBTA platform foundation and ductbank coordination due to MBTA comments and the MBTA plaza re-design.

3.	The Construction Budget shall be as follows:	S:
	Original Budget:	\$n/a
	Amended Budget	\$n/a
4.	The Project Schedule shall be as follows:	
	Original Schedule:	\$n/a
	Amended Schedule	\$n/a
5.	amendments to the original Contract. No o otherwise, regarding amendments to the or	and conditions agreed upon by the Parties as ther understandings or representations, oral or iginal Contract shall be deemed to exist or bind ons of the Contract remain in full force and effect.
	WITNESS WHEREOF, the Owner, with the ve caused this Amendment to be executed by	prior approval of the Authority, and the Designer
IIa	ve caused this Amendment to be executed t	then respective authorized officers.
O۱	WNER	
	(print name)	
_	(print title)	
By	(signature)	
Da	te	
DE	ESIGNER	
<u>Ar</u>	ndrew Jonic (print name)	_
Se	enior Associate (print title)	_
Ву		
L	149-	
Da	(signature) ate 05.06.20	



AECOM One Federal Street, Suite 800, Boston, MA 02110

Project Name:	Brookline Hills Station
AECOM Project	60580112
Number:	00380112
Subject:	Contract Change Order No. 3

Mr. Andrew Jonic, AIA, LEED AP BD+C Senior Associate William Rawn Associates Inc. 10 Post Office Square Suite 1010 Boston, MA 02109

April 27, 2020

The following provides AECOM's outline to Change Order No.3 for supplemental services after the conclusion of the Final Design phase and during construction. The project is scheduled to be substantially complete in in June of 2021.

- 1. Enabling ductbank changes due to MBTA addition of helical piles, revised MBTA plaza and school wall changes to meet AREMA requirements:
- Ductbank coordination due to platform foundation system changes required by the MBTA (helical piles)
 - o The MBTA 60% station comments on the platform during their review resulted in helical piles being added under the platform in the 100% station drawing issued on July 1, 2019.
 - In RFI-22 issued on August 2, 2019, the contractor requested to run the ductbank at the back of the platform, not beneath it to simplify the construction around the platform helical piles.
- Ductbank coordination with the revised MBTA plaza (hand hole coordination). OCS drawings were issued on 3/15. The MBTA plaza re-design occurred after bid documents were issued (in the spring and summer of 2019).
 - The plaza changes occurred after the OCS drawings were issued which required an additional coordination effort.
- Ductbank coordination due to AREMA wall changes. Additional coordination was required to coordinate underground utilities with foundation changes associated with the revised AREMA wall design.
 - Job meetings with the contractor reviewing the AREMA wall changes and the new platform helical piles resulted in moving the duct bank north of the elevator under the school stairs and away from the platform piles.

AECOM clearly spent over a month working on duct bank routing based on the daily emails and directions.

Name/Technical Team	Rate	Hours	Total
Roger Gagnier	\$280.00	40	\$11,200.00
Architect	\$185.00	40	\$7,400.00
Structural	\$185.00		
Electrical	\$185.00	80	\$14,800.00
Designer	\$170.00	7	\$1,190.00
CADD	\$150.00		
Technical Support	\$115.00		
		167	\$34,590.00

2. Helical pile relocation and platform redesign due to change in OCS portal foundations:

The change from caisson foundation to pile cap foundation for the portal frames has resulted in additional redesign of the helical pile locations and platform design. The task is not to exceed \$14,874.00

- Local to each pile cap foundation relocate the helical piles to avoid physical conflict.
- The platform is a framed structure from helical pile to helical pile. Moving the piles around requires the platform reinforcing to be checked and changed as required.
- Detailing around each pile cap is required because of the physical conflict.
- Impacted Structural drawings need to be revised and issued.
- Impacted Architectural drawings need to be revised and issued.

Name/Technical Team	Rate	Hours	Total
Roger Gagnier	\$291.00	6	\$1,746.00
Architect	\$192.00	12	\$2,340.00
Structural	\$192.00	12	\$2,340.00
Designer	\$176.00	48	\$8,448.00
		74	\$14,874.00

In total, this Change Order amounts to \$49,464.00 labor cost. Please let us know if any further documentation is required at this time. As you know some of this work has been completed in good faith to keep ahead of the contractor's construction schedule.

Truly yours,

AECOM

David Ryan Vice President

Cc: Roger Gagnier,



May 5, 2020

William Rawn Associates, Architects, Inc. 10 Post Office Square, Suite 1010 Boston, MA 02109

Attention:

Erik Tellander, AIA, LEED AP BD+C

Reference:

Brookline High School Expansion Project; Brookline, MA

Proposal for Updated Construction Phase Services

Ladies and Gentlemen:

At the request of Mr. Andrew Jonic of William Rawn Associates, Architects, Inc., this proposal outlines updated construction phase services for the proposed Brookline High School Expansion project based on the most recent construction schedule that was provided by the Contractor. This proposal updates the approved construction phase services scope that was outlined in our proposal dated January 28, 2020.

Our January 28, 2020 proposal was partially approved for the following scope of services:

- \$12,000 for out-of-scope geoenvironmental engineering services for preparation of soil disposal packages;
- Four (4) weeks of full time monitoring of construction activities between Projects A and C;
- Two (2) weeks of out-of-scope monitoring of MBTA catenary pile supports;
- Eight (8) weeks of monitoring installation of helical piles for the MBTA platform supports (to-date unused, scope is understood to be completed in late 2020/early 2021).

Based on the approved scope outlined above and McPhail's ability to provide construction monitoring services on a part-time where applicable, McPhail has been able to extend our construction monitoring services into the first week of May 2020 under the approved budget authorization. However, ongoing construction monitoring services will be required beyond the authorized budget.

It is understood that schedule delays have occurred due to the ongoing COVID-19 pandemic. Geotechnical and geoenvironmental construction scope remaining on Project A includes off-site soil disposal for utility work located to the west of the existing building, backfill of utility trenches inside the building, and backfill of the perimeter foundation wall along Cypress Street. At Project C, foundation construction, backfill of foundations, slab preparation for outside of the basement, and off-site soil disposal remains to be completed. Construction on Project C has been further delayed due to the required underpinning scope identified at the proposed elevator pit which is currently ongoing.

As required by the Massachusetts State Building Code, periodic and continuous special inspection is required for both foundation construction and backfill placement. Specifically, Table 1705.6 (4) requires full time monitoring to verify use of proper materials, densities,



William Rawn Associates May 5, 2020 Page 2

and lift thicknesses during placement and compaction of compacted fill. Table 1705.6 also requires periodic special inspection for the following tasks:

- 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity
- 2. Verify excavations are extended to proper depth and have reached proper material
- 3. Perform classification and testing of compacted fill materials.
- 5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.

Therefore, based on code requirements for continuous and periodic special inspections, we request an additional four (4) weeks of full time monitoring (160 hours) and two (2) weeks of half-time monitoring (40 hours). Based on our previously approved rate of \$5,500 per week (40 hours per week) for construction observation and involvement of our project management staff, the requested additional fee would be **\$27,500**.

As we have stated previously, the scope of monitoring depends upon the construction schedule, which is a function of the sequencing and phasing of the Contractors activities, which is outside of our control. If it becomes apparent that this budget increase request will be exhausted before the Contractor completes geotechnical construction work which is required or recommended to be monitored, a request for additional budget will be provided at that time.

Terms and Conditions

Terms and Conditions of our March 23, 2018 and April 4, 2019 proposals are incorporated herein by reference.

Final Comments

To authorize us to proceed with the services proposed herein, please sign and return a copy of this letter. We appreciate the opportunity to submit this proposal and look forward to our continued service to William Rawn Associates, Architects, Inc. on this project.



William Rawn Associates May 5, 2020 Page 3

Should you have any questions or require additional information, please do not hesitate to contact us.

contact us.	
Very truly yours,	
McPHAIL ASSOCIATES, LLC	WILLIAM RAWN ASSOCIATES, ARCHITECTS, INC.
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Jason S. Huestis	BY
72 7.7-2	DATE
Thomas 1 Fennick P.F. I.S.P.	DATE

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April 14, 2020

VIA Email

Andrew Jonic William Rawn Associates, Architects Inc. 10 Post Office Square, Suite 1010 Boston, MA 02109

Re: Survey Services "Brookline High School" Tappan Street and Cypress Street Brookline, MA

Dear Andy,

Pursuant to your request, we are pleased to submit our proposal for your project mentioned above.

In order to achieve your project's goals we propose to perform the following tasks;

Task 1- Easement Plan.

- Locate the foundation elements associated with the easements to be granted to the Town
 of Brookline by the Massachusetts Bay Transportation Authority and revise other
 easement as necessary.
- Compile our survey at a suitable scale and to registry standards. We will supply a plan suitable for recording at the Norfolk County Registry of Deeds.
- Perform our survey work in compliance with the Code of Massachusetts Regulations 250 CMR 6.0 Land Surveying Procedures and Standards.

The fee for this task will be \$8,000.00.

Task 2 – Retrace and Plot the Southerly Sideline of the MBTA Right of Way.

- Recovery and confirmation of existing traverse and location of existing monumentation.
- Perform research, as needed, at the Norfolk County Registry of Deeds, Town of Brookline Engineering and Assessors Departments, Massachusetts Land Court and the Massachusetts Bay Transportation Authority.
- Reconcile recovered monumentation with record information (Plans and Deeds).

FELDMAN

- Compile our survey on the existing base survey for the site, as shown on plan X0-00-E. .
- Perform our survey work in compliance with the Code of Massachusetts Regulations 250

The fee for this task will be \$5,000.00.

Work will be scheduled immediately upon written authorization to proceed. We will invoice monthly, based on the time and materials charged to the project within that time frame consistent with our current per diem rates. We will anticipate payment of the invoice upon receipt.

For your protection we maintain General Liability, Automobile Liability, Workers Compensation and Professional Liability (errors and omissions) Insurance. We will be happy to provide you with a Certificate of Insurance upon your request.

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

Very truly yours,
FELDMAN LAND SURVEYORS

John Y M' Ronagh

Sean McDonagh Vice President

Accepted by: ______

Title: _____

Firm: _____

Date: _____