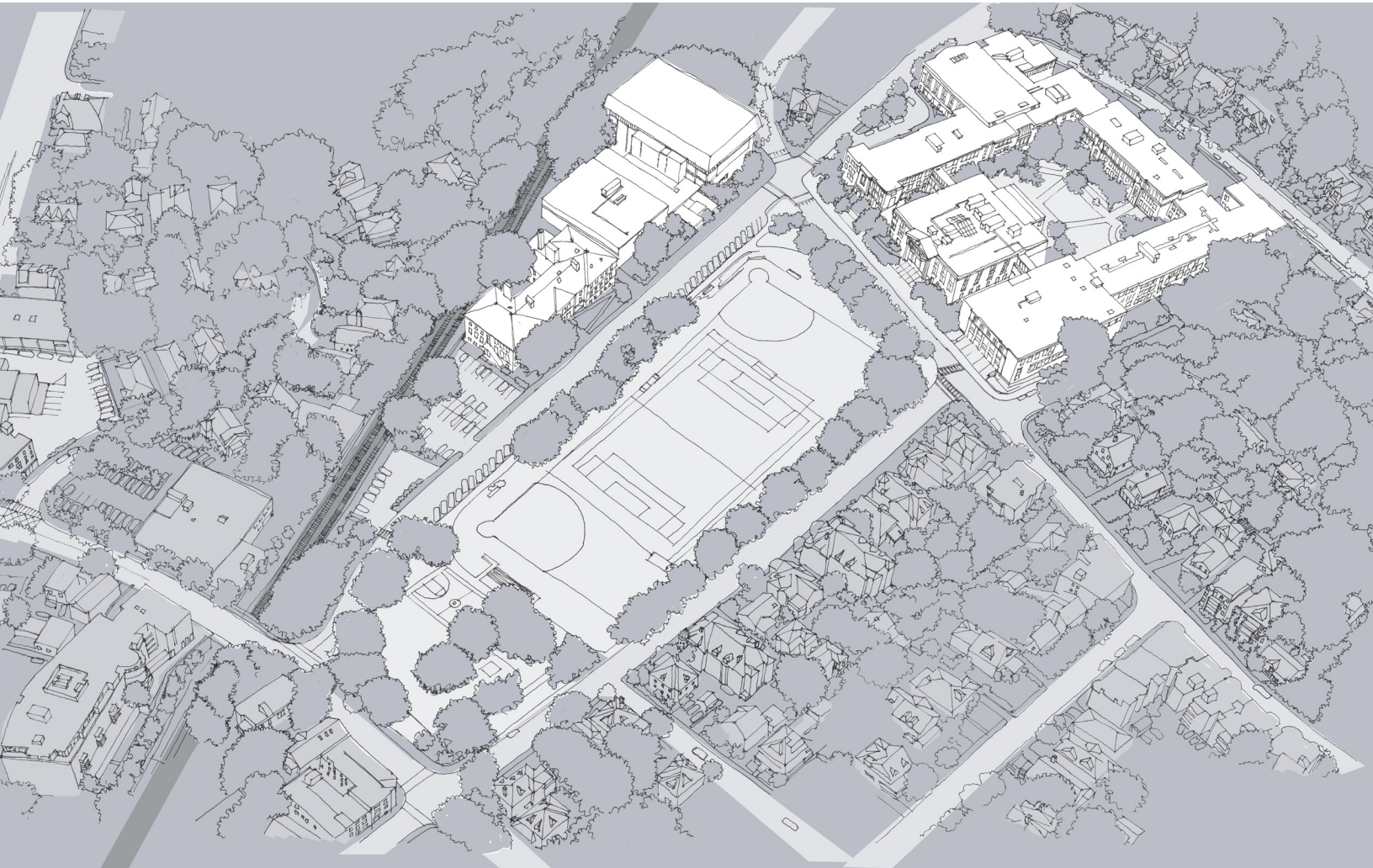




Brookline High School Feasibility Study

MAY 2017 *DRAFT*

VOLUME 3 OF 3



HMFH ARCHITECTS

130 Bishop Allen Drive Cambridge, MA 02139 617 492 2200 hmfh.com

HMFH ARCHITECTS

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OPTION 1 - Enrollment Accommodation Summary



Brookline High School
 Design Options
 Brookline, MA
Feasibility Estimate

13-Mar-17

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION + ADDITION				
	Sep-18			
RENOVATIONS TO EXISTING SCHOOL		294,310	\$75.00	\$22,072,482
ADDITIONS		165,000	\$287.09	\$47,369,973
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)		48,360	\$10.00	\$483,600
UNDERGROUND PARKING				Not Required
REMOVE HAZARDOUS MATERIALS				\$5,440,480
SITework - ALLOWANCE 8% of BUILDING				\$5,555,396
SUB-TOTAL		459,310	\$176.18	\$80,921,931
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$7,282,974
DESIGN AND PRICING CONTINGENCY	15%			\$13,230,736
SUB-TOTAL		459,310	\$220.84	\$101,435,641
GENERAL CONDITIONS	6.00%			\$6,086,138
GENERAL REQUIREMENTS	4.00%			\$4,057,426
BONDS	1.15%			\$1,166,510
INSURANCE	1.25%			\$1,267,946
PERMIT				Waived
CM FEE	2.50%			\$2,850,342
CM/GMP CONTINGENCY	3%			\$3,043,069
PHASING PREMIUM	5.0%			\$5,071,782
TOTAL OF ALL CONSTRUCTION		459,310	\$272.10	<u>\$124,978,854</u>

ALTERNATES:

1. Repair exterior walls including insulating interior face	ADD	\$6,578,018
2. Replace existing windows	ADD	\$5,876,917
3. Replace existing roof	ADD	\$1,709,400

OPTION 1 - Enrollment Accommodation



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 294,310

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$73,300			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$51,650	\$124,950	\$0.42	0.6%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$434,730			
B1020	Roof Construction	\$75,000	\$509,730	\$1.73	2.3%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$292,125			
B2020	Windows/Curtainwall	\$0			
B2030	Exterior Doors	\$64,396	\$356,521	\$1.21	1.6%
B30 ROOFING					
B3010	Roof Coverings	\$0			
B3020	Roof Openings	\$0	\$0	\$0.00	0.0%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$2,869,920			
C1020	Interior Doors	\$335,450			
C1030	Specialties/Millwork	\$331,502	\$3,536,872	\$12.02	16.0%
C20 STAIRCASES					
C2010	Stair Construction	\$120,000			
C2020	Stair Finishes	\$80,000	\$200,000	\$0.68	0.9%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$1,121,850			
C3020	Floor Finishes	\$657,030			
C3030	Ceiling Finishes	\$1,913,015	\$3,691,895	\$12.54	16.7%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$575,000	\$575,000	\$1.95	2.6%
D20 PLUMBING					
D20	Plumbing	\$737,070	\$737,070	\$2.50	3.3%
D30 HVAC					
D30	HVAC	\$3,485,507	\$3,485,507	\$11.84	15.8%
D40 FIRE PROTECTION					
D40	Fire Protection	\$1,424,395	\$1,424,395	\$4.84	6.5%
D50 ELECTRICAL					
D5010	Electrical Systems	\$5,735,412	\$5,735,412	\$19.49	26.0%
E10 EQUIPMENT					
E10	Equipment	\$575,000	\$575,000	\$1.95	2.6%

OPTION 1 - Enrollment Accommodation



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 294,310

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION					
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$598,400			
E2020	Movable Furnishings	NIC	\$598,400	\$2.03	2.7%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 SELECTIVE BUILDING DEMOLITION					
F2010	Building Elements Demolition	\$521,730			
F2020	Hazardous Components Abatement	\$0	\$521,730	\$1.77	2.4%
TOTAL DIRECT COST (Trade Costs)			\$22,072,482	\$75.00	100.0%

OPTION 1 - Enrollment Accommodation



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 294,310

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION

GROSS FLOOR AREA CALCULATION

CODE RENOVATION	2,640
INTENSIVE RENOVATION	57,090
MINIMAL RENOVATION	234,580

TOTAL GROSS FLOOR AREA (GFA)	294,310	sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Allowance for new footings at bracing to intensive/code renovation	7,330	sf	10.00	73,300	
SUBTOTAL					73,300

A1020 SPECIAL FOUNDATIONS

No work in this section
SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

Cutting and patching; generally at intensive/code renovation slab	7,330	sf	5.00	36,650	
Equipment pads	1	ls	15,000.00	15,000	
SUBTOTAL					51,650

TOTAL - FOUNDATIONS					\$124,950
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Allowance for bracing steel at full renovation; 2lbs per SF	60	tns	5,000.00	300,000	
Fireproofing to new steel	1	ls	50,000.00	50,000	
Openings in structure for MEP systems	59,730	gsf	1.00	59,730	
Fire stopping floors	1	ls	25,000.00	25,000	
SUBTOTAL					434,730

B1020 ROOF CONSTRUCTION

Roof Structure - Steel:

New steel for RTU's	1	ls	25,000.00	25,000	
Miscellaneous steel upgrades to existing roof structure	1	ls	50,000.00	50,000	
SUBTOTAL					75,000

TOTAL - SUPERSTRUCTURE					\$509,730
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Repair, repoint and clean all exterior walls	80,220	sf			
	80,220	sf	40.00	ETR	
Insulate exterior walls to meet code; new furred walls at perimeter	80,220	sf	12.00	ETR	

OPTION 1 - Enrollment Accommodation



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GFA 294,310

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION								
51	Premium for work at decorative façade	1	ls	100,000.00	ETR			
52	New exterior closure at demolished section	3,075	sf	95.00	292,125			
53	SUBTOTAL					292,125		
54								
55	B2020 WINDOWS/CURTAINWALL							
56	Replace existing windows/curtainwall etc.	34,380	sf	105.00	ETR			
57	SUBTOTAL					-		
58								
59	B2030 EXTERIOR DOORS							
60	Replace exterior door, double	6	pr	8,500.00	51,000			
61	Replace exterior door, single	5	ea	2,000.00	10,000			
62	Backer rod & double sealant	283	lf	9.00	2,547			
63	Wood blocking at openings	283	lf	3.00	849			
64	SUBTOTAL					64,396		
65								
66	TOTAL - EXTERIOR CLOSURE							\$356,521
67								
68								
69	B30 ROOFING							
70								
71	B3010 ROOF COVERINGS							
72	Replace existing roofing systems	37,000	sf	28.00	ETR			
73	SUBTOTAL					-		
74								
75	B3020 ROOF OPENINGS							
76	No work in this section							
77	SUBTOTAL					-		
78								
79	TOTAL - ROOFING							
80								
81								
82	C10 INTERIOR CONSTRUCTION							
83								
84	C1010 PARTITIONS							
85	Allowance for fire separation walls	45,660	sf	35.00	1,598,100			
86	Allowance to modify existing walls at code renovation	2,640	gsf	6.00	15,840			
87	Replace walls at intensive renovation	57,090	gsf	22.00	1,255,980			
88	SUBTOTAL					2,869,920		
89								
90	C1020 INTERIOR DOORS							
91	Adjust openings to meet code requirements	1	ls	50,000.00	50,000			
92	Remove and replace doors at intensive renovation	57,090	gsf	5.00	285,450			
93	SUBTOTAL					335,450		
94								
95	C1030 SPECIALTIES / MILLWORK							
96	Toilet Partitions and accessories	59,730	gsf	0.80	47,784			
97	Lockers, full height	59,730	gsf	1.50	89,595			
98								
99	055000 MISCELLANEOUS METALS							
100	Miscellaneous metals throughout building	59,730	sf	1.00	59,730			
101								
102	061000 ROUGH CARPENTRY							
103	Rough blocking	59,730	sf	0.50	29,865			

OPTION 1 - Enrollment Accommodation



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 294,310

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION

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070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Miscellaneous sealants throughout building **59,730** sf 1.50 89,595

101400 SIGNAGE

Code compliant signage **59,730** sf 0.25 14,933

SUBTOTAL

331,502

TOTAL - INTERIOR CONSTRUCTION \$3,536,872

C20 STAIRCASES

C2010 STAIR CONSTRUCTION

New handrails and guardrails @ stairs; code upgrades **20** flt 6,000.00 120,000

SUBTOTAL

120,000

C2020 STAIR FINISHES

Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips **20** flt 4,000.00 80,000

SUBTOTAL

80,000

TOTAL - STAIRCASES \$200,000

C30 INTERIOR FINISHES

C3010 WALL FINISHES

Painting **294,310** gsf 3.00 882,930

Miscellaneous walls finishes to full renovated areas **59,730** gsf 4.00 238,920

SUBTOTAL

1,121,850

C3020 FLOOR FINISHES

New floor finishes throughout intensive/code renovated areas **59,730** gsf 11.00 657,030

SUBTOTAL

657,030

C3030 CEILING FINISHES

Replace existing ceilings throughout **294,310** gsf 6.50 1,913,015

SUBTOTAL

1,913,015

TOTAL - INTERIOR FINISHES \$3,691,895

D10 CONVEYING SYSTEMS

Remove existing elevator and install new elevator **3** loc 180,000.00 540,000

New lift **1** stp 35,000.00 35,000

SUBTOTAL

575,000

TOTAL - CONVEYING SYSTEMS \$575,000

OPTION 1 - Enrollment Accommodation



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GFA 294,310

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION

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D20 PLUMBING

D20 PLUMBING, GENERALLY

Equipment

Plumbing equipment 59,730 sf 2.00 119,460

Plumbing Fixtures & Specialties

Miscellaneous plumbing fixtures 59,730 sf 1.00 59,730

Domestic Water Type L Copper Pipe

Domestic water pipe with fittings & hangers 59,730 sf 2.00 119,460

Domestic water pipe insulation 59,730 sf 1.50 89,595

Sanitary Waste And Vent Pipe w/ Hangers

Sanitary waste pipe with fittings & hangers 59,730 sf 2.35 140,366

Kitchen waste pipe with fittings & hangers 59,730 sf 0.30 17,919

Acid Waste And Vent Pipe w/ Hangers

Acid waste & vent pipe with fittings & hangers 59,730 sf 0.75 44,798

Storm Drainage, Hubless Cast Iron Pipe

Storm water pipe with fittings & hangers 59,730 sf 1.25 74,663

Pipe insulation on horizontal runs 59,730 sf 0.20 11,946

Gas And Fuel Distribution Pipe

Gas pipe with fittings & hangers 59,730 sf 0.75 44,798

Miscellaneous

Coring, sleeves & firestopping 59,730 sf 0.03 1,792

Commissioning support 59,730 sf 0.08 4,778

Fees & permits 59,730 sf 0.13 7,765

SUBTOTAL 737,070

TOTAL - PLUMBING						\$737,070
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D30 HVAC

D30 HVAC, GENERALLY

HVAC Equipment

HVAC equipment 59,730 sf 1.00 59,730

Pumps

Pumps 59,730 sf 0.28 16,724

Air distribution

RTU's Gas fired heating with DX cooling 113,487 cfm 9.25 1,049,755

Air distribution equipment 59,730 sf 3.00 179,190

Exhaust fans 59,730 sf 0.50 29,865

Sheet metal & Accessories

Sheet metal & accessories 59,730 sf 9.00 537,570

Piping

Hot Water Piping

Hot water piping with fittings & hangers 59,730 sf 2.00 119,460

Chilled Water Piping

Chilled water piping with fittings & hangers 59,730 sf 0.55 32,852

Refrigerant Piping

Refrigerant piping with fittings & hangers 59,730 sf 0.10 5,973

Condensate Drain Piping

OPTION 1 - Enrollment Accommodation



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GFA 294,310

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION								
206	Condensate drain piping with fittings & hangers	59,730	sf	0.15	8,960			
207	<u>Piping Insulation</u>							
208	Piping insulation	59,730	sf	1.50	89,595			
209	<u>Automatic Temperature Controls</u>							
210	Automatic temperature controls DDC	59,730	sf	4.50	268,785			
211	Balancing							
212	System testing & balancing	59,730	sf	0.60	35,838			
213	<u>Miscellaneous</u>							
214	Cleaning existing ductwork and piping	234,580	sf	4.00	938,320			
215	Demolition & make safe	59,730	sf	0.50	29,865			
216	Commissioning support	59,730	sf	0.42	25,087			
217	Coring, sleeves & fire stopping	59,730	sf	0.17	10,154			
218	Rigging & equipment rental	59,730	sf	0.42	25,087			
219	Vibration & seismic restraints	59,730	sf	0.38	22,697			
220	SUBTOTAL					3,485,507		
221								
222	TOTAL - HVAC							\$3,485,507

D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

228	Fire pump	1	ls	100,000.00	100,000		
229	New fire protection system	294,310	sf	4.50	1,324,395		
230	SUBTOTAL					1,424,395	

TOTAL - FIRE PROTECTION \$1,424,395

D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

239	Normal power distribution switchgear & feeders based on 4000A 480/277V	294,310	sf	5.00	1,471,550		
240	<u>Emergency power</u>						
241	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	294,310	sf	4.00	1,177,240		
242	<u>Equipment Wiring</u>						
243	Equipment wiring	59,730	sf	2.00	119,460		
244	SUBTOTAL					2,768,250	

D5020 LIGHTING & POWER

Lighting & Branch Power

248	Lighting fixtures (LED as BOD) with installation labor	294,310	sf	5.00	1,471,550		
249	<u>Lighting control system</u>						
250	Lighting controls including daylight harvesting system, allow	294,310	sf	1.15	338,457		
251	<u>Branch devices</u>						
252	Branch devices	59,730	sf	0.50	29,865		
253	<u>Lighting and branch circuitry</u>						
254	Lighting & branch circuitry	59,730	sf	5.50	328,515		

OPTION 1 - Enrollment Accommodation



Brookline High School
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	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION

255	SUBTOTAL					2,168,387		
256								
257	D5030 COMMUNICATION & SECURITY SYSTEMS							
258	<u>Fire Alarm</u>							
259	Fire alarm system	59,730	sf	2.00	119,460			
260	<u>Bi-Directional System</u>							
261	BDA system	59,730	sf	0.50	29,865			
262	<u>Security System</u>							
263	Security System	59,730	sf	2.50	149,325			
264	<u>Telephone/Data/CATV</u>							
265	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner		
266	Telecommunications rough in	59,730	sf	1.50	89,595			
267	Telecommunications devices and cabling	59,730	sf	2.00	119,460			
268	<u>Public Address/Clock System</u>							
269	PA/Master Clock system	59,730	sf	1.25	74,663			
270	<u>Audio Visual (rough-in and power only)</u>							
271	AV equipment					By Owner		
272	Rough-In conduit and backboxes only	59,730	sf	0.50	29,865			
273	<u>Auditorium</u>							
274	Rigging system equipment & installation					ETR		
275	Power to rigging equipment	1	ls	15,000.00		ETR		
276	Stage dimming system with performance fixture package, allow	1	ls	275,000.00		ETR		
277	Installation, rough-in & 120V power to dimming equipment	1	ls	75,000.00		ETR		
278	Performance audio visual equipment, installation & LV cabling, allow	1	ls	150,000.00		ETR		
279	Performance audio visual rough-in and power	1	ls	65,000.00		ETR		
280	<u>Gymnasium</u>							
281	Sound system	1	ls	15,000.00	15,000			
282	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	30,000			
283	Misc. gym equipment feed and connections	1	ls	25,000.00	25,000			
284	SUBTOTAL					682,233		
285								
286	D5040 OTHER ELECTRICAL SYSTEMS							
287	<u>Miscellaneous</u>							
288	Demolition & make safe	1	ls	15,000.00	15,000			
289	Temp power and lights	59,730	sf	0.45	26,879			
290	Lightning Protection System, UL Master label	59,730	sf	0.45	26,879			
291	Fees & Permits	59,730	ls	0.80	47,784			
292	SUBTOTAL					116,542		
293								
294	TOTAL - ELECTRICAL						\$5,735,412	
295								
296								
297	E10 EQUIPMENT							
298								
299	E10 EQUIPMENT, GENERALLY							
300	Gym wall pads	1	ls	20,000.00	20,000			
301	Basketball backstops; swing up; electric operated	6	loc	10,000.00	60,000			
302	Gymnasium dividing net; electrically operated	1	ls	30,000.00	30,000			
303	Volleyball net and standards	1	ls	5,000.00	5,000			
304	Telescoping bleachers	1	ls	60,000.00	60,000			

OPTION 1 - Enrollment Accommodation



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 294,310

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: RENOVATION

305	Theatrical Equipment Stage curtains, rigging and controls	1	ls	250,000.00	ETR		
306	Kitchen equipment	1	ls	400,000.00	400,000		
307	SUBTOTAL					575,000	
308							
309	TOTAL - EQUIPMENT						\$575,000
310							
311							

E20 FURNISHINGS

E2010 FIXED FURNISHINGS

123553 CASEWORK

316	Counters, base cabinets, tall storage in classrooms and other rooms; full renovation	57,090	gsf	10.00	570,900		
317	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500		
318	Theatrical seating	1	ls	180,000.00	ETR		
319	Window blinds	34,380	sf	7.00	ETR		
320	SUBTOTAL					598,400	
321							

E2020 MOVABLE FURNISHINGS

All movable furnishings to be provided and installed by owner

SUBTOTAL

NIC

TOTAL - FURNISHINGS \$598,400

F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION

SUBTOTAL

-

TOTAL - SPECIAL CONSTRUCTION

F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

340	Remove exterior glazing	34,380	sf	6.00	ETR		
341	Remove roofing	37,000	sf	2.00	ETR		
342	Interior demolition; gut	57,090	gsf	8.00	456,720		
343	Interior demolition; partial	2,640	gsf	3.00	7,920		
344	Temporary enclosures/protection	57,090	sf	1.00	57,090		
345	SUBTOTAL					521,730	
346							

F2020 HAZARDOUS COMPONENTS ABATEMENT

See summary

SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION \$521,730

OPTION 1 - Enrollment Accommodation



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 165,000

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$657,943			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$651,371	\$1,309,314	\$7.94	2.8%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$576,075			
A2020	Basement Walls	\$324,027	\$900,102	\$5.46	1.9%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$5,210,863			
B1020	Roof Construction	\$1,444,720	\$6,655,583	\$40.34	14.1%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$2,636,437			
B2020	Windows	\$1,855,429			
B2030	Exterior Doors	\$73,680	\$4,565,546	\$27.67	9.6%
B30 ROOFING					
B3010	Roof Coverings	\$1,065,680			
B3020	Roof Openings	\$1,980,000	\$3,045,680	\$18.46	6.4%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$4,290,000			
C1020	Interior Doors	\$825,000			
C1030	Specialties/Millwork	\$1,406,950	\$6,521,950	\$39.53	13.8%
C20 STAIRCASES					
C2010	Stair Construction	\$484,000			
C2020	Stair Finishes	\$75,446	\$559,446	\$3.39	1.2%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$1,650,000			
C3020	Floor Finishes	\$2,211,000			
C3030	Ceiling Finishes	\$1,155,000	\$5,016,000	\$30.40	10.6%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$400,000	\$400,000	\$2.42	0.8%
D20 PLUMBING					
D20	Plumbing	\$2,159,850	\$2,159,850	\$13.09	4.6%
D30 HVAC					
D30	HVAC	\$7,465,175	\$7,465,175	\$45.24	15.8%

OPTION 1 - Enrollment Accommodation



Brookline High School
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CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION					
D40 FIRE PROTECTION					
D40	Fire Protection	\$742,500	\$742,500	\$4.50	1.6%
D50 ELECTRICAL					
D5010	Complete System	\$6,106,500	\$6,106,500	\$37.01	12.9%
E10 EQUIPMENT					
E10	Equipment	\$45,000	\$45,000	\$0.27	0.1%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$1,777,327			
E2020	Movable Furnishings	NIC	\$1,777,327	\$10.77	3.8%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$100,000			
F2020	Hazardous Components Abatement	\$0	\$100,000	\$0.61	0.2%
TOTAL DIRECT COST (Trade Costs)			\$47,369,973	\$287.09	100.0%

OPTION 1 - Enrollment Accommodation



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION; ADDITION

GROSS FLOOR AREA CALCULATION

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Basement	15,930
First Floor	38,060
Second Floor	37,170
Third floor	37,170
Fourth floor	36,670

TOTAL GROSS FLOOR AREA (GFA)	165,000 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	682	sf	12.00	8,184
Re-bar	3,410	lbs.	1.32	4,501
Concrete material; 3,000 psi	35	cy	132.00	4,620
Placing concrete	35	cy	90.00	3,150

Foundation wall; 14" thick x 36" high

Formwork	2,046	sf	17.00	34,782
Re-bar	4,092	lbs.	1.32	5,401
Concrete material; 3,000 psi	49	cy	132.00	6,468
Placing concrete	49	cy	90.00	4,410

Grade Beam at interior; 2'-0" wide x 2'-0" deep

Formwork	1,000	sf	12.00	12,000
Re-bar	16,250	lbs.	1.32	21,450
Concrete material; 3,000 psi	41	cy	132.00	5,412
Placing concrete	41	cy	90.00	3,690

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	3,335	sf	16.00	53,360
Re-bar	39,150	lbs.	1.32	51,678
Concrete material; 3,000 psi	391	cy	132.00	51,612
Placing concrete	391	cy	90.00	35,190
Set anchor bolts grout plates	116	ea	165.00	19,140

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	3,060	sf	16.00	48,960
Re-bar	25,200	lbs.	1.32	33,264
Concrete material; 3,000 psi	265	cy	132.00	34,980
Placing concrete	265	cy	90.00	23,850
Set anchor bolts grout plates	180	ea	165.00	29,700

Piers/Pilasters; 22" x 22"

Formwork 18" x 18"	1,080	sf	18.00	19,440
Re-bar	3,480	lbs	1.32	4,594
Concrete material; 3,000 psi	29	cy	132.00	3,828
Placing concrete	29	cy	150.00	4,350

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	1,023	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	1,023	sf	3.00	3,069
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OPTION 1 - Enrollment Accommodation



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GFA 165,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION

56	312000	EARTHWORK					
57		<u>Continuous footings</u>					
58		Excavation	253	cy	25.00	6,325	
59		Remove off site	253	cy	20.00	5,060	
60		Backfill with imported material	169	cy	38.00	6,422	
61		<u>Spread footings</u>					
62		Excavation	1,448	cy	25.00	36,200	
63		Remove off site	1,448	cy	20.00	28,960	
64		Backfill with imported material	792	cy	38.00	30,096	
65		<u>Grade Beams</u>					
66		Excavation	185	cy	25.00	4,625	
67		Remove off site	185	cy	20.00	3,700	
68		Backfill with imported material	144	cy	38.00	5,472	
69		SUBTOTAL				657,943	

A1020 SPECIAL FOUNDATIONS

SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

New Slab on grade, 5" thick

76		Gravel fill, 12"	1,410	cy	36.00	50,760	
77		Rigid insulation	38,060	sf	2.25	85,635	
78		Vapor barrier	38,060	sf	0.75	28,545	
79		Compact existing sub-grade	38,060	sf	0.50	19,030	
80		Mesh reinforcing 15% lap	43,769	sf	0.80	35,015	
81		Concrete - 5" thick; 4,000 psi	622	cy	125.00	77,750	
82		Placing concrete	622	cy	45.00	27,990	
83		Finishing and curing concrete	38,060	sf	1.50	57,090	
84		Control joints - saw cut	38,060	sf	0.10	3,806	
85		<u>Miscellaneous</u>					
86		Foundations against existing building	563	lf	250.00	140,750	
87		New Elevator pit	2	ea	35,000.00	70,000	
88		New loading dock	1	ls	40,000.00	40,000	
89		Equipment pads	1	ls	15,000.00	15,000	
90		SUBTOTAL				651,371	

TOTAL - FOUNDATIONS						\$1,309,314
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A20 BASEMENT CONSTRUCTION

A2010 BASEMENT EXCAVATION

98		Excavation for basement	8,850	cy	12.00	106,200	
99		Export off site	8,850	cy	20.00	177,000	
100		Temporary for sheeting and shoring	5,325	sf	55.00	292,875	
101		SUBTOTAL				576,075	

A2020 BASEMENT WALLS

104		<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>					
105		Formwork	710	sf	12.00	8,520	

OPTION 1 - Enrollment Accommodation



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION							
106	Re-bar	3,550	lbs.	1.32	4,686		
107	Concrete material; 3,000 psi	36	cy	132.00	4,752		
108	Placing concrete	36	cy	90.00	3,240		
109	<u>Basement wall; 14" thick</u>						
110	Formwork	10,650	sf	17.00	181,050		
111	Re-bar	21,300	lbs.	1.32	28,116		
112	Concrete material; 3,000 psi	254	cy	132.00	33,528		
113	Placing concrete	254	cy	90.00	22,860		
114	Waterproofing retaining wall	5,325	sf	7.00	37,275		
115	SUBTOTAL					324,027	

TOTAL - BASEMENT CONSTRUCTION						\$900,102
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B10 SUPERSTRUCTURE

121		14.80	lbs/sf		-		
122	B1010 FLOOR CONSTRUCTION	1,221	tns		-		
123	New Addition	126,940	sf				
124	<u>Floor Structure - Steel:</u>						
125	Steel beams and columns to new addition; 14.8#/SF	939	tns	3,500.00	3,286,500		
126	Premium for HSS	235	tns	300.00	70,500		
127	Shear studs	25,388	ea	2.50	63,470		
128	<u>Floor Structure</u>						
129	2" 18 Ga. Metal galvanized floor Deck	126,940	sf	3.75	476,025		
130	WWF reinforcement	145,981	sf	0.80	116,785		
131	Concrete Fill to metal deck; 6" Light Weight	2,962	cy	160.00	473,920		
132	Place and finish concrete	126,940	sf	2.00	253,880		
133	Rebar to decks	38,082	lbs	1.20	45,698		
134	Misc. angles	126,940	sf	0.50	63,470		
135	<u>Miscellaneous</u>						
136	Fire proofing to columns and beams	126,940	sf	2.25	285,615		
137	Intumescent paint	1	ls	50,000.00	50,000		
138	Fire stopping floors	1	ls	25,000.00	25,000		
139	SUBTOTAL					5,210,863	

141	B1020 ROOF CONSTRUCTION						
142	New Addition	38,060	sf				
143	<u>Roof Structure - Steel:</u>						
144	Steel beams and columns to new addition; 14.8#/SF	282	tns	3,500.00	987,000		
145	Premium for HSS	71	tns	300.00	21,300		
146	Exposed steel	1	ls	50,000.00	50,000		
147	<u>Roof Structure</u>						
148	Acoustic deck allowance	8,000	sf	7.00	56,000		
149	3" 20 Ga. galvanized Metal Roof Deck	30,060	sf	4.00	120,240		
150	<u>Miscellaneous</u>						
151	Concrete under RTU's	15,000	sf	8.00	120,000		
152	Fire proofing to columns, beams and deck	30,060	sf	3.00	90,180		
153	SUBTOTAL					1,444,720	

OPTION 1 - Enrollment Accommodation



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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION

TOTAL - SUPERSTRUCTURE						\$6,655,583
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B20	EXTERIOR CLOSURE
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B2010 EXTERIOR WALLS
Exterior Wall Area - Solid Assume 70% **33,275** sf

042000 MASONRY
Brick veneer, 3 color; 85% of solid area **28,284** sf 40.00 1,131,360
Staging to exterior wall **33,275** sf 4.00 133,100

055000 MISC. METALS
Stainless steel sign at main entrance **1** ls 20,000.00 20,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING
Air barrier **33,275** sf 6.50 216,288
Air barrier/flashing at windows **8,389** lf 6.25 52,431
Miscellaneous sealants to closure **33,275** sf 1.00 33,275

072100 THERMAL INSULATION
Insulation **33,275** sf 2.25 74,869

076400 CLADDING
Metal panel; 15% of solid area **4,991** sf 75.00 374,325
Roof equipment screen **1** ls 100,000.00 100,000

092900 GYPSUM BOARD ASSEMBLIES
6" metal stud backup **33,275** sf 9.00 299,475
Gypsum Sheathing **33,275** sf 2.75 91,506
Drywall lining to interior face of stud backup **33,275** sf 3.30 109,808

SUBTOTAL 2,636,437

B2020 WINDOWS
Exterior Wall Area - Glazed Assume 30% **14,261** sf

061000 ROUGH CARPENTRY
Wood blocking at openings **8,389** lf 8.00 67,112

070001 WATERPROOFING, DAMPPROOFING AND CAULKING
Backer rod & double sealant **8,389** lf 8.50 71,307

080001 METAL WINDOWS
Windows, double glazed; 20% of glazed area **2,852** sf 90.00 256,680
Curtainwall, double glazed; 80% of glazed area **11,409** sf 120.00 1,369,080
Sunshades; horizontal **1** ls 75,000.00 75,000

089000 LOUVERS
Louvers **250** sf 65.00 16,250

SUBTOTAL 1,855,429

OPTION 1 - Enrollment Accommodation



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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION								
208	B2030 EXTERIOR DOORS							
209	Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000			
210	HM doors, frames and hardware- Double	4	pr	2,000.00	8,000			
211	Backer rod & double sealant	240	lf	4.00	960			
212	Wood blocking at openings	240	lf	3.00	720			
213	SUBTOTAL					73,680		
214								
215	TOTAL - EXTERIOR CLOSURE						\$4,565,546	
216								
217								
218	B30 ROOFING							
219								
220	B3010 ROOF COVERINGS							
221	New roofing complete	38,060	sf	28.00	1,065,680			
222	SUBTOTAL					1,065,680		
223								
224	B3020 ROOF OPENINGS							
225	Skylights, allow for atrium skylight	15,000	sf	130.00	1,950,000			
226	Smoke hatch	5	loc	5,000.00	25,000			
227	Roof hatch	2	loc	2,500.00	5,000			
228	SUBTOTAL					1,980,000		
229								
230	TOTAL - ROOFING						\$3,045,680	
231								
232								
233	C10 INTERIOR CONSTRUCTION							
234								
235	C1010 PARTITIONS							
236	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	165,000	gsf	26.00	4,290,000			
237	SUBTOTAL					4,290,000		
238								
239	C1020 INTERIOR DOORS							
240	Interior doors, frames and hardware	165,000	gsf	5.00	825,000			
241	SUBTOTAL					825,000		
242								
243	C1030 SPECIALTIES / MILLWORK							
244	Toilet Partitions and accessories	165,000	gsf	0.80	132,000			
245	Backer panels in electrical closets	1	ls	1,000.00	1,000			
246	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	165,000	sf	1.00	165,000			
247	Room Signs	165,000	gsf	0.40	66,000			
248	Fire extinguisher cabinets	55	ea	350.00	19,250			
249	Lockers	165,000	gsf	1.60	264,000			
250	Janitors Work Shop Accessories	1	ls	1,500.00	1,500			
251	Janitors Closet Accessories	5	rms	300.00	1,500			
252	<i>Media</i>							
253	Reception desks	4	loc	25,000	100,000			
254	Railings to open to below areas	462	lf	350	161,700			
255	Library shelving at perimeters 7' Tall				F,F & E			
256	Library shelving at perimeters 3' Tall				F,F & E			
257	Display cases	165,000	gsf	0.25	41,250			
258	Miscellaneous metals throughout building	165,000	sf	1.50	247,500			

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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION

259	Miscellaneous sealants throughout building	165,000	sf	1.25	206,250		
260	SUBTOTAL					1,406,950	

TOTAL - INTERIOR CONSTRUCTION						\$6,521,950	
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

268	Metal pan stair; egress stair	12	flt	25,000.00	300,000		
269	Main staircase	1	flt	100,000.00	100,000		
270	Commons tiered seating	200	lf	250.00	50,000		
271	Commons steps	2	loc	5,000.00	10,000		
272	Concrete fill to stairs	12	flt	2,000.00	24,000		
273	SUBTOTAL					484,000	

C2020 STAIR FINISHES

276	High performance coating to stairs including all railings etc.	12	flt	3,000.00	36,000		
277	Rubber tile at stairs - landings	1,200	sf	10.00	12,000		
278	Rubber tile at stairs - treads & risers	1,440	lft	19.06	27,446		
279	SUBTOTAL					75,446	

TOTAL - STAIRCASES						\$559,446	
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C30 INTERIOR FINISHES

C3010 WALL FINISHES

287	Wall finishes	165,000	sf	10.00	1,650,000		
288	SUBTOTAL					1,650,000	

C3020 FLOOR FINISHES

291	Floor finishes	165,000	sf	11.00	1,815,000		
292	Moisture mitigation	132,000	sf	3.00	396,000		
293	SUBTOTAL					2,211,000	

C3030 CEILING FINISHES

296	Ceiling finishes	165,000	sf	7.00	1,155,000		
297	SUBTOTAL					1,155,000	

TOTAL - INTERIOR FINISHES						\$5,016,000	
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D10 CONVEYING SYSTEMS

D1010 ELEVATOR

305	New elevator; 5s top; oversize; 5,000 lbs	2	ea	200,000.00	400,000		
306	SUBTOTAL					400,000	

TOTAL - CONVEYING SYSTEMS						\$400,000	
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D20 PLUMBING

D20 PLUMBING, GENERALLY
Equipment

OPTION 1 - Enrollment Accommodation



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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION								
315	Plumbing equipment	165,000	sf	2.00	330,000			
316	<u>Plumbing Fixtures & Specialties</u>							
317	Miscellaneous plumbing fixtures	165,000	sf	1.00	165,000			
318	<u>Domestic Water Type L Copper Pipe</u>							
319	Domestic water pipe with fittings & hangers	165,000	sf	2.50	412,500			
320	Domestic water pipe insulation	165,000	sf	1.50	247,500			
321	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
322	Sanitary waste pipe with fittings & hangers	165,000	sf	2.35	387,750			
323	Kitchen waste pipe with fittings & hangers	165,000	sf	0.30	49,500			
324	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
325	Acid waste & vent pipe with fittings & hangers	165,000	sf	0.75	123,750			
326	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
327	Storm water pipe with fittings & hangers	165,000	sf	1.25	206,250			
328	Pipe insulation on horizontal runs	165,000	sf	0.20	33,000			
329	<u>Gas And Fuel Distribution Pipe</u>							
330	Gas pipe with fittings & hangers	165,000	sf	0.75	123,750			
331	<u>Miscellaneous</u>							
332	Coordination & BIM	165,000	sf	0.25	41,250			
333	Coring, sleeves & firestopping	165,000	sf	0.03	4,950			
334	Commissioning support	165,000	sf	0.08	13,200			
335	Fees & permits	165,000	sf	0.13	21,450			
336	SUBTOTAL					2,159,850		
337								
338	TOTAL - PLUMBING							\$2,159,850

D30 HVAC

D30 HVAC, GENERALLY

344	<u>HVAC Equipment</u>						
345	HVAC equipment	165,000	sf	1.00	165,000		
346	<u>Pumps</u>						
347	Pumps	165,000	sf	0.28	46,200		
348	<u>Air distribution</u>						
349	RTU's Gas fired heating with DX cooling	313,500	cfm	9.25	2,899,875		
350	MAU unit gas fired heating	5,000	cfm	3.25	16,250		
351	Air distribution equipment	165,000	sf	6.00	990,000		
352	Exhaust fans	165,000	sf	0.50	82,500		
353	<u>Sheet metal & Accessories</u>						
354	Sheet metal & accessories	165,000	sf	9.00	1,485,000		
355	<u>Piping</u>						
356	<u>Hot Water Piping</u>						
357	Hot water piping with fittings & hangers	165,000	sf	2.00	330,000		
358	<u>Chilled Water Piping</u>						
359	Chilled water piping with fittings & hangers	165,000	sf	0.55	90,750		
360	<u>Refrigerant Piping</u>						
361	Refrigerant piping with fittings & hangers	165,000	sf	0.10	16,500		
362	<u>Condensate Drain Piping</u>						

OPTION 1 - Enrollment Accommodation



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GFA 165,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION

363	Condensate drain piping with fittings & hangers	165,000	sf	0.15	24,750		
364	<u>Piping Insulation</u>						
365	Piping insulation	165,000	sf	1.50	247,500		
366	<u>Automatic Temperature Controls</u>						
367	Automatic temperature controls DDC	165,000	sf	4.50	742,500		
368	Balancing						
369	System testing & balancing	165,000	sf	0.60	99,000		
370	<u>Miscellaneous</u>						
371	Commissioning support	165,000	sf	0.42	69,300		
372	Coring, sleeves & fire stopping	165,000	sf	0.17	28,050		
373	Rigging & equipment rental	165,000	sf	0.42	69,300		
374	Vibration & seismic restraints	165,000	sf	0.38	62,700		
375	SUBTOTAL					7,465,175	

TOTAL - HVAC						\$7,465,175
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D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

383	Fire protection system	165,000	gsf	4.50	742,500		
384	SUBTOTAL					742,500	

TOTAL - FIRE PROTECTION						\$742,500
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D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

393	Normal power distribution switchgear & feeders based on 4000A 480/277V	165,000	sf	5.00	825,000		
395	<u>Emergency power</u>						
396	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	165,000	sf	4.00	660,000		
397	<u>Equipment Wiring</u>						
398	Equipment wiring	165,000	sf	2.00	330,000		
399	SUBTOTAL					1,815,000	

D5020 LIGHTING & POWER

Lighting & Branch Power

403	Lighting fixtures (LED as BOD) with installation labor	165,000	sf	5.00	825,000		
405	<u>Lighting control system</u>						
406	Lighting controls including daylight harvesting system, allow	165,000	sf	1.15	189,750		
407	<u>Branch devices</u>						
408	Branch devices	165,000	sf	0.50	82,500		
409	<u>Lighting and branch circuitry</u>						
410	Lighting & branch circuitry	165,000	sf	5.50	907,500		
411	SUBTOTAL					2,004,750	

OPTION 1 - Enrollment Accommodation



Brookline High School
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 Brookline, MA

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Feasibility Estimate

GFA 165,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION

414	D5030 COMMUNICATION & SECURITY SYSTEMS							
415	<u>Fire Alarm</u>							
416	Fire alarm system	165,000	sf	2.00	330,000			
417	<u>Bi-Directional System</u>							
418	BDA system	165,000	sf	0.50	82,500			
419	<u>Security System</u>							
420	Security System	165,000	sf	2.50	412,500			
421	<u>Telephone/Data/CATV</u>							
422	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner		
423	Telecommunications rough in	165,000	sf	1.50	247,500			
424	Telecommunications devices and cabling	165,000	sf	2.00	330,000			
425	<u>Public Address/Clock System</u>							
426	PA/Master Clock system	165,000	sf	1.25	206,250			
427	<u>Audio Visual (rough-in and power only)</u>							
428	AV equipment					By Owner		
429	Rough-In conduit and backboxes only	165,000	sf	0.50	82,500			
430								
431	Allowance for Black Box Theater	1	ls	150,000.00	150,000			
432								
433	Allowance for White Box Theater	1	ls	150,000.00	150,000			
434	<u>Gymnasium</u>							
435	Sound system	1	ls	15,000.00	In Renovation			
436	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	In Renovation			
437	Misc. gym equipment feed and connections	1	ls	25,000.00	In Renovation			
438	SUBTOTAL						1,991,250	
439								
440	D5040 OTHER ELECTRICAL SYSTEMS							
441	<u>Miscellaneous</u>							
442	Temp power and lights	165,000	sf	0.45	74,250			
443	Seismic restraints	1	ls	15,000.00	15,000			
444	Lightning Protection System, UL Master label	165,000	sf	0.45	74,250			
445	Fees & Permits	165,000	ls	0.80	132,000			
446	SUBTOTAL						295,500	
447								
448	TOTAL - ELECTRICAL							\$6,106,500
449								
450								
451	E10 EQUIPMENT							
452								
453	E10 EQUIPMENT, GENERALLY							
454	Kiln	2	ea	5,000.00	10,000			
455	Food Service equipment					In Renovation		
456	Loading dock equipment	1	ls	20,000.00	20,000			
319	Electrically operated projection screens	1	loc	15,000.00	15,000			
320	SUBTOTAL						45,000	
321								
322	TOTAL - EQUIPMENT							\$45,000
323								
324								
325	E20 FURNISHINGS							
326								
327	E2010 FIXED FURNISHINGS							

OPTION 1 - Enrollment Accommodation



Brookline High School
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Feasibility Estimate

GFA 165,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 1 - ENROLLMENT ACCOMMODATION: ADDITION								
328	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500			
329	Window blinds	14,261	sf	7.00	99,827			
330	Counters, base cabinets, tall storage in classrooms and other rooms	165,000	gsf	10.00	1,650,000			
331	SUBTOTAL					1,777,327		
332								
333	E2020 MOVABLE FURNISHINGS							
334	All movable furnishings to be provided and installed by owner							
335	SUBTOTAL					NIC		
336								
337	TOTAL - FURNISHINGS						\$1,777,327	
338								
339								
340	F10 SPECIAL CONSTRUCTION							
341								
342	F10 SPECIAL CONSTRUCTION							
343	No items in this section							
344	SUBTOTAL							
345								
346	TOTAL - SPECIAL CONSTRUCTION							
347								
348								
349	F20 SELECTIVE BUILDING DEMOLITION							
350								
351	F2010 BUILDING ELEMENTS DEMOLITION							
352	Connections to existing building	1	ls	100,000.00	100,000			
353	SUBTOTAL					100,000		
354								
355	F2020 HAZARDOUS COMPONENTS ABATEMENT							
356	See main summary for HazMat allowance				See Summary			
357	SUBTOTAL							
358								
359	TOTAL - SELECTIVE BUILDING DEMOLITION						\$100,000	

OPTION 2 - State Standards Summary



Brookline High School

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Brookline, MA

Feasibility Estimate

OPTION 2 - STATE STANDARDS: RENOVATION + ADDITION

Sep-18

RENOVATIONS TO EXISTING SCHOOL		228,690	\$73.68	\$16,849,604
ADDITIONS		242,280	\$272.78	\$66,089,024
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)		113,980	\$10.00	\$1,139,800
REMOVE HAZARDOUS MATERIALS				\$5,482,720
SITework - ALLOWANCE 8% of BUILDING				\$6,635,090
SUB-TOTAL		470,970	\$204.25	\$96,196,238
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$8,657,661
DESIGN AND PRICING CONTINGENCY	15%			\$15,728,085
SUB-TOTAL		470,970	\$256.03	\$120,581,984
GENERAL CONDITIONS	6.00%			\$7,234,919
GENERAL REQUIREMENTS	4.00%			\$4,823,279
BONDS	1.15%			\$1,386,693
INSURANCE	1.25%			\$1,507,275
PERMIT				Waived
CM FEE	2.50%			\$3,388,354
CM/GMP CONTINGENCY	3%			\$3,617,460
PHASING PREMIUM	5.0%			\$6,029,099
TOTAL OF ALL CONSTRUCTION		470,970	\$315.45	\$148,569,063

ALTERNATES:

1. Repair exterior walls including insulating interior face	ADD	\$7,003,483
2. Replace existing windows	ADD	\$6,266,148
3. Replace existing roof	ADD	\$1,709,400

OPTION 2 - State Standards



Brookline High School
Design Options
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Feasibility Estimate

GFA 228,690

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 2 - STATE STANDARDS: RENOVATION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$55,300			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$42,650	\$97,950	\$0.43	0.6%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$326,790			
B1020	Roof Construction	\$75,000	\$401,790	\$1.76	2.4%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$0			
B2020	Windows/Curtainwall	\$0			
B2030	Exterior Doors	\$29,436	\$29,436	\$0.13	0.2%
B30 ROOFING					
B3010	Roof Coverings	\$0			
B3020	Roof Openings	\$0	\$0	\$0.00	0.0%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$2,461,590			
C1020	Interior Doors	\$245,750			
C1030	Specialties/Millwork	\$231,935	\$2,939,275	\$12.85	17.4%
C20 STAIRCASES					
C2010	Stair Construction	\$72,000			
C2020	Stair Finishes	\$48,000	\$120,000	\$0.52	0.7%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$853,230			
C3020	Floor Finishes	\$459,690			
C3030	Ceiling Finishes	\$1,486,485	\$2,799,405	\$12.24	16.6%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$215,000	\$215,000	\$0.94	1.3%
D20 PLUMBING					
D20	Plumbing	\$515,691	\$515,691	\$2.25	3.1%
D30 HVAC					
D30	HVAC	\$2,529,735	\$2,529,735	\$11.06	15.0%
D40 FIRE PROTECTION					
D40	Fire Protection	\$1,129,105	\$1,129,105	\$4.94	6.7%
D50 ELECTRICAL					
D5010	Electrical Systems	\$4,313,366	\$4,313,366	\$18.86	25.6%
E10 EQUIPMENT					
E10	Equipment	\$400,000	\$400,000	\$1.75	2.4%

OPTION 2 - State Standards



**Brookline High School
Design Options
Brookline, MA**

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Feasibility Estimate

GFA 228,690

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 2 - STATE STANDARDS: RENOVATION					
E20	FURNISHINGS				
E2010	Fixed Furnishings	\$701,999			
E2020	Movable Furnishings	NIC	\$701,999	\$3.07	4.2%
F10	SPECIAL CONSTRUCTION				
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20	SELECTIVE BUILDING DEMOLITION				
F2010	Building Elements Demolition	\$656,852			
F2020	Hazardous Components Abatement	\$0	\$656,852	\$2.87	3.9%
TOTAL DIRECT COST (Trade Costs)			\$16,849,604	\$73.68	100.0%

OPTION 2 - State Standards



Brookline High School
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Feasibility Estimate

GFA 228,690

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: RENOVATION

GROSS FLOOR AREA CALCULATION

CODE RENOVATION				2,640		
INTENSIVE RENOVATION				39,150		
MINIMAL RENOVATION				186,900		

TOTAL GROSS FLOOR AREA (GFA)				228,690	sf	
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Allowance for new footings at bracing to intensive/code renovation	5,530	sf	10.00	55,300		
SUBTOTAL						55,300

A1020 SPECIAL FOUNDATIONS

No work in this section
SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

Cutting and patching; generally at intensive/code renovation slab	5,530	sf	5.00	27,650		
Equipment pads	1	ls	15,000.00	15,000		
SUBTOTAL						42,650

TOTAL - FOUNDATIONS						\$97,950
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Allowance for bracing steel at full renovation; 2lbs per SF	42	tns	5,000.00	210,000		
Fireproofing to new steel	1	ls	50,000.00	50,000		
Openings in structure for MEP systems	41,790	gsf	1.00	41,790		
Fire stopping floors	1	ls	25,000.00	25,000		
SUBTOTAL						326,790

B1020 ROOF CONSTRUCTION

<u>Roof Structure - Steel:</u>						
New steel for RTU's	1	ls	25,000.00	25,000		
Miscellaneous steel upgrades to existing roof structure	1	ls	50,000.00	50,000		
SUBTOTAL						75,000

TOTAL - SUPERSTRUCTURE						\$401,790
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Repair, repoint and clean all exterior walls	85,533	sf				
	85,533	sf	40.00	ETR		
Insulate exterior walls to meet code; new furred walls at perimeter	85,533	sf	12.00	ETR		

OPTION 2 - State Standards



Brookline High School
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Feasibility Estimate

GFA 228,690

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - STATE STANDARDS: RENOVATION								
51	Premium for work at decorative façade	1	ls	100,000.00	ETR			
52	SUBTOTAL					-		
53								
54	B2020 WINDOWS/CURTAINWALL							
55	Replace existing windows/curtainwall etc.	36,657	sf	105.00	ETR			
56	SUBTOTAL					-		
57								
58	B2030 EXTERIOR DOORS							
59	Replace exterior door, double	2	pr	8,500.00	17,000			
60	Replace exterior door, single	5	ea	2,000.00	10,000			
61	Backer rod & double sealant	203	lf	9.00	1,827			
62	Wood blocking at openings	203	lf	3.00	609			
63	SUBTOTAL					29,436		
64								
65	TOTAL - EXTERIOR CLOSURE							\$29,436
66								
67								
68	B30 ROOFING							
69								
70	B3010 ROOF COVERINGS							
71	Replace existing roofing systems	37,000	sf	28.00	ETR			
72	SUBTOTAL					-		
73								
74	B3020 ROOF OPENINGS							
75	No work in this section							
76	SUBTOTAL					-		
77								
78	TOTAL - ROOFING							
79								
80								
81	C10 INTERIOR CONSTRUCTION							
82								
83	C1010 PARTITIONS							
84	Allowance for fire separation walls	45,270	sf	35.00	1,584,450			
85	Allowance to modify existing walls at code renovation	2,640	gsf	6.00	15,840			
86	Replace walls at intensive renovation	39,150	gsf	22.00	861,300			
87	SUBTOTAL					2,461,590		
88								
89	C1020 INTERIOR DOORS							
90	Adjust openings to meet code requirements	1	ls	50,000.00	50,000			
91	Remove and replace doors at intensive renovation	39,150	gsf	5.00	195,750			
92	SUBTOTAL					245,750		
93								
94	C1030 SPECIALTIES / MILLWORK							
95	Toilet Partitions and accessories	41,790	gsf	0.80	33,432			
96	Lockers, full height	41,790	gsf	1.50	62,685			
97								
98	055000 MISCELLANEOUS METALS							
99	Miscellaneous metals throughout building	41,790	sf	1.00	41,790			
100								
101	061000 ROUGH CARPENTRY							
102	Rough blocking	41,790	sf	0.50	20,895			
103								

OPTION 2 - State Standards



Brookline High School
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Feasibility Estimate

GFA 228,690

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: RENOVATION

104	070001	WATERPROOFING, DAMPPROOFING AND CAULKING					
105		Miscellaneous sealants throughout building	41,790	sf	1.50	62,685	
106							
107							
108	101400	SIGNAGE					
109		Code compliant signage	41,790	sf	0.25	10,448	
110		SUBTOTAL				231,935	

TOTAL - INTERIOR CONSTRUCTION						\$2,939,275
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

118		New handrails and guardrails @ stairs; code upgrades	12	flt	6,000.00	72,000	
119		SUBTOTAL				72,000	

C2020 STAIR FINISHES

122		Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips	12	flt	4,000.00	48,000	
123		SUBTOTAL				48,000	

TOTAL - STAIRCASES						\$120,000
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C30 INTERIOR FINISHES

C3010 WALL FINISHES

131		Painting	228,690	gsf	3.00	686,070	
132		Miscellaneous walls finishes to full renovated areas	41,790	gsf	4.00	167,160	
133		SUBTOTAL				853,230	

C3020 FLOOR FINISHES

136		New floor finishes throughout	41,790	gsf	11.00	459,690	
137		SUBTOTAL				459,690	

C3030 CEILING FINISHES

140		Replace existing ceilings throughout	228,690	gsf	6.50	1,486,485	
141		SUBTOTAL				1,486,485	

TOTAL - INTERIOR FINISHES						\$2,799,405
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D10 CONVEYING SYSTEMS

148		Remove existing elevator and install new elevator	1	ls	180,000.00	180,000	
149		New lift	1	stp	35,000.00	35,000	
150		SUBTOTAL				215,000	

TOTAL - CONVEYING SYSTEMS						\$215,000
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D20 PLUMBING

OPTION 2 - State Standards



Brookline High School
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Feasibility Estimate

GFA 228,690

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - STATE STANDARDS: RENOVATION								
157	D20 PLUMBING, GENERALLY							
158	<u>Equipment</u>							
159	Plumbing equipment	41,790	sf	2.00	83,580			
160	<u>Plumbing Fixtures & Specialties</u>							
161	Miscellaneous plumbing fixtures	41,790	sf	1.00	41,790			
162	<u>Domestic Water Type L Copper Pipe</u>							
163	Domestic water pipe with fittings & hangers	41,790	sf	2.00	83,580			
164	Domestic water pipe insulation	41,790	sf	1.50	62,685			
165	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
166	Sanitary waste pipe with fittings & hangers	41,790	sf	2.35	98,207			
167	Kitchen waste pipe with fittings & hangers	41,790	sf	0.30	12,537			
168	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
169	Acid waste & vent pipe with fittings & hangers	41,790	sf	0.75	31,343			
170	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
171	Storm water pipe with fittings & hangers	41,790	sf	1.25	52,238			
172	Pipe insulation on horizontal runs	41,790	sf	0.20	8,358			
173	<u>Gas And Fuel Distribution Pipe</u>							
174	Gas pipe with fittings & hangers	41,790	sf	0.75	31,343			
175	<u>Miscellaneous</u>							
176	Coring, sleeves & firestopping	41,790	sf	0.03	1,254			
177	Commissioning support	41,790	sf	0.08	3,343			
178	Fees & permits	41,790	sf	0.13	5,433			
179	SUBTOTAL					515,691		
180								
181	TOTAL - PLUMBING						\$515,691	
182								
183								
184	D30 HVAC							
185								
186	D30 HVAC, GENERALLY							
187	<u>HVAC Equipment</u>							
188	HVAC equipment	41,790	sf	1.00	41,790			
189	<u>Pumps</u>							
190	Pumps	41,790	sf	0.28	11,701			
191	<u>Air distribution</u>							
192	RTU's Gas fired heating with DX cooling	79,401	cfm	9.25	734,459			
193	Air distribution equipment	41,790	sf	3.00	125,370			
194	Exhaust fans	41,790	sf	0.50	20,895			
195	<u>Sheet metal & Accessories</u>							
196	Sheet metal & accessories	41,790	sf	9.00	376,110			
197	<u>Piping</u>							
198	<u>Hot Water Piping</u>							
199	Hot water piping with fittings & hangers	41,790	sf	2.00	83,580			
200	<u>Chilled Water Piping</u>							
201	Chilled water piping with fittings & hangers	41,790	sf	0.55	22,985			
202	<u>Refrigerant Piping</u>							
203	Refrigerant piping with fittings & hangers	41,790	sf	0.10	4,179			
204	<u>Condensate Drain Piping</u>							
205	Condensate drain piping with fittings & hangers	41,790	sf	0.15	6,269			

OPTION 2 - State Standards



Brookline High School
 Design Options
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Feasibility Estimate

GFA 228,690

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - STATE STANDARDS: RENOVATION								
206	<u>Piping Insulation</u>							
207	Piping insulation	41,790	sf	1.50	62,685			
208	<u>Automatic Temperature Controls</u>							
209	Automatic temperature controls DDC	41,790	sf	4.50	188,055			
210	Balancing							
211	System testing & balancing	41,790	sf	0.60	25,074			
212	<u>Miscellaneous</u>							
213	Cleaning existing ductwork and piping	186,900	sf	4.00	747,600			
214	Demolition & make safe	41,790	sf	0.50	20,895			
215	Commissioning support	41,790	sf	0.42	17,552			
216	Coring, sleeves & fire stopping	41,790	sf	0.17	7,104			
217	Rigging & equipment rental	41,790	sf	0.42	17,552			
218	Vibration & seismic restraints	41,790	sf	0.38	15,880			
219	SUBTOTAL					2,529,735		
220								
221	TOTAL - HVAC							\$2,529,735
222								
223								
224	D40 FIRE PROTECTION							
225								
226	D40 FIRE PROTECTION, GENERALLY							
227	Fire pump	1	ls	100,000.00	100,000			
228	New fire protection system	228,690	sf	4.50	1,029,105			
229	SUBTOTAL					1,129,105		
230								
231	TOTAL - FIRE PROTECTION							\$1,129,105
232								
233								
234	D50 ELECTRICAL							
235								
236	D5010 SERVICE & DISTRIBUTION							
237	Gear & Distribution							
238	Normal power distribution switchgear & feeders based on 4000A 480/277V	228,690	sf	5.00	1,143,450			
239	<u>Emergency power</u>							
240	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	228,690	sf	4.00	914,760			
241	<u>Equipment Wiring</u>							
242	Equipment wiring	41,790	sf	2.00	83,580			
243	SUBTOTAL					2,141,790		
244								
245	D5020 LIGHTING & POWER							
246	<u>Lighting & Branch Power</u>							
247	Lighting fixtures (LED as BOD) with installation labor	228,690	sf	5.00	1,143,450			
248	<u>Lighting control system</u>							
249	Lighting controls including daylight harvesting system, allow	228,690	sf	1.15	262,994			
250	<u>Branch devices</u>							
251	Branch devices	41,790	sf	0.50	20,895			
252	<u>Lighting and branch circuitry</u>							
253	Lighting & branch circuitry	41,790	sf	5.50	229,845			
254	SUBTOTAL					1,657,184		

OPTION 2 - State Standards



Brookline High School
Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 228,690

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: RENOVATION

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D5030 COMMUNICATION & SECURITY SYSTEMS

<u>Fire Alarm</u>							
Fire alarm system	41,790	sf	2.00	83,580			
<u>Bi-Directional System</u>							
BDA system	41,790	sf	0.50	20,895			
<u>Security System</u>							
Security System	41,790	sf	2.50	104,475			
<u>Telephone/Data/CATV</u>							
Network switches, PBX, IP, VP, CCTV (By owner)					By Owner		
Telecommunications rough in	41,790	sf	1.50	62,685			
Telecommunications devices and cabling	41,790	sf	2.00	83,580			
<u>Public Address/Clock System</u>							
PA/Master Clock system	41,790	sf	1.25	52,238			
<u>Audio Visual (rough-in and power only)</u>							
AV equipment					By Owner		
Rough-In conduit and backboxes only	41,790	sf	0.50	20,895			
<u>Gymnasium</u>							
Sound system	1	ls	15,000.00	NIC			
Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	NIC			
Misc. gym equipment feed and connections	1	ls	25,000.00	NIC			
SUBTOTAL						428,348	

D5040 OTHER ELECTRICAL SYSTEMS

<u>Miscellaneous</u>							
Demolition & make safe	1	ls	15,000.00	15,000			
Temp power and lights	41,790	sf	0.45	18,806			
Lightning Protection System, UL Master label	41,790	sf	0.45	18,806			
Fees & Permits	41,790	ls	0.80	33,432			
SUBTOTAL						86,044	

TOTAL - ELECTRICAL						\$4,313,366
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E10 EQUIPMENT

E10 EQUIPMENT, GENERALLY

Gym wall pads	1	ls	20,000.00	NIC			
Basketball backstops; swing up; electric operated	6	loc	10,000.00	NIC			
Gymnasium dividing net; electrically operated	1	ls	30,000.00	NIC			
Volleyball net and standards	1	ls	5,000.00	NIC			
Telescoping bleachers	1	ls	60,000.00	NIC			
Kitchen equipment	1	ls	400,000.00	400,000			
SUBTOTAL						400,000	

TOTAL - EQUIPMENT						\$400,000
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E20 FURNISHINGS

E2010 FIXED FURNISHINGS

123553 CASEWORK

OPTION 2 - State Standards



Brookline High School
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 Brookline, MA

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GFA 228,690

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - STATE STANDARDS: RENOVATION								
307	Counters, base cabinets, tall storage in classrooms and other rooms; full renovation	41,790	gsf	10.00	417,900			
308	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500			
309	Window blinds	36,657	sf	7.00	256,599			
310	SUBTOTAL					701,999		
311								
312	E2020 MOVABLE FURNISHINGS							
313	All movable furnishings to be provided and installed by owner							
314	SUBTOTAL						NIC	
315								
316	TOTAL - FURNISHINGS							\$701,999
317								
318								
319	F10 SPECIAL CONSTRUCTION							
320								
321	F10 SPECIAL CONSTRUCTION							
322	SUBTOTAL						-	
323								
324	TOTAL - SPECIAL CONSTRUCTION							
325								
326								
327	F20 SELECTIVE BUILDING DEMOLITION							
328								
329	F2010 BUILDING ELEMENTS DEMOLITION							
330	Remove exterior glazing	36,657	sf	6.00	219,942			
331	Remove roofing	37,000	sf	2.00	74,000			
332	Interior demolition; gut	39,150	gsf	8.00	313,200			
333	Interior demolition; partial	2,640	gsf	3.00	7,920			
334	Temporary enclosures/protection	41,790	sf	1.00	41,790			
335	SUBTOTAL					656,852		
336								
337	F2020 HAZARDOUS COMPONENTS ABATEMENT							
338	See summary							
339	SUBTOTAL							
340								
341	TOTAL - SELECTIVE BUILDING DEMOLITION							\$656,852
342								

OPTION 2 - State Standards



Brookline High School
Design Options
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Feasibility Estimate

GFA 242,280

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 2 - STATE STANDARDS: ADDITION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$1,130,045			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$986,380	\$2,116,425	\$8.74	3.2%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$490,987			
A2020	Basement Walls	\$252,046	\$743,033	\$3.07	1.1%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$7,446,603			
B1020	Roof Construction	\$2,181,710	\$9,628,313	\$39.74	14.6%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$3,935,541			
B2020	Windows	\$2,766,124			
B2030	Exterior Doors	\$73,680	\$6,775,345	\$27.96	10.3%
B30 ROOFING					
B3010	Roof Coverings	\$1,683,640			
B3020	Roof Openings	\$810,000	\$2,493,640	\$10.29	3.8%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$6,299,280			
C1020	Interior Doors	\$1,211,400			
C1030	Specialties/Millwork	\$1,879,854	\$9,390,534	\$38.76	14.2%
C20 STAIRCASES					
C2010	Stair Construction	\$376,000			
C2020	Stair Finishes	\$50,298	\$426,298	\$1.76	0.6%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$2,422,800			
C3020	Floor Finishes	\$3,246,552			
C3030	Ceiling Finishes	\$1,695,960	\$7,365,312	\$30.40	11.1%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$400,000	\$400,000	\$1.65	0.6%
D20 PLUMBING					
D20	Plumbing	\$3,171,444	\$3,171,444	\$13.09	4.8%

OPTION 2 - State Standards



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 242,280

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM	SUB-TOTAL	TOTAL	\$/SF	%
OPTION 2 - STATE STANDARDS: ADDITION				
D30 HVAC				
D30 HVAC	\$10,937,731	\$10,937,731	\$45.15	16.5%
D40 FIRE PROTECTION				
D40 Fire Protection	\$1,090,260	\$1,090,260	\$4.50	1.6%
D50 ELECTRICAL				
D5010 Complete System	\$8,804,028	\$8,804,028	\$36.34	13.3%
E10 EQUIPMENT				
E10 Equipment	\$45,000	\$45,000	\$0.19	0.1%
E20 FURNISHINGS				
E2010 Fixed Furnishings	\$2,601,661			
E2020 Movable Furnishings	NIC	\$2,601,661	\$10.74	3.9%
F10 SPECIAL CONSTRUCTION				
F10 Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS				
F2010 Building Elements Demolition	\$100,000			
F2020 Hazardous Components Abatement	\$0	\$100,000	\$0.41	0.2%
TOTAL DIRECT COST (Trade Costs)		\$66,089,024	\$272.78	100.0%

OPTION 2 - State Standards



Brookline High School
Design Options
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Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: ADDITION

GROSS FLOOR AREA CALCULATION

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Basement	17,820
First Floor	60,130
Second Floor	53,560
Third floor	58,710
Fourth floor	52,060

TOTAL GROSS FLOOR AREA (GFA)	242,280 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	1,642	sf	12.00	19,704
Re-bar	8,210	lbs.	1.32	10,837
Concrete material; 3,000 psi	84	cy	132.00	11,088
Placing concrete	84	cy	90.00	7,560

Foundation wall; 14" thick x 36" high

Formwork	4,926	sf	17.00	83,742
Re-bar	9,852	lbs.	1.32	13,005
Concrete material; 3,000 psi	117	cy	132.00	15,444
Placing concrete	117	cy	90.00	10,530

Grade Beam at interior; 2'-0" wide x 2'-0" deep

Formwork	1,000	sf	12.00	12,000
Re-bar	16,250	lbs.	1.32	21,450
Concrete material; 3,000 psi	41	cy	132.00	5,412
Placing concrete	41	cy	90.00	3,690

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	5,520	sf	16.00	88,320
Re-bar	64,800	lbs.	1.32	85,536
Concrete material; 3,000 psi	647	cy	132.00	85,404
Placing concrete	647	cy	90.00	58,230
Set anchor bolts grout plates	192	ea	165.00	31,680

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	5,168	sf	16.00	82,688
Re-bar	42,560	lbs.	1.32	56,179
Concrete material; 3,000 psi	447	cy	132.00	59,004
Placing concrete	447	cy	90.00	40,230
Set anchor bolts grout plates	304	ea	165.00	50,160

Piers/Pilasters; 22" x 22"

Formwork 18" x 18"	1,824	sf	18.00	32,832
Re-bar	6,000	lbs.	1.32	7,920
Concrete material; 3,000 psi	50	cy	132.00	6,600
Placing concrete	50	cy	150.00	7,500

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	2,463	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	2,463	sf	3.00	7,389
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OPTION 2 - State Standards



Brookline High School
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Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: ADDITION

56	312000	EARTHWORK					
57		<u>Continuous footings</u>					
58		Excavation	608	cy	25.00	15,200	
59		Remove off site	608	cy	20.00	12,160	
60		Backfill with imported material	407	cy	38.00	15,466	
61		<u>Spread footings</u>					
62		Excavation	2,420	cy	25.00	60,500	
63		Remove off site	2,420	cy	20.00	48,400	
64		Backfill with imported material	1,326	cy	38.00	50,388	
65		<u>Grade Beams</u>					
66		Excavation	185	cy	25.00	4,625	
67		Remove off site	185	cy	20.00	3,700	
68		Backfill with imported material	144	cy	38.00	5,472	
69		SUBTOTAL					1,130,045
70							
71	A1020	SPECIAL FOUNDATIONS					
72		SUBTOTAL					
73							
74	A1030	LOWEST FLOOR CONSTRUCTION					
75		<u>New Slab on grade, 5" thick</u>					
76		Gravel fill, 12"	2,227	cy	36.00	80,172	
77		Structural fill under basement of demolished wing	3,462	cy	32.00	110,784	
78		Rigid insulation	60,130	sf	2.25	135,293	
79		Vapor barrier	60,130	sf	0.75	45,098	
80		Compact existing sub-grade	60,130	sf	0.50	30,065	
81		Mesh reinforcing 15% lap	69,150	sf	0.80	55,320	
82		Concrete - 5" thick; 4,000 psi	982	cy	125.00	122,750	
83		Placing concrete	982	cy	45.00	44,190	
84		Finishing and curing concrete	60,130	sf	1.50	90,195	
85		Control joints - saw cut	60,130	sf	0.10	6,013	
86		<u>Miscellaneous</u>					
87		Foundations against existing building	566	lf	250.00	141,500	
88		New Elevator pit	2	ea	35,000.00	70,000	
89		New loading dock	1	ls	40,000.00	40,000	
90		Equipment pads	1	ls	15,000.00	15,000	
91		SUBTOTAL					986,380
92							
93		TOTAL - FOUNDATIONS					\$2,116,425
94							
95							
96	A20	BASEMENT CONSTRUCTION					
97							
98	A2010	BASEMENT EXCAVATION					
99		Excavation for basement	6,191	cy	12.00	74,292	
100		Export off site	6,191	cy	20.00	123,820	
101		Temporary for sheeting and shoring	5,325	sf	55.00	292,875	
102		SUBTOTAL					490,987
103							
104	A2020	BASEMENT WALLS					
105		<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>					

OPTION 2 - State Standards



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 - STATE STANDARDS: ADDITION							
106	Formwork	624	sf	12.00	7,488		
107	Re-bar	3,120	lbs.	1.32	4,118		
108	Concrete material; 3,000 psi	32	cy	132.00	4,224		
109	Placing concrete	32	cy	90.00	2,880		
110	<u>Basement wall; 14" thick</u>						
111	Formwork	9,360	sf	17.00	159,120		
112	Re-bar	18,720	lbs.	1.32	24,710		
113	Concrete material; 3,000 psi	223	cy	132.00	29,436		
114	Placing concrete	223	cy	90.00	20,070		
115	SUBTOTAL					252,046	

TOTAL - BASEMENT CONSTRUCTION	\$743,033
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B10 SUPERSTRUCTURE

121		14.80	lbs/sf		-		
122	B1010 FLOOR CONSTRUCTION	1,793	tns		-		
123	New Addition	182,150	sf				
124	<u>Floor Structure - Steel:</u>						
125	Steel beams and columns to new addition; 14.8#/SF	1,348	tns	3,500.00	4,718,000		
126	Premium for HSS	337	tns	300.00	101,100		
127	Shear studs	36,430	ea	2.50	91,075		
128	<u>Floor Structure</u>						
129	2" 18 Ga. Metal galvanized floor Deck	182,150	sf	3.75	683,063		
130	WWF reinforcement	209,473	sf	0.80	167,578		
131	Concrete Fill to metal deck; 6" Light Weight	4,250	cy	160.00	680,000		
132	Place and finish concrete	182,150	sf	2.00	364,300		
133	Rebar to decks	54,645	lbs	1.20	65,574		
134	Misc. angles	182,150	sf	0.50	91,075		
135	<u>Miscellaneous</u>						
136	Fire proofing to columns and beams	182,150	sf	2.25	409,838		
137	Intumescent paint	1	ls	50,000.00	50,000		
138	Fire stopping floors	1	ls	25,000.00	25,000		
139	SUBTOTAL					7,446,603	

141	B1020 ROOF CONSTRUCTION						
142	New Addition	60,130	sf				
143	<u>Roof Structure - Steel:</u>						
144	Steel beams and columns to new addition; 14.8#/SF	445	tns	3,500.00	1,557,500		
145	Premium for HSS	111	tns	300.00	33,300		
146	Exposed steel	1	ls	50,000.00	50,000		
147	<u>Roof Structure</u>						
148	Acoustic deck allowance	8,000	sf	7.00	56,000		
149	3" 20 Ga. galvanized Metal Roof Deck	52,130	sf	4.00	208,520		
150	<u>Miscellaneous</u>						
151	Concrete under RTU's	15,000	sf	8.00	120,000		
152	Fire proofing to columns, beams and deck	52,130	sf	3.00	156,390		
153	SUBTOTAL					2,181,710	

OPTION 2 - State Standards



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Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: ADDITION

TOTAL - SUPERSTRUCTURE						\$9,628,313
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OPTION 2 - State Standards



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - STATE STANDARDS: ADDITION								
208	B2030 EXTERIOR DOORS							
209	Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000			
210	HM doors, frames and hardware- Double	4	pr	2,000.00	8,000			
211	Backer rod & double sealant	240	lf	4.00	960			
212	Wood blocking at openings	240	lf	3.00	720			
213	SUBTOTAL					73,680		
214								
215	TOTAL - EXTERIOR CLOSURE						\$6,775,345	
216								
217								
218	B30 ROOFING							
219								
220	B3010 ROOF COVERINGS							
221	New roofing complete	60,130	sf	28.00	1,683,640			
222	SUBTOTAL					1,683,640		
223								
224	B3020 ROOF OPENINGS							
225	Skylights, allow for atrium skylight	6,000	sf	130.00	780,000			
226	Smoke hatch	5	loc	5,000.00	25,000			
227	Roof hatch	2	loc	2,500.00	5,000			
228	SUBTOTAL					810,000		
229								
230	TOTAL - ROOFING						\$2,493,640	
231								
232								
233	C10 INTERIOR CONSTRUCTION							
234								
235	C1010 PARTITIONS							
236	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	242,280	gsf	26.00	6,299,280			
237	SUBTOTAL					6,299,280		
238								
239	C1020 INTERIOR DOORS							
240	Interior doors, frames and hardware	242,280	gsf	5.00	1,211,400			
241	SUBTOTAL					1,211,400		
242								
243	C1030 SPECIALTIES / MILLWORK							
244	Toilet Partitions and accessories	242,280	gsf	0.80	193,824			
245	Backer panels in electrical closets	1	ls	1,000.00	1,000			
246	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	242,280	sf	1.00	242,280			
247	Room Signs	242,280	gsf	0.40	96,912			
248	Fire extinguisher cabinets	81	ea	350.00	28,350			
249	Lockers	242,280	gsf	1.60	387,648			
250	Janitors Work Shop Accessories	1	ls	1,500.00	1,500			
251	Janitors Closet Accessories	5	rms	300.00	1,500			
252	<i>Media</i>							
253	Reception desks	4	loc	25,000	100,000			
254	Railings to open to below areas	1	ls	100,000	100,000			
255	Library shelving at perimeters 7' Tall				F,F & E			
256	Library shelving at perimeters 3' Tall				F,F & E			
257	Display cases	242,280	gsf	0.25	60,570			
258	Miscellaneous metals throughout building	242,280	sf	1.50	363,420			

OPTION 2 - State Standards



Brookline High School
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GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: ADDITION

259	Miscellaneous sealants throughout building	242,280	sf	1.25	302,850		
260	SUBTOTAL					1,879,854	

TOTAL - INTERIOR CONSTRUCTION						\$9,390,534	
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

268	Metal pan stair; egress stair	8	flt	25,000.00	200,000		
269	Main staircase	1	flt	100,000.00	100,000		
270	Commons tiered seating	200	lf	250.00	50,000		
271	Commons steps	2	loc	5,000.00	10,000		
272	Concrete fill to stairs	8	flt	2,000.00	16,000		
273	SUBTOTAL					376,000	

C2020 STAIR FINISHES

276	High performance coating to stairs including all railings etc.	8	flt	3,000.00	24,000		
277	Rubber tile at stairs - landings	800	sf	10.00	8,000		
278	Rubber tile at stairs - treads & risers	960	lft	19.06	18,298		
279	SUBTOTAL					50,298	

TOTAL - STAIRCASES						\$426,298	
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C30 INTERIOR FINISHES

C3010 WALL FINISHES

287	Wall finishes	242,280	sf	10.00	2,422,800		
288	SUBTOTAL					2,422,800	

C3020 FLOOR FINISHES

291	Floor finishes	242,280	sf	11.00	2,665,080		
292	Moisture mitigation	193,824	sf	3.00	581,472		
293	SUBTOTAL					3,246,552	

C3030 CEILING FINISHES

296	Ceiling finishes	242,280	sf	7.00	1,695,960		
297	SUBTOTAL					1,695,960	

TOTAL - INTERIOR FINISHES						\$7,365,312	
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D10 CONVEYING SYSTEMS

D1010 ELEVATOR

305	New elevator; 5 stop; oversize; 5,000 lbs	2	ea	200,000.00	400,000		
306	SUBTOTAL					400,000	

TOTAL - CONVEYING SYSTEMS						\$400,000	
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D20 PLUMBING

D20 PLUMBING, GENERALLY
Equipment

OPTION 2 - State Standards



Brookline High School
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 Brookline, MA

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Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - STATE STANDARDS: ADDITION								
315	Plumbing equipment	242,280	sf	2.00	484,560			
316	<u>Plumbing Fixtures & Specialties</u>							
317	Miscellaneous plumbing fixtures	242,280	sf	1.00	242,280			
318	<u>Domestic Water Type L Copper Pipe</u>							
319	Domestic water pipe with fittings & hangers	242,280	sf	2.50	605,700			
320	Domestic water pipe insulation	242,280	sf	1.50	363,420			
321	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
322	Sanitary waste pipe with fittings & hangers	242,280	sf	2.35	569,358			
323	Kitchen waste pipe with fittings & hangers	242,280	sf	0.30	72,684			
324	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
325	Acid waste & vent pipe with fittings & hangers	242,280	sf	0.75	181,710			
326	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
327	Storm water pipe with fittings & hangers	242,280	sf	1.25	302,850			
328	Pipe insulation on horizontal runs	242,280	sf	0.20	48,456			
329	<u>Gas And Fuel Distribution Pipe</u>							
330	Gas pipe with fittings & hangers	242,280	sf	0.75	181,710			
331	<u>Miscellaneous</u>							
332	Coordination & BIM	242,280	sf	0.25	60,570			
333	Coring, sleeves & firestopping	242,280	sf	0.03	7,268			
334	Commissioning support	242,280	sf	0.08	19,382			
335	Fees & permits	242,280	sf	0.13	31,496			
336	SUBTOTAL					3,171,444		
337								
338	TOTAL - PLUMBING							\$3,171,444
339								
340								
341	D30 HVAC							
342								
343	D30 HVAC, GENERALLY							
344	<u>HVAC Equipment</u>							
345	HVAC equipment	242,280	sf	1.00	242,280			
346	<u>Pumps</u>							
347	Pumps	242,280	sf	0.28	67,838			
348	<u>Air distribution</u>							
349	RTU's Gas fired heating with DX cooling	460,332	cfm	9.25	4,258,071			
350	Air distribution equipment	242,280	sf	6.00	1,453,680			
351	Exhaust fans	242,280	sf	0.50	121,140			
352	<u>Sheet metal & Accessories</u>							
353	Sheet metal & accessories	242,280	sf	9.00	2,180,520			
354	<u>Piping</u>							
355	<u>Hot Water Piping</u>							
356	Hot water piping with fittings & hangers	242,280	sf	2.00	484,560			
357	<u>Chilled Water Piping</u>							
358	Chilled water piping with fittings & hangers	242,280	sf	0.55	133,254			
359	<u>Refrigerant Piping</u>							
360	Refrigerant piping with fittings & hangers	242,280	sf	0.10	24,228			
361	<u>Condensate Drain Piping</u>							
362	Condensate drain piping with fittings & hangers	242,280	sf	0.15	36,342			
363	<u>Piping Insulation</u>							

OPTION 2 - State Standards



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 - STATE STANDARDS: ADDITION							
364	Piping insulation	242,280	sf	1.50	363,420		
365	<u>Automatic Temperature Controls</u>						
366	Automatic temperature controls DDC	242,280	sf	4.50	1,090,260		
367	Balancing						
368	System testing & balancing	242,280	sf	0.60	145,368		
369	<u>Miscellaneous</u>						
370	Commissioning support	242,280	sf	0.42	101,758		
371	Coring, sleeves & fire stopping	242,280	sf	0.17	41,188		
372	Rigging & equipment rental	242,280	sf	0.42	101,758		
373	Vibration & seismic restraints	242,280	sf	0.38	92,066		
374	SUBTOTAL					10,937,731	
TOTAL - HVAC							\$10,937,731
D40 FIRE PROTECTION							
D40 FIRE PROTECTION, GENERALLY							
382	Fire protection system	242,280	gsf	4.50	1,090,260		
383	SUBTOTAL					1,090,260	
TOTAL - FIRE PROTECTION							\$1,090,260
D50 ELECTRICAL							
D5010 SERVICE & DISTRIBUTION							
Gear & Distribution							
393	Normal power distribution switchgear & feeders based on 4000A 480/277V	242,280	sf	5.00	1,211,400		
394	<u>Emergency power</u>						
395	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	242,280	sf	4.00	969,120		
396	<u>Equipment Wiring</u>						
397	Equipment wiring	242,280	sf	2.00	484,560		
398	SUBTOTAL					2,665,080	
D5020 LIGHTING & POWER							
Lighting & Branch Power							
403	Lighting fixtures (LED as BOD) with installation labor	242,280	sf	5.00	1,211,400		
404	<u>Lighting control system</u>						
405	Lighting controls including daylight harvesting system, allow	242,280	sf	1.15	278,622		
406	<u>Branch devices</u>						
407	Branch devices	242,280	sf	0.50	121,140		
408	<u>Lighting and branch circuitry</u>						
409	Lighting & branch circuitry	242,280	sf	5.50	1,332,540		
410	SUBTOTAL					2,943,702	
D5030 COMMUNICATION & SECURITY SYSTEMS							
Fire Alarm							
415	Fire alarm system	242,280	sf	2.00	484,560		

OPTION 2 - State Standards



Brookline High School
Design Options
 Brookline, MA

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Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: ADDITION

416	<u>Bi-Directional System</u>							
417	BDA system	242,280	sf	0.50	121,140			
418	<u>Security System</u>							
419	Security System	242,280	sf	2.50	605,700			
420	<u>Telephone/Data/CATV</u>							
421	Network switches, PBX, IP, VP, CCTV (By owner)				By Owner			
422	Telecommunications rough in	242,280	sf	1.50	363,420			
423	Telecommunications devices and cabling	242,280	sf	2.00	484,560			
424	<u>Public Address/Clock System</u>							
425	PA/Master Clock system	242,280	sf	1.25	302,850			
426	<u>Audio Visual (rough-in and power only)</u>							
427	AV equipment				By Owner			
428	Rough-In conduit and backboxes only	242,280	sf	0.50	121,140			
429	<u>Auditorium</u>							
430	Rigging system equipment & installation				See equipment			
431	Power to rigging equipment	1	ls	15,000.00	ETR			
432	Stage dimming system with performance fixture package, allow	1	ls	275,000.00	ETR			
433	Installation, rough-in & 120V power to dimming equipment	1	ls	75,000.00	ETR			
434	Performance audio visual equipment, installation & LV cabling, allow	1	ls	150,000.00	ETR			
435	Performance audio visual rough-in and power	1	ls	65,000.00	ETR			
436								
437	Allowance for Black Box Theater	1	ls	150,000.00	150,000			
438								
439	Allowance for White Box Theater	1	ls	150,000.00	150,000			
440	<u>Gymnasium</u>							
441	Sound system	1	ls	15,000.00	NIC			
442	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	NIC			
443	Misc. gym equipment feed and connections	1	ls	25,000.00	NIC			
444	SUBTOTAL					2,783,370		
445								
446	D5040 OTHER ELECTRICAL SYSTEMS							
447	<u>Miscellaneous</u>							
448	Temp power and lights	242,280	sf	0.45	109,026			
449	Lightning Protection System, UL Master label	242,280	sf	0.45	109,026			
450	Fees & Permits	242,280	ls	0.80	193,824			
451	SUBTOTAL					411,876		
452								
453	TOTAL - ELECTRICAL						\$8,804,028	
454								
455								
456	E10 EQUIPMENT							
457								
458	E10 EQUIPMENT, GENERALLY							
459	Kiln	2	ea	5,000.00	10,000			
460	Food Service equipment				In Renovation			
461	Loading dock equipment	1	ls	20,000.00	20,000			
462	Theatrical Equipment Stage curtains, rigging and controls	1	ls	250,000.00	ETR			
463	Electrically operated projection screens	1	loc	15,000.00	15,000			

OPTION 2 - State Standards



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 242,280

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - STATE STANDARDS: ADDITION

464 SUBTOTAL 45,000

465
466 **TOTAL - EQUIPMENT \$45,000**

467
468
469 **E20 FURNISHINGS**

470
471 **E2010 FIXED FURNISHINGS**
472 Entry mats & frames - recessed with carpet/rubber strips 500 sf 55.00 27,500
473 Window blinds 21,623 sf 7.00 151,361
474 Theatrical seating 1 ls 180,000.00 ETR
475 Counters, base cabinets, tall storage in classrooms and other rooms 242,280 gsf 10.00 2,422,800
476 SUBTOTAL 2,601,661

477
478 **E2020 MOVABLE FURNISHINGS**
479 All movable furnishings to be provided and installed by owner
480 SUBTOTAL NIC

481 **TOTAL - FURNISHINGS \$2,601,661**

482
483
484 **F10 SPECIAL CONSTRUCTION**

485
486
487 **F10 SPECIAL CONSTRUCTION**
488 No items in this section
489 SUBTOTAL

490
491 **TOTAL - SPECIAL CONSTRUCTION**

492
493
494 **F20 SELECTIVE BUILDING DEMOLITION**

495
496 **F2010 BUILDING ELEMENTS DEMOLITION**
497 Connections to existing building 1 ls 100,000.00 100,000
498 SUBTOTAL 100,000

499
500 **F2020 HAZARDOUS COMPONENTS ABATEMENT**
501 See main summary for HazMat allowance See Summary
502 SUBTOTAL

503
504 **TOTAL - SELECTIVE BUILDING DEMOLITION \$100,000**

OPTION 3 - BHS Education Plan Summary



Brookline High School

Design Options

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Brookline, MA

Feasibility Estimate

OPTION 3 - BHS EDUCATION PLAN: RENOVATION + ADDITION

	Sep-18		
RENOVATIONS TO EXISTING SCHOOL	181,050	\$186.94	\$33,846,278
ADDITIONS	298,130	\$272.92	\$81,365,500
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)	113,980	\$10.00	\$1,139,800
UNDERGROUND PARKING			\$9,957,989
REMOVE HAZARDOUS MATERIALS			\$4,720,480
SITEWORK - ALLOWANCE 8% of BUILDING			\$9,216,942
SUB-TOTAL	479,180	\$292.68	\$140,246,989
ESCALATION TO MID-POINT - (assumed 3% PA)	9%		\$12,622,229
DESIGN AND PRICING CONTINGENCY	15%		\$22,930,383
SUB-TOTAL	479,180	\$366.88	\$175,799,601
GENERAL CONDITIONS	6.00%		\$10,547,976
GENERAL REQUIREMENTS	4.00%		\$7,031,984
BONDS	1.15%		\$2,021,695
INSURANCE	1.25%		\$2,197,495
PERMIT			Waived
CM FEE	2.50%		\$4,939,969
CM/GMP CONTINGENCY	3%		\$5,273,988
PHASING PREMIUM	5.0%		\$8,789,980
TOTAL OF ALL CONSTRUCTION	479,180	\$452.03	\$216,602,688

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 3 - BHS EDUCATION PLAN: RENOVATION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$358,100			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$169,050	\$527,150	\$2.91	1.6%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$510,730			
B1020	Roof Construction	\$125,000	\$635,730	\$3.51	1.9%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$2,123,420			
B2020	Windows/Curtainwall	\$1,837,605			
B2030	Exterior Doors	\$29,436	\$3,990,461	\$22.04	11.8%
B30 ROOFING					
B3010	Roof Coverings	\$1,461,600			
B3020	Roof Openings	\$0	\$1,461,600	\$8.07	4.3%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$1,977,980			
C1020	Interior Doors	\$328,650			
C1030	Specialties/Millwork	\$1,004,828	\$3,311,458	\$18.29	9.8%
C20 STAIRCASES					
C2010	Stair Construction	\$72,000			
C2020	Stair Finishes	\$48,000	\$120,000	\$0.66	0.4%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$766,070			
C3020	Floor Finishes	\$1,991,550			
C3030	Ceiling Finishes	\$1,176,825	\$3,934,445	\$21.73	11.6%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$215,000	\$215,000	\$1.19	0.6%
D20 PLUMBING					
D20	Plumbing	\$2,234,160	\$2,234,160	\$12.34	6.6%
D30 HVAC					
D30	HVAC	\$7,737,129	\$7,737,129	\$42.73	22.9%
D40 FIRE PROTECTION					
D40	Fire Protection	\$914,725	\$914,725	\$5.05	2.7%
D50 ELECTRICAL					
D5010	Electrical Systems	\$6,444,857	\$6,444,857	\$35.60	19.0%
E10 EQUIPMENT					
E10	Equipment	\$400,000	\$400,000	\$2.21	1.2%

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 3 - BHS EDUCATION PLAN: RENOVATION					
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$707,307			
E2020	Movable Furnishings	NIC	\$707,307	\$3.91	2.1%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 SELECTIVE BUILDING DEMOLITION					
F2010	Building Elements Demolition	\$1,212,256			
F2020	Hazardous Components Abatement	\$0	\$1,212,256	\$6.70	3.6%
TOTAL DIRECT COST (Trade Costs)			\$33,846,278	\$186.94	100.0%

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: RENOVATION

GROSS FLOOR AREA CALCULATION

CODE RENOVATION	125,320
FULL RENOVATION	55,730

TOTAL GROSS FLOOR AREA (GFA)	181,050 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Repair cracks and resurface exposed concrete foundations	1	ls	50,000	50,000	
Allowance for new footings at bracing to full renovation	30,810	sf	10.00	308,100	
SUBTOTAL					358,100

A1020 SPECIAL FOUNDATIONS

No work in this section
SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

Cutting and patching; generally at full renovation slab	30,810	sf	5.00	154,050	
Equipment pads	1	ls	15,000.00	15,000	
SUBTOTAL					169,050

TOTAL - FOUNDATIONS	\$527,150
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Allowance for bracing steel at full renovation; 2lbs per SF	56	tns	5,000.00	280,000	
Fireproofing to new steel	1	ls	150,000.00	150,000	
Openings in structure for MEP systems	55,730	gsf	1.00	55,730	
Fire stopping floors	1	ls	25,000.00	25,000	
SUBTOTAL					510,730

B1020 ROOF CONSTRUCTION

Roof Structure - Steel:

New steel for RTU's	1	ls	50,000.00	50,000	
Miscellaneous steel upgrades to existing roof structure	1	ls	75,000.00	75,000	
SUBTOTAL					125,000

TOTAL - SUPERSTRUCTURE	\$635,730
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Repair, repaint and clean all exterior walls	40,835	sf			
	40,835	sf	40.00	1,633,400	

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - BHS EDUCATION PLAN: RENOVATION								
50	Insulate exterior walls to meet code; new furred walls at perimeter	40,835	sf	12.00	490,020			
51	SUBTOTAL					2,123,420		
52								
53	B2020 WINDOWS/CURTAINWALL							
54	Replace existing windows/curtainwall etc.	17,501	sf	105.00	1,837,605			
55	SUBTOTAL					1,837,605		
56								
57	B2030 EXTERIOR DOORS							
58	Replace exterior door, double	2	pr	8,500.00	17,000			
59	Replace exterior door, single	5	ea	2,000.00	10,000			
60	Backer rod & double sealant	203	lf	9.00	1,827			
61	Wood blocking at openings	203	lf	3.00	609			
62	SUBTOTAL					29,436		
63								
64	TOTAL - EXTERIOR CLOSURE						\$3,990,461	
65								
66								
67	B30 ROOFING							
68								
69	B3010 ROOF COVERINGS							
70	Replace existing roofing systems	52,200	sf	28.00	1,461,600			
71	SUBTOTAL					1,461,600		
72								
73	B3020 ROOF OPENINGS							
74	No work in this section							
75	SUBTOTAL					-		
76								
77	TOTAL - ROOFING						\$1,461,600	
78								
79								
80	C10 INTERIOR CONSTRUCTION							
81								
82	C1010 PARTITIONS							
83	Allowance to modify existing walls at code renovation	125,320	gsf	6.00	751,920			
84	Replace walls at full renovation	55,730	gsf	22.00	1,226,060			
85	SUBTOTAL					1,977,980		
86								
87	C1020 INTERIOR DOORS							
88	Adjust openings to meet code requirements	1	ls	50,000.00	50,000			
89	Remove and replace doors at full renovation	55,730	gsf	5.00	278,650			
90	SUBTOTAL					328,650		
91								
92	C1030 SPECIALTIES / MILLWORK							
93	Toilet Partitions and accessories	181,050	gsf	0.80	144,840			
94	Lockers, full height	181,050	gsf	1.50	271,575			
95								
96	<i>055000 MISCELLANEOUS METALS</i>							
97	Miscellaneous metals throughout building	181,050	sf	1.00	181,050			
98								
99	<i>061000 ROUGH CARPENTRY</i>							
100	Rough blocking	181,050	sf	0.50	90,525			
101								

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: RENOVATION

102	070001 WATERPROOFING, DAMPPROOFING AND CAULKING						
103	Miscellaneous sealants throughout building	181,050	sf	1.50	271,575		
104							
105	101400 SIGNAGE						
106	Code compliant signage	181,050	sf	0.25	45,263		
107							
108	SUBTOTAL					1,004,828	

TOTAL - INTERIOR CONSTRUCTION						\$3,311,458
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

116	New handrails and guardrails @ stairs; code upgrades	12	flt	6,000.00	72,000		
117							
118	SUBTOTAL					72,000	

C2020 STAIR FINISHES

120	Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips	12	flt	4,000.00	48,000		
121							
122	SUBTOTAL					48,000	

TOTAL - STAIRCASES						\$120,000
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C30 INTERIOR FINISHES

C3010 WALL FINISHES

129	Painting	181,050	gsf	3.00	543,150		
130	Miscellaneous walls finishes to full renovated areas	55,730	gsf	4.00	222,920		
131							
132	SUBTOTAL					766,070	

C3020 FLOOR FINISHES

134	New floor finishes throughout	181,050	gsf	11.00	1,991,550		
135							
136	SUBTOTAL					1,991,550	

C3030 CEILING FINISHES

138	Replace existing ceilings throughout	181,050	gsf	6.50	1,176,825		
139							
140	SUBTOTAL					1,176,825	

TOTAL - INTERIOR FINISHES						\$3,934,445
----------------------------------	--	--	--	--	--	--------------------

D10 CONVEYING SYSTEMS

146	Remove existing elevator and install new elevator	1	ls	180,000.00	180,000		
147	New lift	1	stp	35,000.00	35,000		
148							
149	SUBTOTAL					215,000	

TOTAL - CONVEYING SYSTEMS						\$215,000
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D20 PLUMBING

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: RENOVATION

155	D20 PLUMBING, GENERALLY							
156	<u>Equipment</u>							
157	Plumbing equipment	181,050	sf	2.00	362,100			
158	<u>Plumbing Fixtures & Specialties</u>							
159	Miscellaneous plumbing fixtures	181,050	sf	1.00	181,050			
160	<u>Domestic Water Type L Copper Pipe</u>							
161	Domestic water pipe with fittings & hangers	181,050	sf	2.00	362,100			
162	Domestic water pipe insulation	181,050	sf	1.50	271,575			
163	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
164	Sanitary waste pipe with fittings & hangers	181,050	sf	2.35	425,468			
165	Kitchen waste pipe with fittings & hangers	181,050	sf	0.30	54,315			
166	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
167	Acid waste & vent pipe with fittings & hangers	181,050	sf	0.75	135,788			
168	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
169	Storm water pipe with fittings & hangers	181,050	sf	1.25	226,313			
170	Pipe insulation on horizontal runs	181,050	sf	0.20	36,210			
171	<u>Gas And Fuel Distribution Pipe</u>							
172	Gas pipe with fittings & hangers	181,050	sf	0.75	135,788			
173	<u>Miscellaneous</u>							
174	Coring, sleeves & firestopping	181,050	sf	0.03	5,432			
175	Commissioning support	181,050	sf	0.08	14,484			
176	Fees & permits	181,050	sf	0.13	23,537			
177	SUBTOTAL					2,234,160		
178								
179	TOTAL - PLUMBING						\$2,234,160	

180

181

182

183

D30 HVAC

184	D30 HVAC, GENERALLY						
185	<u>HVAC Equipment</u>						
186	HVAC equipment	181,050	sf	1.00	181,050		
187	<u>Pumps</u>						
188	Pumps	181,050	sf	0.28	50,694		
189	<u>Air distribution</u>						
190	RTU's Gas fired heating with DX cooling	343,995	cfm	9.25	3,181,954		
191	MAU unit gas fired heating	5,000	cfm	3.25	16,250		
192	Air distribution equipment	181,050	sf	3.00	543,150		
193	Exhaust fans	181,050	sf	0.50	90,525		
194	<u>Sheet metal & Accessories</u>						
195	Sheet metal & accessories	181,050	sf	9.00	1,629,450		
196	<u>Piping</u>						
197	<u>Hot Water Piping</u>						
198	Hot water piping with fittings & hangers	181,050	sf	2.00	362,100		
199	<u>Chilled Water Piping</u>						
200	Chilled water piping with fittings & hangers	181,050	sf	0.55	99,578		
201	<u>Refrigerant Piping</u>						
202	Refrigerant piping with fittings & hangers	181,050	sf	0.10	18,105		
203	<u>Condensate Drain Piping</u>						

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 181,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - BHS EDUCATION PLAN: RENOVATION								
204	Condensate drain piping with fittings & hangers	181,050	sf	0.15	27,158			
205	<u>Piping Insulation</u>							
206	Piping insulation	181,050	sf	1.50	271,575			
207	<u>Automatic Temperature Controls</u>							
208	Automatic temperature controls DDC	181,050	sf	4.50	814,725			
209	Balancing							
210	System testing & balancing	181,050	sf	0.60	108,630			
211	<u>Miscellaneous</u>							
212	Demolition & make safe	181,050	sf	0.50	90,525			
213	Commissioning support	181,050	sf	0.42	76,041			
214	Coring, sleeves & fire stopping	181,050	sf	0.17	30,779			
215	Rigging & equipment rental	181,050	sf	0.42	76,041			
216	Vibration & seismic restraints	181,050	sf	0.38	68,799			
217	SUBTOTAL					7,737,129		
218								
219	TOTAL - HVAC							\$7,737,129

D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

224	Fire pump	1	ls	100,000.00	100,000		
225	New fire protection system	181,050	sf	4.50	814,725		
226	SUBTOTAL					914,725	

TOTAL - FIRE PROTECTION \$914,725

D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

Normal power distribution switchgear & feeders based on 4000A 480/277V

Emergency power
Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank

UPS system
24KW UPS system and switchgear

Photovoltaic
Allowance for PV provisions

Equipment Wiring
Equipment wiring

SUBTOTAL 2,051,550

D5020 LIGHTING & POWER

Lighting & Branch Power
Lighting fixtures (LED as BOD) with installation labor

Lighting control system
Lighting controls including daylight harvesting system, allow

Branch devices
Branch devices

OPTION 3 - BHS Education Plan



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GFA 181,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - BHS EDUCATION PLAN: RENOVATION								
254	<u>Lighting and branch circuitry</u>							
255	Lighting & branch circuitry	181,050	sf	5.50	995,775			
256	SUBTOTAL					2,199,758		
257								
258	D5030 COMMUNICATION & SECURITY SYSTEMS							
259	<u>Fire Alarm</u>							
260	Fire alarm system	181,050	sf	2.00	362,100			
261	<u>Bi-Directional System</u>							
262	BDA system	181,050	sf	0.50	90,525			
263	<u>Security System</u>							
264	Security System	181,050	sf	2.50	452,625			
265	<u>Telephone/Data/CATV</u>							
266	Network switches, PBX, IP, VP, CCTV (By owner)				By Owner			
267	Telecommunications rough in	181,050	sf	1.50	271,575			
268	Telecommunications devices and cabling	181,050	sf	2.00	362,100			
269	<u>Public Address/Clock System</u>							
270	PA/Master Clock system	181,050	sf	1.25	226,313			
271	<u>Audio Visual (rough-in and power only)</u>							
272	AV equipment				By Owner			
273	Rough-In conduit and backboxes only	181,050	sf	0.50	90,525			
274	<u>Gymnasium</u>							
275	Sound system	1	ls	15,000.00	NIC			
276	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	NIC			
277	Misc. gym equipment feed and connections	1	ls	25,000.00	NIC			
278	SUBTOTAL					1,855,763		
279								
280	D5040 OTHER ELECTRICAL SYSTEMS							
281	<u>Miscellaneous</u>							
282	Demolition & make safe	1	ls	15,000.00	15,000			
283	Temp power and lights	181,050	sf	0.45	81,473			
284	Seismic restraints	1	ls	15,000.00	15,000			
285	Lightning Protection System, UL Master label	181,050	sf	0.45	81,473			
286	Fees & Permits	181,050	ls	0.80	144,840			
287	SUBTOTAL					337,786		
288								
289	TOTAL - ELECTRICAL						\$6,444,857	
290								
291								
292	E10 EQUIPMENT							
293								
294	E10 EQUIPMENT, GENERALLY							
295	Gym wall pads	1	ls	20,000.00	NIC			
296	Basketball backstops; swing up; electric operated	6	loc	10,000.00	NIC			
297	Gymnasium dividing net; electrically operated	1	ls	30,000.00	NIC			
298	Volleyball net and standards	1	ls	5,000.00	NIC			
299	Telescoping bleachers	1	ls	60,000.00	NIC			
300	Kitchen equipment	1	ls	400,000.00	400,000			
301	SUBTOTAL					400,000		
302								
303	TOTAL - EQUIPMENT						\$400,000	
304								
305								
306	E20 FURNISHINGS							

OPTION 3 - BHS Education Plan



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Feasibility Estimate

GFA 181,050

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: RENOVATION

307

308

E2010 FIXED FURNISHINGS

309

123553 CASEWORK

310

Counters, base cabinets, tall storage in classrooms and other rooms; full renovation **55,730** gsf 10.00 557,300

311

Entry mats & frames - recessed with carpet/rubber strips **500** sf 55.00 27,500

312

Window blinds **17,501** sf 7.00 122,507

313

SUBTOTAL 707,307

314

315

E2020 MOVABLE FURNISHINGS

316

All movable furnishings to be provided and installed by owner

317

SUBTOTAL NIC

318

TOTAL - FURNISHINGS						\$707,307
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320

321

F10 SPECIAL CONSTRUCTION

322

F10 SPECIAL CONSTRUCTION

323

SUBTOTAL -

324

TOTAL - SPECIAL CONSTRUCTION						
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327

328

F20 SELECTIVE BUILDING DEMOLITION
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330

F2010 BUILDING ELEMENTS DEMOLITION

331

Remove exterior glazing **17,501** sf 6.00 105,006

332

Remove roofing **52,200** sf 2.00 104,400

333

Interior demolition; gut **55,730** gsf 8.00 445,840

334

Interior demolition; partial **125,320** gsf 3.00 375,960

335

Temporary enclosures/protection **181,050** sf 1.00 181,050

336

SUBTOTAL 1,212,256

337

F2020 HAZARDOUS COMPONENTS ABATEMENT

338

See summary

339

SUBTOTAL

340

TOTAL - SELECTIVE BUILDING DEMOLITION						\$1,212,256
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OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 298,130

<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

A10 FOUNDATIONS

A1010	Standard Foundations	\$999,517		
A1020	Special Foundations	\$0		
A1030	Lowest Floor Construction	\$1,199,550	\$2,199,067	\$7.38 2.7%

A20 BASEMENT CONSTRUCTION

A2010	Basement Excavation	\$0		
A2020	Basement Walls	\$0	\$0	\$0.00 0.0%

B10 SUPERSTRUCTURE

B1010	Upper Floor Construction	\$8,956,209		
B1020	Roof Construction	\$2,801,490	\$11,757,699	\$39.44 14.5%

B20 EXTERIOR CLOSURE

B2010	Exterior Walls	\$5,098,070		
B2020	Windows	\$3,581,128		
B2030	Exterior Doors	\$73,680	\$8,752,878	\$29.36 10.8%

B30 ROOFING

B3010	Roof Coverings	\$2,588,360		
B3020	Roof Openings	\$810,000	\$3,398,360	\$11.40 4.2%

C10 INTERIOR CONSTRUCTION

C1010	Partitions	\$7,751,380		
C1020	Interior Doors	\$1,490,650		
C1030	Specialties/Millwork	\$2,265,935	\$11,507,965	\$38.60 14.1%

C20 STAIRCASES

C2010	Stair Construction	\$376,000		
C2020	Stair Finishes	\$50,298	\$426,298	\$1.43 0.5%

C30 INTERIOR FINISHES

C3010	Wall Finishes	\$2,981,300		
C3020	Floor Finishes	\$3,994,942		
C3030	Ceiling Finishes	\$2,086,910	\$9,063,152	\$30.40 11.1%

D10 CONVEYING SYSTEMS

D1010	Elevator	\$400,000	\$400,000	\$1.34 0.5%
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D20 PLUMBING

D20	Plumbing	\$3,902,524	\$3,902,524	\$13.09 4.8%
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D30 HVAC

D30	HVAC	\$13,475,330	\$13,475,330	\$45.20 16.6%
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OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 298,130

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 3 - BHS EDUCATION PLAN: ADDITION					
D40 FIRE PROTECTION					
D40	Fire Protection	\$1,341,585	\$1,341,585	\$4.50	1.6%
D50 ELECTRICAL					
D5010	Complete System	\$11,359,365	\$11,359,365	\$38.10	14.0%
E10 EQUIPMENT					
E10	Equipment	\$295,000	\$295,000	\$0.99	0.4%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$3,386,277			
E2020	Movable Furnishings	NIC	\$3,386,277	\$11.36	4.2%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$100,000			
F2020	Hazardous Components Abatement	\$0	\$100,000	\$0.34	0.1%
TOTAL DIRECT COST (Trade Costs)			\$81,365,500	\$272.92	100.0%

OPTION 3 - BHS Education Plan



Brookline High School
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Brookline, MA

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Feasibility Estimate

GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

GROSS FLOOR AREA CALCULATION

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First Floor	73,850
Second Floor	31,310
Third floor	78,670
Fourth floor	68,520
Fifth floor	45,780

TOTAL GROSS FLOOR AREA (GFA)	298,130 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	2,234	sf	12.00	26,808
Re-bar	11,170	lbs.	1.32	14,744
Concrete material; 3,000 psi	114	cy	132.00	15,048
Placing concrete	114	cy	90.00	10,260

Foundation wall; 14" thick x 36" high

Formwork	6,702	sf	17.00	113,934
Re-bar	13,404	lbs.	1.32	17,693
Concrete material; 3,000 psi	160	cy	132.00	21,120
Placing concrete	160	cy	90.00	14,400

Grade Beam at interior; 2'-0" wide x 2'-0" deep

Formwork	1,000	sf	12.00	12,000
Re-bar	16,250	lbs.	1.32	21,450
Concrete material; 3,000 psi	41	cy	132.00	5,412
Placing concrete	41	cy	90.00	3,690

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	5,175	sf	16.00	82,800
Re-bar	60,750	lbs.	1.32	80,190
Concrete material; 3,000 psi	606	cy	132.00	79,992
Placing concrete	606	cy	90.00	54,540
Set anchor bolts grout plates	180	ea	165.00	29,700

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	3,604	sf	16.00	57,664
Re-bar	29,680	lbs.	1.32	39,178
Concrete material; 3,000 psi	312	cy	132.00	41,184
Placing concrete	312	cy	90.00	28,080
Set anchor bolts grout plates	212	ea	165.00	34,980

Piers/Pilasters; 22" x 22"

Formwork 18" x 18"	1,272	sf	18.00	22,896
Re-bar	4,200	lbs	1.32	5,544
Concrete material; 3,000 psi	35	cy	132.00	4,620
Placing concrete	35	cy	150.00	5,250

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	3,351	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	3,351	sf	3.00	10,053
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OPTION 3 - BHS Education Plan



Brookline High School
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Brookline, MA

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Feasibility Estimate

GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

56	312000	EARTHWORK					
57		<u>Continuous footings</u>					
58							
		Excavation	827	cy	25.00	20,675	
59		Remove off site	827	cy	20.00	16,540	
60		Backfill with imported material	553	cy	38.00	21,014	
61		<u>Spread footings</u>					
62		Excavation	1,315	cy	25.00	32,875	
63		Remove off site	1,315	cy	20.00	26,300	
64		Backfill with imported material	397	cy	38.00	15,086	
65		<u>Grade Beams</u>					
66		Excavation	185	cy	25.00	4,625	
67		Remove off site	185	cy	20.00	3,700	
68		Backfill with imported material	144	cy	38.00	5,472	
69		SUBTOTAL				999,517	
70							
71	A1020	SPECIAL FOUNDATIONS					
72		SUBTOTAL					
73							
74	A1030	LOWEST FLOOR CONSTRUCTION					
75		<u>New Slab on grade, 5" thick</u>					
76		Gravel fill, 12"	2,735	cy	36.00	98,460	
77		Structural fill under basement of demolished wing	7,156	cy	32.00	228,992	
78		Rigid insulation	73,850	sf	2.25	166,163	
79		Vapor barrier	73,850	sf	0.75	55,388	
80		Compact existing sub-grade	73,850	sf	0.50	36,925	
81		Mesh reinforcing 15% lap	84,928	sf	0.80	67,942	
82		Concrete - 5" thick; 4,000 psi	1,206	cy	125.00	150,750	
83		Placing concrete	1,206	cy	45.00	54,270	
84		Finishing and curing concrete	73,850	sf	1.50	110,775	
85		Control joints - saw cut	73,850	sf	0.10	7,385	
86		<u>Miscellaneous</u>					
87		Foundations against existing building	390	lf	250.00	97,500	
88		New Elevator pit	2	ea	35,000.00	70,000	
89		New loading dock	1	ls	40,000.00	40,000	
90		Equipment pads	1	ls	15,000.00	15,000	
91		SUBTOTAL				1,199,550	
92							
93		TOTAL - FOUNDATIONS					\$2,199,067
94							
95							
96	A20	BASEMENT CONSTRUCTION					
97							
98	A2010	BASEMENT EXCAVATION					
99		No Work in this section					
100		SUBTOTAL				-	
101							
102	A2020	BASEMENT WALLS					
103		No Work in this section					
104		SUBTOTAL				-	
105							

OPTION 3 - BHS Education Plan



Brookline High School
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GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

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TOTAL - BASEMENT CONSTRUCTION

B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

New Addition

Floor Structure - Steel:

Steel beams and columns to new addition; 14.8#/SF	1,624	tns	3,500.00	5,684,000
Premium for HSS	406	tns	300.00	121,800
Shear studs	43,892	ea	2.50	109,730

Floor Structure

2" 18 Ga. Metal galvanized floor Deck	219,460	sf	3.75	822,975
WWF reinforcement	252,379	sf	0.80	201,903
Concrete Fill to metal deck; 6" Light Weight	5,121	cy	160.00	819,360
Place and finish concrete	219,460	sf	2.00	438,920
Rebar to decks	65,838	lbs	1.20	79,006
Misc. angles	219,460	sf	0.50	109,730

Miscellaneous

Fire proofing to columns and beams	219,460	sf	2.25	493,785
Intumescent paint	1	ls	50,000.00	50,000
Fire stopping floors	1	ls	25,000.00	25,000

SUBTOTAL

8,956,209

B1020 ROOF CONSTRUCTION

New Addition

Roof Structure - Steel:

Steel beams and columns to new addition; 14.8#/SF	582	tns	3,500.00	2,037,000
Premium for HSS	146	tns	300.00	43,800
Exposed steel	1	ls	50,000.00	50,000

Roof Structure

Acoustic deck allowance	8,000	sf	7.00	56,000
3" 20 Ga. galvanized Metal Roof Deck	70,670	sf	4.00	282,680

Miscellaneous

Concrete under RTU's	15,000	sf	8.00	120,000
Fire proofing to columns, beams and deck	70,670	sf	3.00	212,010

SUBTOTAL

2,801,490

TOTAL - SUPERSTRUCTURE \$11,757,699

B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Exterior Wall Area - Solid Assume 70% 65,825 sf

042000 MASONRY

Brick veneer, 3 color; 85% of solid area	55,951	sf	40.00	2,238,040
Staging to exterior wall	65,825	sf	4.00	263,300

OPTION 3 - BHS Education Plan



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GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

155								
156	055000	MISC. METALS						
157		Stainless steel sign at main entrance	1	ls	20,000.00	20,000		
158								
159								
160	070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
161		Air barrier	65,825	sf	6.50	427,863		
162		Air barrier/flashing at windows	16,595	lf	6.25	103,719		
163		Miscellaneous sealants to closure	65,825	sf	1.00	65,825		
164								
165	072100	THERMAL INSULATION						
166		Insulation	65,825	sf	2.25	148,106		
167								
168	076400	CLADDING						
169		Metal panel; 15% of solid area	9,874	sf	75.00	740,550		
170		Roof equipment screen	1	ls	100,000.00	100,000		
171								
172	092900	GYPSUM BOARD ASSEMBLIES						
173		6" metal stud backup	65,825	sf	9.00	592,425		
174		Gypsum Sheathing	65,825	sf	2.75	181,019		
175		Drywall lining to interior face of stud backup	65,825	sf	3.30	217,223		
176								
177		SUBTOTAL				5,098,070		
178								
179	B2020	WINDOWS						
180		Exterior Wall Area - Glazed Assume 30%	28,211	sf				
181								
182	061000	ROUGH CARPENTRY						
183		Wood blocking at openings	16,595	lf	8.00	132,760		
184								
185	070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
186		Backer rod & double sealant	16,595	lf	8.50	141,058		
187								
188	080001	METAL WINDOWS						
189		Windows, double glazed; 20% of glazed area	5,642	sf	90.00	507,780		
190		Curtainwall, double glazed; 80% of glazed area	22,569	sf	120.00	2,708,280		
191		Sunshades; horizontal	1	ls	75,000.00	75,000		
192								
193	089000	LOUVERS						
194		Louvers	250	sf	65.00	16,250		
195		SUBTOTAL				3,581,128		
196								
197	B2030	EXTERIOR DOORS						
198		Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000		
199		HM doors, frames and hardware- Double	4	pr	2,000.00	8,000		
200		Backer rod & double sealant	240	lf	4.00	960		
201		Wood blocking at openings	240	lf	3.00	720		
202		SUBTOTAL				73,680		
203								
204	TOTAL - EXTERIOR CLOSURE						\$8,752,878	
205								
206								
207	B30 ROOFING							

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

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B3010	ROOF COVERINGS							
	New roofing complete	78,670	sf	28.00	2,202,760			
	Allowance for soffits; metal panels with backup system	4,820	sf	80.00	385,600			
	SUBTOTAL					2,588,360		
B3020	ROOF OPENINGS							
	Skylights, allow for atrium skylight	6,000	sf	130.00	780,000			
	Smoke hatch	5	loc	5,000.00	25,000			
	Roof hatch	2	loc	2,500.00	5,000			
	SUBTOTAL					810,000		
TOTAL - ROOFING								\$3,398,360

C10 INTERIOR CONSTRUCTION

C1010	PARTITIONS							
	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	298,130	gsf	26.00	7,751,380			
	SUBTOTAL					7,751,380		
C1020	INTERIOR DOORS							
	Interior doors, frames and hardware	298,130	gsf	5.00	1,490,650			
	SUBTOTAL					1,490,650		
C1030	SPECIALTIES / MILLWORK							
	Toilet Partitions and accessories	298,130	gsf	0.80	238,504			
	Backer panels in electrical closets	1	ls	1,000.00	1,000			
	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	298,130	sf	1.00	298,130			
	Room Signs	298,130	gsf	0.40	119,252			
	Fire extinguisher cabinets	99	ea	350.00	34,650			
	Lockers	298,130	gsf	1.60	477,008			
	Janitors Work Shop Accessories	1	ls	1,500.00	1,500			
	Janitors Closet Accessories	5	rms	300.00	1,500			
	<i>Media</i>							
	Reception desks	4	loc	25,000	100,000			
	Railings to open to below areas	1	ls	100,000	100,000			
	Library shelving at perimeters 7' Tall					F,F & E		
	Library shelving at perimeters 3' Tall					F,F & E		
	Display cases	298,130	gsf	0.25	74,533			
	Miscellaneous metals throughout building	298,130	sf	1.50	447,195			
	Miscellaneous sealants throughout building	298,130	sf	1.25	372,663			
	SUBTOTAL					2,265,935		
TOTAL - INTERIOR CONSTRUCTION								\$11,507,965

C20 STAIRCASES

C2010	STAIR CONSTRUCTION						
	Metal pan stair; egress stair	8	flt	25,000.00	200,000		

OPTION 3 - BHS Education Plan



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - BHS EDUCATION PLAN: ADDITION

259	Main staircase	1	flt	100,000.00	100,000			
260	Commons tiered seating	200	lf	250.00	50,000			
261	Commons steps	2	loc	5,000.00	10,000			
262	Concrete fill to stairs	8	flt	2,000.00	16,000			
263	SUBTOTAL					376,000		
265	C2020 STAIR FINISHES							
266	High performance coating to stairs including all railings etc.	8	flt	3,000.00	24,000			
267	Rubber tile at stairs - landings	800	sf	10.00	8,000			
268	Rubber tile at stairs - treads & risers	960	lft	19.06	18,298			
269	SUBTOTAL					50,298		
271	TOTAL - STAIRCASES							\$426,298

C30 INTERIOR FINISHES

276	C3010 WALL FINISHES							
277	Wall finishes	298,130	sf	10.00	2,981,300			
278	SUBTOTAL					2,981,300		
280	C3020 FLOOR FINISHES							
281	Floor finishes	298,130	sf	11.00	3,279,430			
282	Moisture mitigation	238,504	sf	3.00	715,512			
283	SUBTOTAL					3,994,942		
285	C3030 CEILING FINISHES							
286	Ceiling finishes	298,130	sf	7.00	2,086,910			
287	SUBTOTAL					2,086,910		
289	TOTAL - INTERIOR FINISHES							\$9,063,152

D10 CONVEYING SYSTEMS

294	D1010 ELEVATOR							
295	New elevator; 5stop; oversize; 5,000 lbs	2	ea	200,000.00	400,000			
296	SUBTOTAL					400,000		
298	TOTAL - CONVEYING SYSTEMS							\$400,000

D20 PLUMBING

303	D20 PLUMBING, GENERALLY						
304	<u>Equipment</u>						
305	Plumbing equipment	298,130	sf	2.00	596,260		
306	<u>Plumbing Fixtures & Specialties</u>						
307	Miscellaneous plumbing fixtures	298,130	sf	1.00	298,130		
308	<u>Domestic Water Type L Copper Pipe</u>						
309	Domestic water pipe with fittings & hangers	298,130	sf	2.50	745,325		
310	Domestic water pipe insulation	298,130	sf	1.50	447,195		
311	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>						
312	Sanitary waste pipe with fittings & hangers	298,130	sf	2.35	700,606		

OPTION 3 - BHS Education Plan



Brookline High School
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GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - BHS EDUCATION PLAN: ADDITION								
313	Kitchen waste pipe with fittings & hangers	298,130	sf	0.30	89,439			
314	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
315	Acid waste & vent pipe with fittings & hangers	298,130	sf	0.75	223,598			
316	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
317	Storm water pipe with fittings & hangers	298,130	sf	1.25	372,663			
318	Pipe insulation on horizontal runs	298,130	sf	0.20	59,626			
319	<u>Gas And Fuel Distribution Pipe</u>							
320	Gas pipe with fittings & hangers	298,130	sf	0.75	223,598			
321	<u>Miscellaneous</u>							
322	Coordination & BIM	298,130	sf	0.25	74,533			
323	Coring, sleeves & firestopping	298,130	sf	0.03	8,944			
324	Commissioning support	298,130	sf	0.08	23,850			
325	Fees & permits	298,130	sf	0.13	38,757			
326	SUBTOTAL					3,902,524		
327								
328	TOTAL - PLUMBING							\$3,902,524

D30 HVAC

D30 HVAC, GENERALLY

334	<u>HVAC Equipment</u>						
335	HVAC equipment	298,130	sf	1.00	298,130		
336	<u>Pumps</u>						
337	Pumps	298,130	sf	0.28	83,476		
338	<u>Air distribution</u>						
339	RTU's Gas fired heating with DX cooling	566,447	cfm	9.25	5,239,635		
340	MAU unit gas fired heating	5,000	cfm	3.25	16,250		
341	Air distribution equipment	298,130	sf	6.00	1,788,780		
342	Exhaust fans	298,130	sf	0.50	149,065		
343	<u>Sheet metal & Accessories</u>						
344	Sheet metal & accessories	298,130	sf	9.00	2,683,170		
345	<u>Piping</u>						
346	<u>Hot Water Piping</u>						
347	Hot water piping with fittings & hangers	298,130	sf	2.00	596,260		
348	<u>Chilled Water Piping</u>						
349	Chilled water piping with fittings & hangers	298,130	sf	0.55	163,972		
350	<u>Refrigerant Piping</u>						
351	Refrigerant piping with fittings & hangers	298,130	sf	0.10	29,813		
352	<u>Condensate Drain Piping</u>						
353	Condensate drain piping with fittings & hangers	298,130	sf	0.15	44,720		
354	<u>Piping Insulation</u>						
355	Piping insulation	298,130	sf	1.50	447,195		
356	<u>Automatic Temperature Controls</u>						
357	Automatic temperature controls DDC	298,130	sf	4.50	1,341,585		
358	Balancing						
359	System testing & balancing	298,130	sf	0.60	178,878		
360	<u>Miscellaneous</u>						
361	Commissioning support	298,130	sf	0.42	125,215		
362	Coring, sleeves & fire stopping	298,130	sf	0.17	50,682		

OPTION 3 - BHS Education Plan



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GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 - BHS EDUCATION PLAN: ADDITION							
363	Rigging & equipment rental	298,130	sf	0.42	125,215		
364	Vibration & seismic restraints	298,130	sf	0.38	113,289		
365	SUBTOTAL					13,475,330	
TOTAL - HVAC							\$13,475,330
D40 FIRE PROTECTION							
372	D40 FIRE PROTECTION, GENERALLY						
373	Fire protection system	298,130	gsf	4.50	1,341,585		
374	SUBTOTAL					1,341,585	
TOTAL - FIRE PROTECTION							\$1,341,585
D50 ELECTRICAL							
D5010 SERVICE & DISTRIBUTION							
Gear & Distribution							
384	Normal power distribution switchgear & feeders based on 4000A 480/277V	298,130	sf	5.00	1,490,650		
385	<u>Emergency power</u>						
386	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	298,130	sf	4.00	1,192,520		
387	<u>Equipment Wiring</u>						
388	Equipment wiring	298,130	sf	2.00	596,260		
389	SUBTOTAL					3,279,430	
D5020 LIGHTING & POWER							
393	<u>Lighting & Branch Power</u>				-		
394	Lighting fixtures (LED as BOD) with installation labor	298,130	sf	5.00	1,490,650		
395	<u>Lighting control system</u>						
396	Lighting controls including daylight harvesting system, allow	298,130	sf	1.15	342,850		
397	<u>Branch devices</u>						
398	Branch devices	298,130	sf	0.50	149,065		
399	<u>Lighting and branch circuitry</u>						
400	Lighting & branch circuitry	298,130	sf	5.50	1,639,715		
401	SUBTOTAL					3,622,280	
D5030 COMMUNICATION & SECURITY SYSTEMS							
405	<u>Fire Alarm</u>						
406	Fire alarm system	298,130	sf	2.00	596,260		
407	<u>Bi-Directional System</u>						
408	BDA system	298,130	sf	0.50	149,065		
409	<u>Security System</u>						
410	Security System	298,130	sf	2.50	745,325		
411	<u>Telephone/Data/CATV</u>						
412	Network switches, PBX, IP, VP, CCTV (By owner)				By Owner		
413	Telecommunications rough in	298,130	sf	1.50	447,195		
414	Telecommunications devices and cabling	298,130	sf	2.00	596,260		
415	<u>Public Address/Clock System</u>						

OPTION 3 - BHS Education Plan



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GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - BHS EDUCATION PLAN: ADDITION								
416	PA/Master Clock system	298,130	sf	1.25	372,663			
417	Audio Visual (rough-in and power only)							
418	AV equipment					By Owner		
419	Rough-In conduit and backboxes only	298,130	sf	0.50	149,065			
420	Auditorium							
421	Rigging system equipment & installation					See equipment		
422	Power to rigging equipment	1	ls	15,000.00	15,000			
423	Stage dimming system with performance fixture package, allow	1	ls	275,000.00	275,000			
424	Installation, rough-in & 120V power to dimming equipment	1	ls	75,000.00	75,000			
425	Performance audio visual equipment, installation & LV cabling, allow	1	ls	150,000.00	150,000			
426	Performance audio visual rough-in and power	1	ls	65,000.00	65,000			
427								
428	Allowance for Black Box Theater	1	ls	150,000.00	150,000			
429								
430	Allowance for White Box Theater	1	ls	150,000.00	150,000			
431	Gymnasium							
432	Sound system	1	ls	15,000.00	NIC			
433	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	NIC			
434	Misc. gym equipment feed and connections	1	ls	25,000.00	NIC			
435	SUBTOTAL					3,935,833		
436								
437	D5040 OTHER ELECTRICAL SYSTEMS							
438	Miscellaneous							
439	Temp power and lights	298,130	sf	0.45	134,159			
440	Seismic restraints	1	ls	15,000.00	15,000			
441	Lightning Protection System, UL Master label	298,130	sf	0.45	134,159			
442	Fees & Permits	298,130	ls	0.80	238,504			
443	SUBTOTAL					521,822		
444								
445	TOTAL - ELECTRICAL						\$11,359,365	
446								
447								
448	E10 EQUIPMENT							
449								
450	E10 EQUIPMENT, GENERALLY							
451	Kiln	2	ea	5,000.00	10,000			
452	Food Service equipment					In Renovation		
453	Loading dock equipment	1	ls	20,000.00	20,000			
454	Theatrical Equipment Stage curtains, rigging and controls	1	ls	250,000.00	250,000			
455	Electrically operated projection screens	1	loc	15,000.00	15,000			
456	SUBTOTAL					295,000		
457								
458	TOTAL - EQUIPMENT						\$295,000	
459								
460								
461	E20 FURNISHINGS							
462								
463	E2010 FIXED FURNISHINGS							

OPTION 3 - BHS Education Plan



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GFA 298,130

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - BHS EDUCATION PLAN: ADDITION								
464	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500			
465	Window blinds	28,211	sf	7.00	197,477			
466	Theatrical seating	1	ls	180,000.00	180,000			
467	Counters, base cabinets, tall storage in classrooms and other rooms	298,130	gsf	10.00	2,981,300			
468	SUBTOTAL					3,386,277		
469	E2020 MOVABLE FURNISHINGS							
470	All movable furnishings to be provided and installed by owner							
471	SUBTOTAL					NIC		
TOTAL - FURNISHINGS							\$3,386,277	
F10 SPECIAL CONSTRUCTION								
477	F10 SPECIAL CONSTRUCTION							
478	No items in this section							
479	SUBTOTAL							
TOTAL - SPECIAL CONSTRUCTION								
F20 SELECTIVE BUILDING DEMOLITION								
486	F2010 BUILDING ELEMENTS DEMOLITION							
487	Connections to existing building	1	ls	100,000.00	100,000			
488	SUBTOTAL					100,000		
489	F2020 HAZARDOUS COMPONENTS ABATEMENT							
490	See main summary for HazMat allowance				See Summary			
491	SUBTOTAL							
TOTAL - SELECTIVE BUILDING DEMOLITION							\$100,000	

OPTION 3 - BHS Education Plan (includes Underground Parking)



Brookline High School
Design Options
 Brookline, MA

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Feasibility Estimate

GFA 78,390

CSI CODE	DESCRIPTION	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING EDUCATION PLAN

GROSS FLOOR AREA CALCULATION

Parking level 1 78,390

TOTAL GROSS FLOOR AREA (GFA)	78,390 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

033000 CONCRETE

Cantilevered footings

Formwork	3,666	sf	14.00	51,324
Re-bar	89,820	lbs.	1.32	118,562
Concrete material; 4,000 psi	998	cy	137.50	137,225
Placing concrete	998	cy	55.00	54,890

Retaining wall

Formwork	26,884	sf	19.00	510,796
Re-bar	80,652	lbs.	1.32	106,461
Concrete material; 4,000 psi	784	cy	137.50	107,800
Placing concrete	784	cy	55.00	43,120

Spread Footings - with building

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Waterproofing retaining wall	15,886	sf	7.00	111,202
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072100 THERMAL INSULATION

Insulation	26,884	sf	3.00	NIC
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312000 EARTHWORK

Strip footings

Excavation	10,862	cy	15.00	162,930
Remove off site	10,862	cy	20.00	217,240
Backfill with imported material	9,864	cy	26.00	256,464

Miscellaneous

Perimeter drain	1,222	lf	18.00	21,996
Allowance for dewatering for foundation work	1	ls	60,000.00	60,000

SUBTOTAL

1,960,010

A1020 SPECIAL FOUNDATIONS

Sheeting and Shoring allowance	26,884	sf	55.00	1,478,620
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SUBTOTAL

1,478,620

A1030 LOWEST FLOOR CONSTRUCTION

033000 CONCRETE

Slab on grade; SOG inside footprint with building

	6,500	sf		-
Vapor barrier, heavy duty, 15 mil	6,500	sf	1.00	6,500
WWF reinforcement, epoxy coated	7,475	sf	1.20	8,970
Reinforcement, 6 psf @ ramp	6,000	lbs	1.32	7,920
Concrete - 4" thick; 4,000 psi	84	cy	137.50	11,550
Concrete - 8" thick; 4,000 psi, ramp	214	cy	137.50	29,425
Placing concrete	84	cy	49.50	4,158
Finishing and curing concrete	6,500	sf	2.50	16,250
Sawcut full depth control joints	6,500	sf	0.22	1,430

OPTION 3 - BHS Education Plan (includes Underground Parking)



Brookline High School
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GFA

78,390

CSI CODE	DESCRIPTION		UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
UNDERGROUND PARKING EDUCATION PLAN							
	Premium for concrete at ramp	8,200	sf	5.00	41,000		
	<u>Miscellaneous</u>						
	Moisture mitigation				NIC		
072100	THERMAL INSULATION						
	Insulation, 3" foamed	6,500	sf	3.25	NIC		
312000	EARTHWORK						
	<u>Slab on grade</u>						
	Crushed stone, 12"	241	cy	36.00	8,676		
	Compact sub-grade	6,500	sf	0.55	3,575		
	Underslab drainage	6,500	sf	3.30	21,450		
	Striping	134	spc	50.00	6,700		
	SUBTOTAL					167,604	
TOTAL - FOUNDATIONS							\$3,606,234

A20 BASEMENT CONSTRUCTION

A2010 BASEMENT EXCAVATION

312000	EARTHWORK						
	Excavation for parking garage	20,994	cy	12.00	251,928		
	Export off site	20,994	cy	20.00	419,880		
	Temporary for sheeting and shoring				See above		
	SUBTOTAL					671,808	

A2020 BASEMENT WALLS

See foundations above
SUBTOTAL

TOTAL - BASEMENT CONSTRUCTION							\$671,808
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

033000	CONCRETE						
	WWF reinforcement	90,149	sf	0.80	72,119		
	Concrete topping slab; 3" Normal Weight	798	cy	135.00	107,730		
	Place and finish concrete	78,390	sf	3.00	235,170		
	<u>Floor Structure - Precast Concrete</u>						
	10ft wide x 36" deep precast concrete double T's clear spanning 60 feet; including columns	78,390	sf	35.00	2,743,650		
	SUBTOTAL					3,158,669	

B1020 ROOF CONSTRUCTION

033000	CONCRETE						
	Waterproofing system to area under building footprint	6,500	sf	16.00	104,000		

OPTION 3 - BHS Education Plan (includes Underground Parking)



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GFA

78,390

CSI CODE	DESCRIPTION	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING EDUCATION PLAN

SUBTOTAL

104,000

TOTAL - SUPERSTRUCTURE					\$3,262,669
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B20 EXTERIOR CLOSURE

B2030 EXTERIOR DOORS

083300 OVERHEAD DOORS

Allowance for garage overhead entrance/exit door

1 loc 10,000.00 10,000

SUBTOTAL

10,000

TOTAL - EXTERIOR CLOSURE					\$10,000
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C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

042000 MASONRY

CMU walls

1,144 sf 24.00 27,456

Elevator shaft; CMU

847 sf 28.00 23,716

SUBTOTAL

51,172

C1020 INTERIOR DOORS

081110 HOLLOW METAL DOOR FRAMES

Frames, double

2 pr 600.00 1,200

HM door

4 ea 460.00 1,840

087100 DOOR HARDWARE

Hardware

4 leaf 800.00 3,200

090007 PAINTING

Finish doors and frames

4 ea 200.00 800

SUBTOTAL

7,040

C1030 SPECIALTIES / MILLWORK

Signage

78,390 gfa 0.15 11,759

SUBTOTAL

11,759

TOTAL - INTERIOR CONSTRUCTION					\$69,971
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

New precast stairs with galvanized steel guardrails and handrails

2 flt 16,000.00 32,000

SUBTOTAL

32,000

C2020 STAIR FINISHES

No Work in this section

SUBTOTAL

-

OPTION 3 - BHS Education Plan (includes Underground Parking)



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GFA 78,390

CSI CODE	DESCRIPTION	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING EDUCATION PLAN

TOTAL - STAIRCASES						\$32,000
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C30 INTERIOR FINISHES

C3010 WALL FINISHES

Paint to CMU walls	3,135	sf	1.25	3,919		
SUBTOTAL					3,919	

C3020 FLOOR FINISHES

Sealer to concrete slab	78,390	sf	1.50	117,585		
SUBTOTAL					117,585	

C3030 CEILING FINISHES

No Work in this section						
SUBTOTAL					-	

TOTAL - INTERIOR FINISHES						\$121,504
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D10 CONVEYING SYSTEMS

D1010 ELEVATOR

New holeless hydraulic elevator;	2	stop	40,000.00	80,000		
SUBTOTAL					80,000	

TOTAL - CONVEYING SYSTEMS						\$80,000
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D20 PLUMBING

D20 PLUMBING, GENERALLY

Plumbing equipment; oil/water separator	78,390	sf	0.55	43,115		
<u>Storm Drainage, Hubless Cast Iron Pipe</u>						
Storm water pipe with fittings & hangers	78,390	sf	4.25	333,158		
<u>Miscellaneous</u>						
Coordination & BIM	1	ls	5,000.00	5,000		
Fees & permits	1	ls	4,000.00	4,000		
SUBTOTAL					385,273	

TOTAL - PLUMBING						\$385,273
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D30 HVAC

D30 HVAC, GENERALLY

HVAC equipment	78,390	sf	4.00	313,560		
<u>Air distribution</u>						
Air distribution equipment	78,390	sf	5.00	391,950		
<u>Sheet metal & Accessories</u>						
Sheet metal & accessories	78,390	sf	1.50	117,585		
<u>Automatic Temperature Controls</u>						
Automatic temperature controls DDC	78,390	sf	1.50	117,585		
Balancing						
System testing & balancing	78,390	sf	0.35	27,437		
<u>Miscellaneous</u>						
Coordination & BIM	1	ls	10,000.00	10,000		
Commissioning support	1	ls	7,000.00	7,000		
Coring, sleeves & fire stopping	1	ls	5,000.00	5,000		

OPTION 3 - BHS Education Plan (includes Underground Parking)



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GFA

78,390

CSI CODE	DESCRIPTION	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING EDUCATION PLAN

	Equipment start-up and inspection	1	ls	1,000.00	1,000	
	Rigging & equipment rental	1	ls	5,000.00	5,000	
	SUBTOTAL					996,117

TOTAL - HVAC						\$996,117
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D40 FIRE PROTECTION

D40	FIRE PROTECTION, GENERALLY					
	Sprinkler system	78,390	gsf	3.50	274,365	
	SUBTOTAL					274,365

TOTAL - FIRE PROTECTION						\$274,365
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D50 ELECTRICAL

D5010	SERVICE & DISTRIBUTION					
	Service and distribution	78,390	gsf	0.50	39,195	
	Equipment wiring	78,390	gsf	0.25	19,598	
	Lighting and branch	78,390	gsf	2.50	195,975	
	Fire alarm	78,390	gsf	1.00	78,390	
	Security	78,390	gsf	1.00	78,390	
	Coordination & BIM	1	ls	3,000.00	3,000	
	Permit and fees	1	ls	3,500.00	3,500	
	SUBTOTAL					418,048

TOTAL - ELECTRICAL						\$418,048
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E10 EQUIPMENT

E10	EQUIPMENT, GENERALLY					
	Parking loop/detection/barriers	1	ls	30,000.00	30,000	
	SUBTOTAL					30,000

TOTAL - EQUIPMENT						\$30,000
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SUBTOTAL - UNDERGROUND PARKING						\$9,957,989
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OPTION 4A: SUMMARY part 1 of 3

New Stand-alone Cypress Building (9th Grade Academy)



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4A				
	Sep-18			
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET		109,810	\$293.79	\$32,261,396
DEMOLISH EXISTING SCHOOL		36,500	\$10.00	\$365,000
REMOVE HAZARDOUS MATERIALS				\$584,000
PLAZA DECK PREMIUM		7,340	\$250.00	\$1,835,000
SITWORK - ALLOWANCE 8% of BUILDING				\$2,580,912
SUB-TOTAL		109,810	\$342.65	\$37,626,308
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$3,386,368
DESIGN AND PRICING CONTINGENCY	15%			\$6,151,901
SUB-TOTAL		109,810	\$429.51	\$47,164,577
GENERAL CONDITIONS	6.00%			\$2,829,875
GENERAL REQUIREMENTS	4.00%			\$1,886,583
BONDS	1.15%			\$542,393
INSURANCE	1.25%			\$589,557
PERMIT				Waived
CM FEE	2.50%			\$1,325,325
CM/GMP CONTINGENCY	3%			\$1,414,937
TOTAL NEW CONSTRUCTION CYPRESS BUILDING		109,810	\$507.72	\$55,753,247

OPTION 4A: SUMMARY part 2 of 3

New 5-Classroom Addition at the BHS Main Building



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4A	Sep-18			
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS		6,800	\$399.05	\$2,713,559
SITework AT NEW CLASSROOM ADDITION				\$173,291
SUB-TOTAL		6,800	\$424.54	\$2,886,850
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$259,817
DESIGN AND PRICING CONTINGENCY	15%			\$472,000
SUB-TOTAL		6,800	\$532.16	\$3,618,667
GENERAL CONDITIONS	6.00%			\$217,120
GENERAL REQUIREMENTS	4.00%			\$144,747
BONDS	1.15%			\$41,615
INSURANCE	1.25%			\$45,233
PERMIT				Waived
CM FEE	2.50%			\$101,685
CM/GMP CONTINGENCY	3%			\$108,560
PHASING PREMIUM	2.0%			\$72,373
TOTAL OF ALL CONSTRUCTION		6,800	\$639.71	\$4,350,000

OPTION 4A: SUMMARY part 3 of 3

BHS Third Floor Renovation of Science into New Science Spaces



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4A	Sep-18			
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE		36,900	\$206.32	\$7,613,366
REMOVE HAZARDOUS MATERIALS				\$590,400
SUB-TOTAL		36,900	\$222.32	\$8,203,766
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$738,339
DESIGN AND PRICING CONTINGENCY	15%			\$1,341,316
SUB-TOTAL		36,900	\$278.68	\$10,283,421
GENERAL CONDITIONS	6.00%			\$617,005
GENERAL REQUIREMENTS	4.00%			\$411,337
BONDS	1.15%			\$118,259
INSURANCE	1.25%			\$128,543
PERMIT				Waived
CM FEE	2.50%			\$288,964
CM/GMP CONTINGENCY	3%			\$308,503
PHASING PREMIUM	2.0%			\$205,668
TOTAL OF ALL CONSTRUCTION		36,900	\$335.01	\$12,361,700

OPTION 4B: SUMMARY part 1 of 3

New Stand-alone Cypress Building (9th Grade Academy)



Brookline High School

Design Options

Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4B				
	Sep-18			
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET		109,810	\$293.79	\$32,261,396
DEMOLISH EXISTING SCHOOL		36,500	\$10.00	\$365,000
REMOVE HAZARDOUS MATERIALS				\$584,000
PLAZA DECK PREMIUM		7,340	\$250.00	\$1,835,000
SITework - ALLOWANCE 8% of BUILDING				\$2,580,912
SUB-TOTAL		109,810	\$342.65	\$37,626,308
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$3,386,368
DESIGN AND PRICING CONTINGENCY	15%			\$6,151,901
SUB-TOTAL		109,810	\$429.51	\$47,164,577
GENERAL CONDITIONS	6.00%			\$2,829,875
GENERAL REQUIREMENTS	4.00%			\$1,886,583
BONDS	1.15%			\$542,393
INSURANCE	1.25%			\$589,557
PERMIT				Waived
CM FEE	2.50%			\$1,325,325
CM/GMP CONTINGENCY	3%			\$1,414,937
TOTAL NEW CONSTRUCTION CYPRESS BUILDING		109,810	\$507.72	\$55,753,247

OPTION 4B: SUMMARY part 2 of 3

BHS New Science STEM Wing at Roberts-Wing Renovation



Brookline High School

Design Options

Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4B	Sep-18			
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)		69,750	\$277.56	\$19,360,067
REMOVE HAZARDOUS MATERIALS				\$309,600
DEMOLISH EXISTING SCHOOL - PARTIAL		19,350	\$10.00	\$193,500
SITework NEW SCIENCE BUILDING				\$1,548,805
SUB-TOTAL		69,750	\$306.98	\$21,411,972
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$1,927,077
DESIGN AND PRICING CONTINGENCY	15%			\$3,500,857
SUB-TOTAL		69,750	\$384.80	\$26,839,906
GENERAL CONDITIONS	6.00%			\$1,610,394
GENERAL REQUIREMENTS	4.00%			\$1,073,596
BONDS	1.15%			\$308,659
INSURANCE	1.25%			\$335,499
PERMIT				Waived
CM FEE	2.50%			\$754,201
CM/GMP CONTINGENCY	3%			\$805,197
PHASING PREMIUM	2.0%			\$536,798
TOTAL OF ALL CONSTRUCTION		69,750	\$462.57	\$32,264,250

OPTION 4B: SUMMARY part 3 of 3

BHS Third Floor Renovate Science into Academic Classroom and Collaborative Spaces



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4B	Sep-18			
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE		36,500	\$118.53	\$4,326,206
REMOVE HAZARDOUS MATERIALS				\$584,000
SUB-TOTAL		36,500	\$134.53	\$4,910,206
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$441,919
DESIGN AND PRICING CONTINGENCY	15%			\$802,819
SUB-TOTAL		36,500	\$168.63	\$6,154,944
GENERAL CONDITIONS	6.00%			\$369,297
GENERAL REQUIREMENTS	4.00%			\$246,198
BONDS	1.15%			\$70,782
INSURANCE	1.25%			\$76,937
PERMIT				Waived
CM FEE	2.50%			\$172,954
CM/GMP CONTINGENCY	3%			\$184,648
PHASING PREMIUM	2.0%			\$123,099
TOTAL OF ALL CONSTRUCTION		36,500	\$202.71	\$7,398,859

OPTION 4C: SUMMARY part 1 of 3

New Stand-alone Cypress Building & MBTA (9th Grade Academy)



Brookline High School

Design Options

Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4C	Sep-18			
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA		112,700	\$299.51	\$33,754,949
PLAZA DECK PREMIUM		7,400	\$250.00	\$1,850,000
DEMOLISH EXISTING 2 STORY MEDICAL OFFICE BUILDING AND PARKING LOT- 111 Cypress St.		28,100		\$363,000
SITework AT 9TH GRADE ACADEMY				\$2,700,396
SUB-TOTAL		112,700	\$343.11	\$38,668,345
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$3,480,151
DESIGN AND PRICING CONTINGENCY	15%			\$6,322,274
SUB-TOTAL		112,700	\$430.09	\$48,470,770
GENERAL CONDITIONS	6.00%			\$2,908,246
GENERAL REQUIREMENTS	4.00%			\$1,938,831
BONDS	1.15%			\$557,414
INSURANCE	1.25%			\$605,885
PERMIT				Waived
CM FEE	2.50%			\$1,362,029
CM/GMP CONTINGENCY	3%			\$1,454,123
PHASING PREMIUM	2.0%			\$969,415
TOTAL OF ALL CONSTRUCTION		112,700	\$517.01	\$58,266,713

OPTION 4C: SUMMARY part 2 of 3

New 5-Classroom Addition at the BHS Main Building



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4C	Sep-18			
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS		6,800	\$399.05	\$2,713,559
SITework AT NEW CLASSROOM ADDITION				\$173,291
SUB-TOTAL		6,800	\$424.54	\$2,886,850
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$259,817
DESIGN AND PRICING CONTINGENCY	15%			\$472,000
SUB-TOTAL		6,800	\$532.16	\$3,618,667
GENERAL CONDITIONS	6.00%			\$217,120
GENERAL REQUIREMENTS	4.00%			\$144,747
BONDS	1.15%			\$41,615
INSURANCE	1.25%			\$45,233
PERMIT				Waived
CM FEE	2.50%			\$101,685
CM/GMP CONTINGENCY	3%			\$108,560
PHASING PREMIUM	2.0%			\$72,373
TOTAL OF ALL CONSTRUCTION		6,800	\$639.71	\$4,350,000

OPTION 4C: SUMMARY part 3 of 3

BHS Third Floor Renovation of Science into New Science Spaces



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4C	Sep-18			
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE		36,900	\$206.32	\$7,613,366
REMOVE HAZARDOUS MATERIALS				\$590,400
SUB-TOTAL		36,900	\$222.32	\$8,203,766
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$738,339
DESIGN AND PRICING CONTINGENCY	15%			\$1,341,316
SUB-TOTAL		36,900	\$278.68	\$10,283,421
GENERAL CONDITIONS	6.00%			\$617,005
GENERAL REQUIREMENTS	4.00%			\$411,337
BONDS	1.15%			\$118,259
INSURANCE	1.25%			\$128,543
PERMIT				Waived
CM FEE	2.50%			\$288,964
CM/GMP CONTINGENCY	3%			\$308,503
PHASING PREMIUM	2.0%			\$205,668
TOTAL OF ALL CONSTRUCTION	12,361,700	36,900	\$335.01	\$12,361,700

OPTION 4D: SUMMARY part 1 of 3

New Stand-alone Cypress Building & MBTA (9th Grade Academy)



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4D	Sep-18			
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA		112,700	\$299.51	\$33,754,949
PLAZA DECK PREMIUM		7,400	\$250.00	\$1,850,000
DEMOLISH EXISTING 2 STORY MEDICAL OFFICE BUILDING AND PARKING LOT- 111 Cypress St.		28,100	\$10.00	\$363,000
SITework - 9TH GRADE ACADEMY				\$2,700,396
SUB-TOTAL		112,700	\$343.11	\$38,668,345
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$3,480,151
DESIGN AND PRICING CONTINGENCY	15%			\$6,322,274
SUB-TOTAL		112,700	\$430.09	\$48,470,770
GENERAL CONDITIONS	6.00%			\$2,908,246
GENERAL REQUIREMENTS	4.00%			\$1,938,831
BONDS	1.15%			\$557,414
INSURANCE	1.25%			\$605,885
PERMIT				Waived
CM FEE	2.50%			\$1,362,029
CM/GMP CONTINGENCY	3%			\$1,454,123
PHASING PREMIUM	2.0%			\$969,415
TOTAL OF ALL CONSTRUCTION		112,700	\$517.01	\$58,266,713

OPTION 4D: SUMMARY part 2 of 3

BHS New Science STEM Wing and Roberts-Wing Renovation



Brookline High School

Design Options

Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4D	Sep-18			
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)		69,750	\$277.56	\$19,360,067
REMOVE HAZARDOUS MATERIALS				\$309,600
DEMOLISH EXISTING SCHOOL - PARTIAL		19,350	\$10.00	\$193,500
SITework NEW SCIENCE BUILDING				\$1,548,805
SUB-TOTAL		69,750	\$306.98	\$21,411,972
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$1,927,077
DESIGN AND PRICING CONTINGENCY	15%			\$3,500,857
SUB-TOTAL		69,750	\$384.80	\$26,839,906
GENERAL CONDITIONS	6.00%			\$1,610,394
GENERAL REQUIREMENTS	4.00%			\$1,073,596
BONDS	1.15%			\$308,659
INSURANCE	1.25%			\$335,499
PERMIT				Waived
CM FEE	2.50%			\$754,201
CM/GMP CONTINGENCY	3%			\$805,197
PHASING PREMIUM	2.0%			\$536,798
TOTAL OF ALL CONSTRUCTION		69,750	\$462.57	\$32,264,250

OPTION 4D: SUMMARY part 3 of 3
 BHS Third Floor Renovate Science into Academic Classroom and Collaborative Spaces



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4D	Sep-18			
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE		36,500	\$118.53	\$4,326,206
REMOVE HAZARDOUS MATERIALS				\$584,000
SUB-TOTAL		36,500	\$134.53	\$4,910,206
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$441,919
DESIGN AND PRICING CONTINGENCY	15%			\$802,819
SUB-TOTAL		36,500	\$168.63	\$6,154,944
GENERAL CONDITIONS	6.00%			\$369,297
GENERAL REQUIREMENTS	4.00%			\$246,198
BONDS	1.15%			\$70,782
INSURANCE	1.25%			\$76,937
PERMIT				Waived
CM FEE	2.50%			\$172,954
CM/GMP CONTINGENCY	3%			\$184,648
PHASING PREMIUM	2.0%			\$123,099
TOTAL OF ALL CONSTRUCTION		36,500	\$202.71	\$7,398,859

OPTION 4A & 4B: Stand-alone
Cypress Building

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>

NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

A10 FOUNDATIONS

A1010	Standard Foundations	\$591,789			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$336,779	\$928,568	\$8.46	2.9%

A20 BASEMENT CONSTRUCTION

A2010	Basement Excavation	\$0			
A2020	Basement Walls	\$0	\$0	\$0.00	0.0%

B10 SUPERSTRUCTURE

B1010	Upper Floor Construction	\$3,481,867			
B1020	Roof Construction	\$854,020	\$4,335,887	\$39.49	13.4%

B20 EXTERIOR CLOSURE

B2010	Exterior Walls	\$2,899,302			
B2020	Windows	\$2,039,623			
B2030	Exterior Doors	\$73,680	\$5,012,605	\$45.65	15.5%

B30 ROOFING

B3010	Roof Coverings	\$682,080			
B3020	Roof Openings	\$251,000	\$933,080	\$8.50	2.9%

C10 INTERIOR CONSTRUCTION

C1010	Partitions	\$2,855,060			
C1020	Interior Doors	\$549,050			
C1030	Specialties/Millwork	\$1,025,359	\$4,429,469	\$40.34	13.7%

C20 STAIRCASES

C2010	Stair Construction	\$484,000			
C2020	Stair Finishes	\$75,446	\$559,446	\$5.09	1.7%

C30 INTERIOR FINISHES

C3010	Wall Finishes	\$1,098,100			
C3020	Floor Finishes	\$1,471,454			
C3030	Ceiling Finishes	\$768,670	\$3,338,224	\$30.40	10.3%

D10 CONVEYING SYSTEMS

D1010	Elevator	\$400,000	\$400,000	\$3.64	1.2%
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OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET					
D20 PLUMBING					
D20	Plumbing	\$1,437,415	\$1,437,415	\$13.09	4.5%
D30 HVAC					
D30	HVAC	\$4,957,374	\$4,957,374	\$45.15	15.4%
D40 FIRE PROTECTION					
D40	Fire Protection	\$494,145	\$494,145	\$4.50	1.5%
D50 ELECTRICAL					
D5010	Complete System	\$3,854,333	\$3,854,333	\$35.10	11.9%
E10 EQUIPMENT					
E10	Equipment	\$345,000	\$345,000	\$3.14	1.1%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$1,235,850			
E2020	Movable Furnishings	NIC	\$1,235,850	\$11.25	3.8%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$0			
F2020	Hazardous Components Abatement	\$0	\$0	\$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)			\$32,261,396	\$293.79	100.0%

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

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GROSS FLOOR AREA CALCULATION

First Floor	24,360
Second Floor	23,130
Third floor	23,130
Fourth floor	22,570
Fifth floor	16,620

TOTAL GROSS FLOOR AREA (GFA)	109,810 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	1,400	sf	12.00	16,800
Re-bar	7,000	lbs.	1.32	9,240
Concrete material; 3,000 psi	71	cy	132.00	9,372
Placing concrete	71	cy	90.00	6,390

Foundation wall; 14" thick x 36" high

Formwork	4,200	sf	17.00	71,400
Re-bar	8,400	lbs.	1.32	11,088
Concrete material; 3,000 psi	100	cy	132.00	13,200
Placing concrete	100	cy	90.00	9,000

Grade Beam at interior; 2'-0" wide x 2'-0" deep

Formwork	1,000	sf	12.00	12,000
Re-bar	16,250	lbs.	1.32	21,450
Concrete material; 3,000 psi	41	cy	132.00	5,412
Placing concrete	41	cy	90.00	3,690

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	1,725	sf	16.00	27,600
Re-bar	20,250	lbs.	1.32	26,730
Concrete material; 3,000 psi	202	cy	132.00	26,664
Placing concrete	202	cy	90.00	18,180
Set anchor bolts grout plates	60	ea	165.00	9,900

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	1,972	sf	16.00	31,552
Re-bar	16,240	lbs.	1.32	21,437
Concrete material; 3,000 psi	171	cy	132.00	22,572
Placing concrete	171	cy	90.00	15,390
Set anchor bolts grout plates	116	ea	165.00	19,140

Piers/Pilasters: 22" x 22"

Formwork 18" x 18"	696	sf	18.00	12,528
Re-bar	2,280	lbs	1.32	3,010
Concrete material; 3,000 psi	19	cy	132.00	2,508
Placing concrete	19	cy	150.00	2,850

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	2,100	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	2,100	sf	3.00	6,300
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OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

56	312000	EARTHWORK						
57		<u>Continuous footings</u>						
58		Excavation	519	cy	25.00	12,975		
59		Remove off site	519	cy	20.00	10,380		
60		Backfill with imported material	348	cy	38.00	13,224		
61		<u>Spread footings</u>						
62		Excavation	1,448	cy	25.00	36,200		
63		Remove off site	1,448	cy	20.00	28,960		
64		Backfill with imported material	1,075	cy	38.00	40,850		
65		<u>Grade Beams</u>						
66		Excavation	185	cy	25.00	4,625		
67		Remove off site	185	cy	20.00	3,700		
68		Backfill with imported material	144	cy	38.00	5,472		
69		SUBTOTAL				591,789		
70								
71	A1020	SPECIAL FOUNDATIONS						
72		SUBTOTAL						
73								
74	A1030	LOWEST FLOOR CONSTRUCTION						
75		<u>New Slab on grade, 5" thick</u>						
76		Gravel fill, 12"	902	cy	36.00	32,472		
77		Rigid insulation	24,360	sf	2.25	54,810		
78		Vapor barrier	24,360	sf	0.75	18,270		
79		Compact existing sub-grade	24,360	sf	0.50	12,180		
80		Mesh reinforcing 15% lap	28,014	sf	0.80	22,411		
81		Concrete - 5" thick; 4,000 psi	398	cy	125.00	49,750		
82		Placing concrete	398	cy	45.00	17,910		
83		Finishing and curing concrete	24,360	sf	1.50	36,540		
84		Control joints - saw cut	24,360	sf	0.10	2,436		
85		<u>Miscellaneous</u>						
86		New Elevator pit	1	ea	35,000.00	35,000		
87		New loading dock	1	ls	40,000.00	40,000		
88		Equipment pads	1	ls	15,000.00	15,000		
89		SUBTOTAL				336,779		
90								
91		TOTAL - FOUNDATIONS					\$928,568	
92								
93								
94	A20	BASEMENT CONSTRUCTION						
95								
96	A2010	BASEMENT EXCAVATION						
97		SUBTOTAL						-
98								
99	A2020	BASEMENT WALLS						
100		SUBTOTAL						-
101								
102		TOTAL - BASEMENT CONSTRUCTION						
103								
104								
105	B10	SUPERSTRUCTURE						

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET								
106		14.79	lbs/sf		-			
107	B1010 FLOOR CONSTRUCTION	812	tns		-			
108	New Addition	85,450	sf					
109	<u>Floor Structure - Steel:</u>							
110	Steel beams and columns to new addition; 14.8#/SF	632	tns	3,500.00	2,212,000			
111	Premium for HSS	158	tns	300.00	47,400			
112	Shear studs	17,090	ea	2.50	42,725			
113	<u>Floor Structure</u>							
114	2" 18 Ga. Metal galvanized floor Deck	85,450	sf	3.75	320,438			
115	WWF reinforcement	98,268	sf	0.80	78,614			
116	Concrete Fill to metal deck; 6" Light Weight	1,994	cy	160.00	319,040			
117	Place and finish concrete	85,450	sf	2.00	170,900			
118	Rebar to decks	25,635	lbs	1.20	30,762			
119	Misc. angles	85,450	sf	0.50	42,725			
120	<u>Miscellaneous</u>							
121	Fire proofing to columns and beams	85,450	sf	2.25	192,263			
122	Fire stopping floors	1	ls	25,000.00	25,000			
123	SUBTOTAL					3,481,867		
124								
125	B1020 ROOF CONSTRUCTION							
126	New Addition	24,360	sf					
127	<u>Roof Structure - Steel:</u>							
128	Steel beams and columns to new addition; 14.8#/SF	180	tns	3,500.00	630,000			
129	Premium for HSS	45	tns	300.00	13,500			
130	<u>Roof Structure</u>							
131	Acoustic deck allowance	8,000	sf	7.00	56,000			
132	3" 20 Ga. galvanized Metal Roof Deck	16,360	sf	4.00	65,440			
133	<u>Miscellaneous</u>							
134	Concrete under RTU's	5,000	sf	8.00	40,000			
135	Fire proofing to columns, beams and deck	16,360	sf	3.00	49,080			
136	SUBTOTAL					854,020		
137								
138	TOTAL - SUPERSTRUCTURE						\$4,335,887	
139								
140								
141	B20 EXTERIOR CLOSURE							
142								
143	B2010 EXTERIOR WALLS							
144	Exterior Wall Area - Solid Assume 70%	36,750	sf					
145								
146	042000 MASONRY							
147	Brick veneer, 3 color; 85% of solid area	31,238	sf	40.00	1,249,520			
148	Staging to exterior wall	36,750	sf	4.00	147,000			
149								
150	055000 MISC. METALS							
151	Stainless steel sign at main entrance	1	ls	20,000.00	20,000			
152								
153								
154	070001 WATERPROOFING, DAMPPROOFING AND CAULKING							
155	Air barrier	36,750	sf	6.50	238,875			

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET								
156	Air barrier/flashing at windows	9,265	lf	6.25	57,906			
157	Miscellaneous sealants to closure	36,750	sf	1.00	36,750			
158								
159	072100 THERMAL INSULATION							
160	Insulation	36,750	sf	2.25	82,688			
161								
162	076400 CLADDING							
163	Metal panel; 15% of solid area	5,513	sf	75.00	413,475			
164	Roof equipment screen	1	ls	100,000.00	100,000			
165								
166	092900 GYPSUM BOARD ASSEMBLIES							
167	6" metal stud backup	36,750	sf	9.00	330,750			
168	Gypsum Sheathing	36,750	sf	2.75	101,063			
169	Drywall lining to interior face of stud backup	36,750	sf	3.30	121,275			
170								
171	SUBTOTAL					2,899,302		
172								
173	B2020 WINDOWS							
174	Exterior Wall Area - Glazed Assume 30%	15,750	sf					
175								
176	061000 ROUGH CARPENTRY							
177	Wood blocking at openings	9,265	lf	8.00	74,120			
178								
179	070001 WATERPROOFING, DAMPPROOFING AND CAULKING							
180	Backer rod & double sealant	9,265	lf	8.50	78,753			
181								
182	080001 METAL WINDOWS							
183	Windows, double glazed; 20% of glazed area	3,150	sf	90.00	283,500			
184	Curtainwall, double glazed; 80% of glazed area	12,600	sf	120.00	1,512,000			
185	Sunshades; horizontal	1	ls	75,000.00	75,000			
186								
187	089000 LOUVERS							
188	Louvers	250	sf	65.00	16,250			
189	SUBTOTAL					2,039,623		
190								
191	B2030 EXTERIOR DOORS							
192	Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000			
193	HM doors, frames and hardware- Double	4	pr	2,000.00	8,000			
194	Backer rod & double sealant	240	lf	4.00	960			
195	Wood blocking at openings	240	lf	3.00	720			
196	SUBTOTAL					73,680		
197								
198	TOTAL - EXTERIOR CLOSURE						\$5,012,605	
199								
200								
201	B30 ROOFING							
202								
203	B3010 ROOF COVERINGS							
204	New roofing complete	24,360	sf	28.00	682,080			
205	SUBTOTAL					682,080		
206								
207	B3020 ROOF OPENINGS							
208	Skylights, allow for atrium skylight	1,700	sf	130.00	221,000			

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET							
209	Smoke hatch	5	loc	5,000.00	25,000		
210	Roof hatch	2	loc	2,500.00	5,000		
211	SUBTOTAL					251,000	
TOTAL - ROOFING							\$933,080
C10 INTERIOR CONSTRUCTION							
C1010 PARTITIONS							
219	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	109,810	gsf	26.00	2,855,060		
220	SUBTOTAL					2,855,060	
C1020 INTERIOR DOORS							
223	Interior doors, frames and hardware	109,810	gsf	5.00	549,050		
224	SUBTOTAL					549,050	
C1030 SPECIALTIES / MILLWORK							
227	Toilet Partitions and accessories	109,810	gsf	0.80	87,848		
228	Backer panels in electrical closets	1	ls	1,000.00	1,000		
229	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	109,810	sf	1.00	109,810		
230	Room Signs	109,810	gsf	0.40	43,924		
231	Fire extinguisher cabinets	37	ea	350.00	12,950		
232	Lockers	109,810	gsf	1.60	175,696		
233	Janitors Work Shop Accessories	1	ls	1,500.00	1,500		
234	Janitors Closet Accessories	5	rms	300.00	1,500		
<i>Media</i>							
236	Reception desks	4	loc	25,000	100,000		
237	Railings to open to below areas	462	lf	350	161,700		
238	Library shelving at perimeters 7' Tall				F,F & E		
239	Library shelving at perimeters 3' Tall				F,F & E		
240	Display cases	109,810	gsf	0.25	27,453		
241	Miscellaneous metals throughout building	109,810	sf	1.50	164,715		
242	Miscellaneous sealants throughout building	109,810	sf	1.25	137,263		
243	SUBTOTAL					1,025,359	
TOTAL - INTERIOR CONSTRUCTION							\$4,429,469
C20 STAIRCASES							
C2010 STAIR CONSTRUCTION							
251	Metal pan stair; egress stair	12	flt	25,000.00	300,000		
252	Main staircase	1	flt	100,000.00	100,000		
253	Commons tiered seating	200	lf	250.00	50,000		
254	Commons steps	2	loc	5,000.00	10,000		
255	Concrete fill to stairs	12	flt	2,000.00	24,000		
256	SUBTOTAL					484,000	
C2020 STAIR FINISHES							

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET								
259	High performance coating to stairs including all railings etc.	12	flt	3,000.00	36,000			
260	Rubber tile at stairs - landings	1,200	sf	10.00	12,000			
261	Rubber tile at stairs - treads & risers	1,440	lft	19.06	27,446			
262	SUBTOTAL					75,446		
263								
264	TOTAL - STAIRCASES							\$559,446
265								
266								
267	C30 INTERIOR FINISHES							
268								
269	C3010 WALL FINISHES							
270	Wall finishes	109,810	sf	10.00	1,098,100			
271	SUBTOTAL					1,098,100		
272								
273	C3020 FLOOR FINISHES							
274	Floor finishes	109,810	sf	11.00	1,207,910			
275	Moisture mitigation	87,848	sf	3.00	263,544			
276	SUBTOTAL					1,471,454		
277								
278	C3030 CEILING FINISHES							
279	Ceiling finishes	109,810	sf	7.00	768,670			
280	SUBTOTAL					768,670		
281								
282	TOTAL - INTERIOR FINISHES							\$3,338,224
283								
284								
285	D10 CONVEYING SYSTEMS							
286								
287	D1010 ELEVATOR							
288	New elevator; 5 stop; oversize; 5,000 lbs	2	ea	200,000.00	400,000			
289	SUBTOTAL					400,000		
290								
291	TOTAL - CONVEYING SYSTEMS							\$400,000
292								
293								
294	D20 PLUMBING							
295								
296	D20 PLUMBING, GENERALLY							
297	<u>Equipment</u>							
298	Plumbing equipment	109,810	sf	2.00	219,620			
299	<u>Plumbing Fixtures & Specialties</u>							
300	Miscellaneous plumbing fixtures	109,810	sf	1.00	109,810			
301	<u>Domestic Water Type L Copper Pipe</u>							
302	Domestic water pipe with fittings & hangers	109,810	sf	2.50	274,525			
303	Domestic water pipe insulation	109,810	sf	1.50	164,715			
304	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
305	Sanitary waste pipe with fittings & hangers	109,810	sf	2.35	258,054			
306	Kitchen waste pipe with fittings & hangers	109,810	sf	0.30	32,943			
307	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
308	Acid waste & vent pipe with fittings & hangers	109,810	sf	0.75	82,358			
309	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
310	Storm water pipe with fittings & hangers	109,810	sf	1.25	137,263			
311	Pipe insulation on horizontal runs	109,810	sf	0.20	21,962			

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

312	<u>Gas And Fuel Distribution Pipe</u>						
313	Gas pipe with fittings & hangers	109,810	sf	0.75	82,358		
314	<u>Miscellaneous</u>						
315	Coordination & BIM	109,810	sf	0.25	27,453		
316	Coring, sleeves & firestopping	109,810	sf	0.03	3,294		
317	Commissioning support	109,810	sf	0.08	8,785		
318	Fees & permits	109,810	sf	0.13	14,275		
319	SUBTOTAL					1,437,415	

TOTAL - PLUMBING						\$1,437,415
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D30 HVAC

D30 HVAC, GENERALLY

327	<u>HVAC Equipment</u>						
328	HVAC equipment	109,810	sf	1.00	109,810		
329	<u>Pumps</u>						
330	Pumps	109,810	sf	0.28	30,747		
331	<u>Air distribution</u>						
332	RTU's Gas fired heating with DX cooling	208,639	cfm	9.25	1,929,911		
333	Air distribution equipment	109,810	sf	6.00	658,860		
334	Exhaust fans	109,810	sf	0.50	54,905		
335	<u>Sheet metal & Accessories</u>						
336	Sheet metal & accessories	109,810	sf	9.00	988,290		
337	<u>Piping</u>						
338	<u>Hot Water Piping</u>						
339	Hot water piping with fittings & hangers	109,810	sf	2.00	219,620		
340	<u>Chilled Water Piping</u>						
341	Chilled water piping with fittings & hangers	109,810	sf	0.55	60,396		
342	<u>Refrigerant Piping</u>						
343	Refrigerant piping with fittings & hangers	109,810	sf	0.10	10,981		
344	<u>Condensate Drain Piping</u>						
345	Condensate drain piping with fittings & hangers	109,810	sf	0.15	16,472		
346	<u>Piping Insulation</u>						
347	Piping insulation	109,810	sf	1.50	164,715		
348	<u>Automatic Temperature Controls</u>						
349	Automatic temperature controls DDC	109,810	sf	4.50	494,145		
350	Balancing						
351	System testing & balancing	109,810	sf	0.60	65,886		
352	<u>Miscellaneous</u>						
353	Commissioning support	109,810	sf	0.42	46,120		
354	Coring, sleeves & fire stopping	109,810	sf	0.17	18,668		
355	Rigging & equipment rental	109,810	sf	0.42	46,120		
356	Vibration & seismic restraints	109,810	sf	0.38	41,728		
357	SUBTOTAL					4,957,374	

TOTAL - HVAC						\$4,957,374
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D40 FIRE PROTECTION

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

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D40 FIRE PROTECTION, GENERALLY

Fire protection system	109,810	gsf	4.50	494,145		
SUBTOTAL					494,145	

TOTAL - FIRE PROTECTION						\$494,145
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D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

Normal power distribution switchgear & feeders	109,810	sf	5.00	549,050		
<u>Emergency power</u>						
Emergency power distribution switchgear & feeders	109,810	sf	4.00	439,240		

Equipment Wiring

Equipment wiring	109,810	sf	2.00	219,620		
SUBTOTAL					1,207,910	

D5020 LIGHTING & POWER

Lighting & Branch Power

Lighting fixtures (LED as BOD) with installation labor	109,810	sf	5.00	549,050		
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Lighting control system

Lighting controls including daylight harvesting system, allow	109,810	sf	1.15	126,282		
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Branch devices

Branch devices	109,810	sf	0.50	54,905		
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Lighting and branch circuitry

Lighting & branch circuitry	109,810	sf	5.50	603,955		
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SUBTOTAL					1,334,192	
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D5030 COMMUNICATION & SECURITY SYSTEMS

Fire Alarm

Fire alarm system	109,810	sf	2.00	219,620		
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Bi-Directional System

BDA system	109,810	sf	0.50	54,905		
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Security System

Security System	109,810	sf	2.50	274,525		
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Telephone/Data/CATV

Network switches, PBX, IP, VP, CCTV (By owner)					By Owner	
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Telecommunications rough in	109,810	sf	1.50	164,715		
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Telecommunications devices and cabling	109,810	sf	2.00	219,620		
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Public Address/Clock System

PA/Master Clock system	109,810	sf	1.25	137,263		
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Audio Visual (rough-in and power only)

AV equipment					By Owner	
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Rough-In conduit and backboxes only	109,810	sf	0.50	54,905		
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SUBTOTAL					1,125,553	
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D5040 OTHER ELECTRICAL SYSTEMS

OPTION 4A & 4B: Stand-alone Cypress Building



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

415	Miscellaneous							
416	Temp power and lights	109,810	sf	0.45	49,415			
417	Lightning Protection System, UL Master label	109,810	sf	0.45	49,415			
418	Fees & Permits	109,810	ls	0.80	87,848			
419	SUBTOTAL					186,678		
421	TOTAL - ELECTRICAL						\$3,854,333	

E10 EQUIPMENT

426	E10 EQUIPMENT, GENERALLY							
427	Kiln	2	ea	5,000.00	10,000			
428	Food Service equipment	1	ls	300,000.00	300,000			
429	Loading dock equipment	1	ls	20,000.00	20,000			
431	Electrically operated projection screens	1	loc	15,000.00	15,000			
432	SUBTOTAL					345,000		
434	TOTAL - EQUIPMENT						\$345,000	

E20 FURNISHINGS

439	E2010 FIXED FURNISHINGS							
440	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500			
441	Window blinds	15,750	sf	7.00	110,250			
442	Counters, base cabinets, tall storage in classrooms and other rooms	109,810	gsf	10.00	1,098,100			
443	SUBTOTAL					1,235,850		
446	E2020 MOVABLE FURNISHINGS							
447	All movable furnishings to be provided and installed by owner						NIC	
447	SUBTOTAL						NIC	
449	TOTAL - FURNISHINGS						\$1,235,850	

F10 SPECIAL CONSTRUCTION

454	F10 SPECIAL CONSTRUCTION							
455	No items in this section							
456	SUBTOTAL							
458	TOTAL - SPECIAL CONSTRUCTION							

F20 SELECTIVE BUILDING DEMOLITION

463	F2010 BUILDING ELEMENTS DEMOLITION						
464	SUBTOTAL						-
466	F2020 HAZARDOUS COMPONENTS ABATEMENT						
467	See main summary for HazMat allowance					See Summary	
468	SUBTOTAL						

Feasibility Estimate - Option 4

GFA 109,810

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET

470	TOTAL - SELECTIVE BUILDING DEMOLITION							
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OPTION 4C & 4D: Stand-alone
Cypress Building and at Tappan
Street over the MBTA

OPTION 4C & 4D: Stand-alone Cypress Building and over the



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 112,700

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$899,300			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$329,632	\$1,228,932	\$10.90	3.6%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$398,400			
A2020	Basement Walls	\$565,889	\$964,289	\$8.56	2.9%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$3,819,980			
B1020	Roof Construction	\$1,108,500	\$4,928,480	\$43.73	14.6%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$2,639,318			
B2020	Windows	\$1,857,407			
B2030	Exterior Doors	\$73,680	\$4,570,405	\$40.55	13.5%
B30 ROOFING					
B3010	Roof Coverings	\$772,800			
B3020	Roof Openings	\$5,000	\$777,800	\$6.90	2.3%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$2,930,200			
C1020	Interior Doors	\$563,500			
C1030	Specialties/Millwork	\$883,660	\$4,377,360	\$38.84	13.0%
C20 STAIRCASES					
C2010	Stair Construction	\$297,000			
C2020	Stair Finishes	\$69,159	\$366,159	\$3.25	1.1%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$1,127,000			
C3020	Floor Finishes	\$1,510,180			
C3030	Ceiling Finishes	\$788,900	\$3,426,080	\$30.40	10.1%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$400,000	\$400,000	\$3.55	1.2%
D20 PLUMBING					
D20	Plumbing	\$1,475,243	\$1,475,243	\$13.09	4.4%

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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GFA 112,700

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA					
D30 HVAC					
D30	HVAC	\$5,087,842	\$5,087,842	\$45.15	15.1%
D40 FIRE PROTECTION					
D40	Fire Protection	\$507,150	\$507,150	\$4.50	1.5%
D50 ELECTRICAL					
D5010	Complete System	\$3,955,770	\$3,955,770	\$35.10	11.7%
E10 EQUIPMENT					
E10	Equipment	\$435,000	\$435,000	\$3.86	1.3%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$1,254,439			
E2020	Movable Furnishings	NIC	\$1,254,439	\$11.13	3.7%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$0			
F2020	Hazardous Components Abatement	\$0	\$0	\$0.00	0.0%
TOTAL DIRECT COST (Trade Costs)			\$33,754,949	\$299.51	100.0%

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

GROSS FLOOR AREA CALCULATION

Basement	8,100
First Floor	27,600
Second Floor	27,500
Third floor	27,500
Fourth floor	22,000

TOTAL GROSS FLOOR AREA (GFA)	112,700 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	1,400	sf	12.00	16,800
Re-bar	7,000	lbs.	1.32	9,240
Concrete material; 3,000 psi	71	cy	132.00	9,372
Placing concrete	71	cy	90.00	6,390

Foundation wall; 14" thick x 36" high

Formwork	4,200	sf	17.00	71,400
Re-bar	8,400	lbs.	1.32	11,088
Concrete material; 3,000 psi	100	cy	132.00	13,200
Placing concrete	100	cy	90.00	9,000

Grade Beam at interior; 2'-0" wide x 2'-0" deep

Formwork	1,000	sf	12.00	12,000
Re-bar	16,250	lbs.	1.32	21,450
Concrete material; 3,000 psi	41	cy	132.00	5,412
Placing concrete	41	cy	90.00	3,690

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	5,175	sf	16.00	82,800
Re-bar	60,750	lbs.	1.32	80,190
Concrete material; 3,000 psi	606	cy	132.00	79,992
Placing concrete	606	cy	90.00	54,540
Set anchor bolts grout plates	45	ea	165.00	7,425

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	3,672	sf	16.00	58,752
Re-bar	30,240	lbs.	1.32	39,917
Concrete material; 3,000 psi	318	cy	132.00	41,976
Placing concrete	318	cy	90.00	28,620
Set anchor bolts grout plates	54	ea	165.00	8,910

Piers/Pilasters; 22" x 22"

Formwork 18" x 18"	1,296	sf	18.00	23,328
Re-bar	4,200	lbs	1.32	5,544
Concrete material; 3,000 psi	35	cy	132.00	4,620
Placing concrete	35	cy	150.00	5,250

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	2,100	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	2,100	sf	3.00	6,300
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OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

56	312000	<u>EARTHWORK</u>					
57		<u>Continuous footings</u>					
58		Excavation	519	cy	25.00	12,975	
59		Remove off site	519	cy	20.00	10,380	
60		Backfill with imported material	348	cy	38.00	13,224	
61		<u>Spread footings</u>					
62		Excavation	2,010	cy	25.00	50,250	
63		Remove off site	2,010	cy	20.00	40,200	
64		Backfill with imported material	1,086	cy	38.00	41,268	
65		<u>Grade Beams</u>					
66		Excavation	185	cy	25.00	4,625	
67		Remove off site	185	cy	20.00	3,700	
68		Backfill with imported material	144	cy	38.00	5,472	
69		SUBTOTAL				899,300	
70							
71	A1020	SPECIAL FOUNDATIONS					
72		SUBTOTAL					
73							
74	A1030	LOWEST FLOOR CONSTRUCTION					
75		<u>New Slab on grade, 5" thick</u>					
76		Gravel fill, 12"	748	cy	36.00	26,928	
77		Rigid insulation	20,200	sf	2.25	45,450	
78		Vapor barrier	20,200	sf	0.75	15,150	
79		Compact existing sub-grade	20,200	sf	0.50	10,100	
80		Mesh reinforcing 15% lap	23,230	sf	0.80	18,584	
81		Concrete - 5" thick; 4,000 psi	330	cy	125.00	41,250	
82		Placing concrete	330	cy	45.00	14,850	
83		Finishing and curing concrete	20,200	sf	1.50	30,300	
84		Control joints - saw cut	20,200	sf	0.10	2,020	
85		<u>Miscellaneous</u>					
86		New Elevator pit	2	ea	35,000.00	70,000	
87		New loading dock	1	ls	40,000.00	40,000	
88		Equipment pads	1	ls	15,000.00	15,000	
89		SUBTOTAL				329,632	
90							
91		TOTAL - FOUNDATIONS					\$1,228,932
92							
93							
94	A20	BASEMENT CONSTRUCTION					
95							
96	A2010	BASEMENT EXCAVATION					
97		Excavation for basement	3,375	cy	12.00	40,500	
98		Export off site	3,375	cy	20.00	67,500	
99		Temporary for sheeting and shoring - allowance	5,280	sf	55.00	290,400	
100		SUBTOTAL				398,400	
101							
102	A2020	BASEMENT WALLS					
103		<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>					
104		Formwork	1,320	sf	12.00	15,840	
105		Re-bar	6,600	lbs.	1.32	8,712	

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA								
106	Concrete material; 3,000 psi	67	cy	132.00	8,844			
107	Placing concrete	67	cy	90.00	6,030			
108	<u>Basement wall; 14" thick</u>							
109	Formwork	21,120	sf	17.00	359,040			
110	Re-bar	42,240	lbs.	1.32	55,757			
111	Concrete material; 3,000 psi	503	cy	132.00	66,396			
112	Placing concrete	503	cy	90.00	45,270			
113	SUBTOTAL					565,889		
114								
115	TOTAL - BASEMENT CONSTRUCTION						\$964,289	
116								
117								
118	B10 SUPERSTRUCTURE							
119		15.78	lbs/sf					
120	B1010 FLOOR CONSTRUCTION	889	tns					
121	New Addition	92,500	sf					
122	<u>Floor Structure - Steel:</u>							
123	Steel beams and columns to new addition; 14.8#/SF	685	tns	3,500.00	2,397,500			
124	Premium for HSS	171	tns	300.00	51,300			
125	Shear studs	18,500	ea	2.50	46,250			
126	<u>Floor Structure</u>							
127	2" 18 Ga. Metal galvanized floor Deck	92,500	sf	3.75	346,875			
128	WWF reinforcement	106,375	sf	0.80	85,100			
129	Concrete Fill to metal deck; 6" Light Weight	2,158	cy	160.00	345,280			
130	Place and finish concrete	92,500	sf	2.00	185,000			
131	Rebar to decks	27,750	lbs	1.20	33,300			
132	Misc. angles	92,500	sf	0.50	46,250			
133	<u>Miscellaneous</u>							
134	Fire proofing to columns and beams	92,500	sf	2.25	208,125			
135	Intumescent paint	1	ls	50,000.00	50,000			
136	Fire stopping floors	1	ls	25,000.00	25,000			
137	SUBTOTAL					3,819,980		
138								
139	B1020 ROOF CONSTRUCTION	14.78	lbs/sf					
140	New Addition	27,600	sf					
141	<u>Roof Structure - Steel:</u>							
142	Steel beams and columns to new addition; 14.8#/SF	204	tns	3,500.00	714,000			
143	Premium for HSS	51	tns	300.00	15,300			
144	Exposed steel	1	ls	50,000.00	50,000			
145	<u>Roof Structure</u>							
146	Acoustic deck allowance	4,000	sf	11.00	44,000			
147	3" 20 Ga. galvanized Metal Roof Deck	23,600	sf	4.00	94,400			
148	<u>Miscellaneous</u>							
149	Concrete under RTU's	15,000	sf	8.00	120,000			
150	Fire proofing to columns, beams and deck	23,600	sf	3.00	70,800			
151	SUBTOTAL					1,108,500		
152								
153	TOTAL - SUPERSTRUCTURE						\$4,928,480	
154								

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Exterior Wall Area - Solid Assume 70%

33,313 sf

042000 MASONRY

Brick veneer, 3 color; 85% of solid area

28,316 sf 40.00 1,132,640

Staging to exterior wall

33,313 sf 4.00 133,252

055000 MISC. METALS

Stainless steel sign at main entrance

1 ls 20,000.00 20,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Air barrier

33,313 sf 6.50 216,535

Air barrier/flashing at windows

8,398 lf 6.25 52,488

Miscellaneous sealants to closure

33,313 sf 1.00 33,313

072100 THERMAL INSULATION

Insulation

33,313 sf 2.25 74,954

076400 CLADDING

Metal panel; 15% of solid area

4,997 sf 75.00 374,775

Roof equipment screen

1 ls 100,000.00 100,000

092900 GYPSUM BOARD ASSEMBLIES

6" metal stud backup

33,313 sf 9.00 299,817

Gypsum Sheathing

33,313 sf 2.75 91,611

Drywall lining to interior face of stud backup

33,313 sf 3.30 109,933

SUBTOTAL

2,639,318

B2020 WINDOWS

Exterior Wall Area - Glazed Assume 30%

14,277 sf

061000 ROUGH CARPENTRY

Wood blocking at openings

8,398 lf 8.00 67,184

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant

8,398 lf 8.50 71,383

080001 METAL WINDOWS

Windows, double glazed; 20% of glazed area

2,855 sf 90.00 256,950

Curtainwall, double glazed; 80% of glazed area

11,422 sf 120.00 1,370,640

Sunshades; horizontal

1 ls 75,000.00 75,000

089000 LOUVERS

Louvers

250 sf 65.00 16,250

SUBTOTAL

1,857,407

B2030 EXTERIOR DOORS

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

206	Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000		
207	HM doors, frames and hardware- Double	4	pr	2,000.00	8,000		
208	Backer rod & double sealant	240	lf	4.00	960		
209	Wood blocking at openings	240	lf	3.00	720		
210	SUBTOTAL					73,680	

TOTAL - EXTERIOR CLOSURE						\$4,570,405
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B30 ROOFING

B3010 ROOF COVERINGS							
218	New roofing complete	27,600	sf	28.00	772,800		
219	SUBTOTAL					772,800	

B3020 ROOF OPENINGS							
222	Skylights				n/a		
223	Roof hatch	2	loc	2,500.00	5,000		
224	SUBTOTAL					5,000	

TOTAL - ROOFING						\$777,800
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C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS							
232	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	112,700	gsf	26.00	2,930,200		
233	SUBTOTAL					2,930,200	

C1020 INTERIOR DOORS							
236	Interior doors, frames and hardware	112,700	gsf	5.00	563,500		
237	SUBTOTAL					563,500	

C1030 SPECIALTIES / MILLWORK							
240	Toilet Partitions and accessories	112,700	gsf	0.80	90,160		
241	Backer panels in electrical closets	1	ls	1,000.00	1,000		
242	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	112,700	sf	1.00	112,700		
243	Room Signs	112,700	gsf	0.40	45,080		
244	Fire extinguisher cabinets	38	ea	350.00	13,300		
245	Lockers	112,700	gsf	1.60	180,320		
246	Janitors Work Shop Accessories	1	ls	1,500.00	1,500		
247	Janitors Closet Accessories	5	rms	300.00	1,500		
248	Media						
249	Reception desks	4	loc	25,000.00	100,000		
250	Library shelving					F,F & E	
251	Display cases	112,700	gsf	0.25	28,175		
252	Miscellaneous metals throughout building	112,700	sf	1.50	169,050		
253	Miscellaneous sealants throughout building	112,700	sf	1.25	140,875		
254	SUBTOTAL					883,660	

TOTAL - INTERIOR CONSTRUCTION						\$4,377,360
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OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

C20 STAIRCASES

C2010 STAIR CONSTRUCTION

Metal pan stair; egress stair	11	flt	25,000.00	275,000	
Main staircase				n/a	
Concrete fill to stairs	11	flt	2,000.00	22,000	
SUBTOTAL					297,000

C2020 STAIR FINISHES

High performance coating to stairs including all railings etc.	11	flt	3,000.00	33,000	
Rubber tile at stairs - landings	1,100	sf	10.00	11,000	
Rubber tile at stairs - treads & risers	1,320	lft	19.06	25,159	
SUBTOTAL					69,159

TOTAL - STAIRCASES

\$366,159

C30 INTERIOR FINISHES

C3010 WALL FINISHES

Wall finishes	112,700	sf	10.00	1,127,000	
SUBTOTAL					1,127,000

C3020 FLOOR FINISHES

Floor finishes	112,700	sf	11.00	1,239,700	
Moisture mitigation	90,160	sf	3.00	270,480	
SUBTOTAL					1,510,180

C3030 CEILING FINISHES

Ceiling finishes	112,700	sf	7.00	788,900	
SUBTOTAL					788,900

TOTAL - INTERIOR FINISHES

\$3,426,080

D10 CONVEYING SYSTEMS

D1010 ELEVATOR

New elevator; 5 stop; oversize; 5,000 lbs	2	ea	200,000.00	400,000	
SUBTOTAL					400,000

TOTAL - CONVEYING SYSTEMS

\$400,000

D20 PLUMBING

D20 PLUMBING, GENERALLY

<u>Equipment</u>					
Plumbing equipment	112,700	sf	2.00	225,400	
<u>Plumbing Fixtures & Specialties</u>					
Miscellaneous plumbing fixtures	112,700	sf	1.00	112,700	
<u>Domestic Water Type L Copper Pipe</u>					
Domestic water pipe with fittings & hangers	112,700	sf	2.50	281,750	

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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA								
312	Domestic water pipe insulation	112,700	sf	1.50	169,050			
313	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
314	Sanitary waste pipe with fittings & hangers	112,700	sf	2.35	264,845			
315	Kitchen waste pipe with fittings & hangers	112,700	sf	0.30	33,810			
316	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
317	Acid waste & vent pipe with fittings & hangers	112,700	sf	0.75	84,525			
318	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
319	Storm water pipe with fittings & hangers	112,700	sf	1.25	140,875			
320	Pipe insulation on horizontal runs	112,700	sf	0.20	22,540			
321	<u>Gas And Fuel Distribution Pipe</u>							
322	Gas pipe with fittings & hangers	112,700	sf	0.75	84,525			
323	<u>Miscellaneous</u>							
324	Coordination & BIM	112,700	sf	0.25	28,175			
325	Coring, sleeves & firestopping	112,700	sf	0.03	3,381			
326	Commissioning support	112,700	sf	0.08	9,016			
327	Fees & permits	112,700	sf	0.13	14,651			
328	SUBTOTAL					1,475,243		
329	TOTAL - PLUMBING							\$1,475,243
330								
331								
332								
333	D30 HVAC							
334								
335	D30 HVAC, GENERALLY							
336	<u>HVAC Equipment</u>							
337	HVAC equipment	112,700	sf	1.00	112,700			
338	<u>Pumps</u>							
339	Pumps	112,700	sf	0.28	31,556			
340	<u>Air distribution</u>							
341	RTU's Gas fired heating with DX cooling	214,130	cfm	9.25	1,980,703			
342	Air distribution equipment	112,700	sf	6.00	676,200			
343	Exhaust fans	112,700	sf	0.50	56,350			
344	<u>Sheet metal & Accessories</u>							
345	Sheet metal & accessories	112,700	sf	9.00	1,014,300			
346	<u>Piping</u>							
347	<u>Hot Water Piping</u>							
348	Hot water piping with fittings & hangers	112,700	sf	2.00	225,400			
349	<u>Chilled Water Piping</u>							
350	Chilled water piping with fittings & hangers	112,700	sf	0.55	61,985			
351	<u>Refrigerant Piping</u>							
352	Refrigerant piping with fittings & hangers	112,700	sf	0.10	11,270			
353	<u>Condensate Drain Piping</u>							
354	Condensate drain piping with fittings & hangers	112,700	sf	0.15	16,905			
355	<u>Piping Insulation</u>							
356	Piping insulation	112,700	sf	1.50	169,050			
357	<u>Automatic Temperature Controls</u>							
358	Automatic temperature controls DDC	112,700	sf	4.50	507,150			
359	Balancing							
360	System testing & balancing	112,700	sf	0.60	67,620			

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

361	<u>Miscellaneous</u>						
362	Commissioning support	112,700	sf	0.42	47,334		
363	Coring, sleeves & fire stopping	112,700	sf	0.17	19,159		
364	Rigging & equipment rental	112,700	sf	0.42	47,334		
365	Vibration & seismic restraints	112,700	sf	0.38	42,826		
366	SUBTOTAL					5,087,842	

TOTAL - HVAC						\$5,087,842
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D40 FIRE PROTECTION

371	D40 FIRE PROTECTION, GENERALLY						
374	Fire protection system	112,700	gsf	4.50	507,150		
375	SUBTOTAL					507,150	

TOTAL - FIRE PROTECTION						\$507,150
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D50 ELECTRICAL

383	D5010 SERVICE & DISTRIBUTION						
384	Gear & Distribution						
385	Normal power distribution switchgear & feeders based on 4000A 480/277V	112,700	sf	5.00	563,500		
386	<u>Emergency power</u>						
387	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	112,700	sf	4.00	450,800		
388	<u>Equipment Wiring</u>						
389	Equipment wiring	112,700	sf	2.00	225,400		
390	SUBTOTAL					1,239,700	

393	D5020 LIGHTING & POWER						
394	<u>Lighting & Branch Power</u>						
395	Lighting fixtures (LED as BOD) with installation labor	112,700	sf	5.00	563,500		
396	<u>Lighting control system</u>						
397	Lighting controls including daylight harvesting system, allow	112,700	sf	1.15	129,605		
398	<u>Branch devices</u>						
399	Branch devices	112,700	sf	0.50	56,350		
400	<u>Lighting and branch circuitry</u>						
401	Lighting & branch circuitry	112,700	sf	5.50	619,850		
402	SUBTOTAL					1,369,305	

405	D5030 COMMUNICATION & SECURITY SYSTEMS						
406	<u>Fire Alarm</u>						
407	Fire alarm system	112,700	sf	2.00	225,400		
408	<u>Bi-Directional System</u>						
409	BDA system	112,700	sf	0.50	56,350		
410	<u>Security System</u>						
411	Security System	112,700	sf	2.50	281,750		
412	<u>Telephone/Data/CATV</u>						

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 112,700

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

413	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner	
414	Telecommunications rough in	112,700	sf	1.50	169,050		
415	Telecommunications devices and cabling	112,700	sf	2.00	225,400		
416	Public Address/Clock System						
417	PA/Master Clock system	112,700	sf	1.25	140,875		
418	Audio Visual (rough-in and power only)						
419	AV equipment					By Owner	
420	Rough-In conduit and backboxes only	112,700	sf	0.50	56,350		
421	Auditorium					N/A	
422	Black Box Theater					N/A	
423	White Box Theater					N/A	
424	Gymnasium					N/A	
425	SUBTOTAL					1,155,175	
426							
427	D5040 OTHER ELECTRICAL SYSTEMS						
428	Miscellaneous						
429	Temp power and lights	112,700	sf	0.45	50,715		
430	Lightning Protection System, UL Master label	112,700	sf	0.45	50,715		
431	Fees & Permits	112,700	sf	0.80	90,160		
432	SUBTOTAL					191,590	
433							
434	TOTAL - ELECTRICAL						\$3,955,770
435							
436							
437	E10 EQUIPMENT						
438							
439	E10 EQUIPMENT, GENERALLY						
440	Kiln	2	ea	5,000.00	10,000		
441	Science classroom equipment - allowance	6	ea	15,000.00	90,000		
442	Food Service equipment	1	ls	300,000.00	300,000		
443	Loading dock equipment	1	ls	20,000.00	20,000		
444	Theatrical Equipment Stage curtains, rigging and controls					N/A	
445	Electrically operated projection screens	1	loc	15,000.00	15,000		
446	SUBTOTAL					435,000	
447							
448	TOTAL - EQUIPMENT						\$435,000
449							
450							
451	E20 FURNISHINGS						
452							
453	E2010 FIXED FURNISHINGS						
454	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500		
455	Window blinds	14,277	sf	7.00	99,939		
456	Theatrical seating					N/A	
457	Counters, base cabinets, tall storage in classrooms and other rooms	112,700	gsf	10.00	1,127,000		
458	SUBTOTAL					1,254,439	
459							
460	E2020 MOVABLE FURNISHINGS						
461	All movable furnishings to be provided and installed by owner						
462	SUBTOTAL						NIC

OPTION 4C & 4D: Stand-alone Cypress Building over the MBTA



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 112,700

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW CONSTRUCTION; 9TH GRADE ACADEMY AT CYPRESS STREET & MBTA

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TOTAL - FURNISHINGS							\$1,254,439
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F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION
No items in this section
SUBTOTAL

TOTAL - SPECIAL CONSTRUCTION

F20 SELECTIVE BUILDING DEMOLITION
--

F2010 BUILDING ELEMENTS DEMOLITION
No items in this section
SUBTOTAL

F2020 HAZARDOUS COMPONENTS ABATEMENT
See main summary for HazMat allowance
SUBTOTAL

See Summary

TOTAL - SELECTIVE BUILDING DEMOLITION
--

OPTION 4A & 4C:

New (5) Classroom Addition at
the BHS Main Campus Building

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
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5-CLASSROOM ADDITION AT MAIN BHS CAMPUS

A10 FOUNDATIONS

A1010	Standard Foundations	\$230,925		
A1020	Special Foundations	\$0		
A1030	Lowest Floor Construction	\$71,378	\$302,303	\$44.46 11.1%

A20 BASEMENT CONSTRUCTION

A2010	Basement Excavation	\$0		
A2020	Basement Walls	\$0	\$0	\$0.00 0.0%

B10 SUPERSTRUCTURE

B1010	Upper Floor Construction	\$0		
B1020	Roof Construction	\$238,500	\$238,500	\$35.07 8.8%

B20 EXTERIOR CLOSURE

B2010	Exterior Walls	\$359,978		
B2020	Windows	\$280,610		
B2030	Exterior Doors	\$10,700	\$651,288	\$95.78 24.0%

B30 ROOFING

B3010	Roof Coverings	\$190,400		
B3020	Roof Openings	\$0	\$190,400	\$28.00 7.0%

C10 INTERIOR CONSTRUCTION

C1010	Partitions	\$176,800		
C1020	Interior Doors	\$34,000		
C1030	Specialties/Millwork	\$53,990	\$264,790	\$38.94 9.8%

C20 STAIRCASES

C2010	Stair Construction	\$0		
C2020	Stair Finishes	\$0	\$0	\$0.00 0.0%

C30 INTERIOR FINISHES

C3010	Wall Finishes	\$68,000		
C3020	Floor Finishes	\$91,120		
C3030	Ceiling Finishes	\$47,600	\$206,720	\$30.40 7.6%

D10 CONVEYING SYSTEMS

D1010	Elevator	\$0	\$0	\$0.00 0.0%
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D20 PLUMBING

D20	Plumbing	\$89,012	\$89,012	\$13.09 3.3%
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OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS					
D30 HVAC					
D30	HVAC	\$306,986	\$306,986	\$45.15	11.3%
D40 FIRE PROTECTION					
D40	Fire Protection	\$30,600	\$30,600	\$4.50	1.1%
D50 ELECTRICAL					
D5010	Complete System	\$238,680	\$238,680	\$35.10	8.8%
E10 EQUIPMENT					
E10	Equipment	\$0	\$0	\$0.00	0.0%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$164,280			
E2020	Movable Furnishings	NIC	\$164,280	\$24.16	6.1%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$30,000			
F2020	Hazardous Components Abatement	\$0	\$30,000	\$4.41	1.1%
TOTAL DIRECT COST (Trade Costs)			\$2,713,559	\$399.05	100.0%

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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5-CLASSROOM ADDITION AT MAIN BHS CAMPUS

GROSS FLOOR AREA CALCULATION

First Floor 6,800

TOTAL GROSS FLOOR AREA (GFA)	6,800 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	800	sf	12.00	9,600
Re-bar	4,000	lbs.	1.32	5,280
Concrete material; 3,000 psi	41	cy	132.00	5,412
Placing concrete	41	cy	90.00	3,690

Foundation wall; 14" thick x 36" high

Formwork	2,400	sf	17.00	40,800
Re-bar	4,800	lbs.	1.32	6,336
Concrete material; 3,000 psi	57	cy	132.00	7,524
Placing concrete	57	cy	90.00	5,130

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	575	sf	16.00	9,200
Re-bar	6,750	lbs.	1.32	8,910
Concrete material; 3,000 psi	67	cy	132.00	8,844
Placing concrete	67	cy	90.00	6,030
Set anchor bolts grout plates	5	ea	165.00	825

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	1,088	sf	16.00	17,408
Re-bar	8,960	lbs.	1.32	11,827
Concrete material; 3,000 psi	94	cy	132.00	12,408
Placing concrete	94	cy	90.00	8,460
Set anchor bolts grout plates	16	ea	165.00	2,640

Piers/Pilasters; 22" x 22"

Formwork 18" x 18"	384	sf	18.00	6,912
Re-bar	1,200	lbs	1.32	1,584
Concrete material; 3,000 psi	10	cy	132.00	1,320
Placing concrete	10	cy	150.00	1,500

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	1,200	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	1,200	sf	3.00	3,600
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312000 EARTHWORK

Continuous footings

Excavation	296	cy	25.00	7,400
Remove off site	296	cy	20.00	5,920
Backfill with imported material	198	cy	38.00	7,524

Spread footings

Excavation	373	cy	25.00	9,325
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OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS								
54	Remove off site	373	cy	20.00	7,460			
55	Backfill with imported material	212	cy	38.00	8,056			
56	SUBTOTAL					230,925		
57								
58	A1020 SPECIAL FOUNDATIONS							
59	SUBTOTAL							
60								
61	A1030 LOWEST FLOOR CONSTRUCTION							
62	<u>New Slab on grade, 5" thick</u>							
63	Gravel fill, 12"	252	cy	36.00	9,072			
64	Rigid insulation	6,800	sf	2.25	15,300			
65	Vapor barrier	6,800	sf	0.75	5,100			
66	Compact existing sub-grade	6,800	sf	0.50	3,400			
67	Mesh reinforcing 15% lap	7,820	sf	0.80	6,256			
68	Concrete - 5" thick; 4,000 psi	111	cy	125.00	13,875			
69	Placing concrete	111	cy	45.00	4,995			
70	Finishing and curing concrete	6,800	sf	1.50	10,200			
71	Control joints - saw cut	6,800	sf	0.10	680			
72	<u>Miscellaneous</u>							
73	Equipment pads	1	ls	2,500.00	2,500			
74	SUBTOTAL					71,378		
75								
76	TOTAL - FOUNDATIONS							\$302,303
77								
78								
79	A20 BASEMENT CONSTRUCTION							
80								
81	A2010 BASEMENT EXCAVATION							
82	No work in this section							
83	SUBTOTAL						-	
84								
85	A2020 BASEMENT WALLS							
86	No work in this section							
87	SUBTOTAL						-	
88								
89	TOTAL - BASEMENT CONSTRUCTION							
90								
91								
92	B10 SUPERSTRUCTURE							
93								
94	B1010 FLOOR CONSTRUCTION							
95	No work in this section							
96	SUBTOTAL						-	
97								
98	B1020 ROOF CONSTRUCTION	14.71	lbs/sf					
99	New Addition	6,800	sf					
100	<u>Roof Structure - Steel:</u>							
101	Steel beams and columns to new addition; 14.8#/SF	50	tns	3,500.00	175,000			
102	Premium for HSS	13	tns	300.00	3,900			
103	<u>Roof Structure</u>							

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS							
104	3" 20 Ga. galvanized Metal Roof Deck	6,800	sf	4.00	27,200		
105	Miscellaneous						
106	Concrete under RTU's	1,500	sf	8.00	12,000		
107	Fire proofing to columns, beams and deck	6,800	sf	3.00	20,400		
108	SUBTOTAL					238,500	
TOTAL - SUPERSTRUCTURE							\$238,500
B20 EXTERIOR CLOSURE							
B2010 EXTERIOR WALLS							
Exterior Wall Area - Solid Assume 70%		4,760	sf				
<i>042000 MASONRY</i>							
119	Brick veneer, 3 color; 85% of solid area	4,046	sf	40.00	161,840		
120	Staging to exterior wall	4,760	sf	4.00	19,040		
<i>055000 MISC. METALS</i>							
No work in this section							
<i>070001 WATERPROOFING, DAMPPROOFING AND CAULKING</i>							
126	Air barrier	4,760	sf	6.50	30,940		
127	Air barrier/flashing at windows	1,200	lf	6.25	7,500		
128	Miscellaneous sealants to closure	4,760	sf	1.00	4,760		
<i>072100 THERMAL INSULATION</i>							
131	Insulation	4,760	sf	2.25	10,710		
<i>076400 CLADDING</i>							
134	Metal panel; 15% of solid area	714	sf	75.00	53,550		
135	Roof equipment screen					n/a	
<i>092900 GYPSUM BOARD ASSEMBLIES</i>							
138	6" metal stud backup	4,760	sf	9.00	42,840		
139	Gypsum Sheathing	4,760	sf	2.75	13,090		
140	Drywall lining to interior face of stud backup	4,760	sf	3.30	15,708		
142	SUBTOTAL					359,978	
B2020 WINDOWS							
Exterior Wall Area - Glazed Assume 30%		2,040	sf				
<i>061000 ROUGH CARPENTRY</i>							
148	Wood blocking at openings	1,200	lf	8.00	9,600		
<i>070001 WATERPROOFING, DAMPPROOFING AND CAULKING</i>							
151	Backer rod & double sealant	1,200	lf	8.50	10,200		
<i>080001 METAL WINDOWS</i>							
154	Windows, double glazed; 20% of glazed area	408	sf	90.00	36,720		
155	Curtainwall, double glazed; 80% of glazed area	1,632	sf	120.00	195,840		

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS								
156	Sunshades; horizontal	1	ls	25,000.00	25,000			
157								
158	089000 LOUVERS							
159	Louvers	50	sf	65.00	3,250			
160	SUBTOTAL					280,610		
161								
162	B2030 EXTERIOR DOORS							
163	HM doors, frames and hardware- Double	5	ea	2,000.00	10,000			
164	Backer rod & double sealant	100	lf	4.00	400			
165	Wood blocking at openings	100	lf	3.00	300			
166	SUBTOTAL					10,700		
167								
168	TOTAL - EXTERIOR CLOSURE						\$651,288	
169								
170								
171	B30 ROOFING							
172								
173	B3010 ROOF COVERINGS							
174	New roofing complete	6,800	sf	28.00	190,400			
175	SUBTOTAL					190,400		
176								
177	B3020 ROOF OPENINGS							
178	Skylights				n/a			
179	SUBTOTAL					-		
180								
181	TOTAL - ROOFING						\$190,400	
182								
183								
184	C10 INTERIOR CONSTRUCTION							
185								
186	C1010 PARTITIONS							
187	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	6,800	gsf	26.00	176,800			
188	SUBTOTAL					176,800		
189								
190	C1020 INTERIOR DOORS							
191	Interior doors, frames and hardware	6,800	gsf	5.00	34,000			
192	SUBTOTAL					34,000		
193								
194	C1030 SPECIALTIES / MILLWORK							
195	Toilet Partitions and accessories	6,800	gsf	0.80	5,440			
196	Backer panels in electrical closets	1	ls	250.00	250			
197	Marker boards/tackboards in classrooms	6,800	sf	2.00	13,600			
198	Room Signs	6,800	gsf	0.40	2,720			
199	Fire extinguisher cabinets	2	ea	350.00	700			
200	Lockers	6,800	gsf	1.60	10,880			
201	Display cases	6,800	gsf	0.25	1,700			
202	Miscellaneous metals throughout building	6,800	sf	1.50	10,200			
203	Miscellaneous sealants throughout building	6,800	sf	1.25	8,500			
204	SUBTOTAL					53,990		
205								
206	TOTAL - INTERIOR CONSTRUCTION						\$264,790	
207								
208								
209	C20 STAIRCASES							
210								

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS								
211	C2010 STAIR CONSTRUCTION							
212	No work in this section							
213	SUBTOTAL					-		
214								
215	C2020 STAIR FINISHES							
216	No work in this section				-			
217	SUBTOTAL					-		
218								
219	TOTAL - STAIRCASES							
220								
221								
222	C30 INTERIOR FINISHES							
223								
224	C3010 WALL FINISHES							
225	Wall finishes	6,800	sf	10.00	68,000			
226	SUBTOTAL					68,000		
227								
228	C3020 FLOOR FINISHES							
229	Floor finishes	6,800	sf	11.00	74,800			
230	Moisture mitigation	5,440	sf	3.00	16,320			
231	SUBTOTAL					91,120		
232								
233	C3030 CEILING FINISHES							
234	Ceiling finishes	6,800	sf	7.00	47,600			
235	SUBTOTAL					47,600		
236								
237	TOTAL - INTERIOR FINISHES							\$206,720
238								
239								
240	D10 CONVEYING SYSTEMS							
241								
242	D1010 ELEVATOR							
243	No work in this section							
244	SUBTOTAL							
245								
246	TOTAL - CONVEYING SYSTEMS							
247								
248								
249	D20 PLUMBING							
250								
251	D20 PLUMBING, GENERALLY							
252	<u>Equipment</u>							
253	Plumbing equipment	6,800	sf	2.00	13,600			
254	<u>Plumbing Fixtures & Specialties</u>							
255	Miscellaneous plumbing fixtures	6,800	sf	1.00	6,800			
256	<u>Domestic Water Type L Copper Pipe</u>							
257	Domestic water pipe with fittings & hangers	6,800	sf	2.50	17,000			
258	Domestic water pipe insulation	6,800	sf	1.50	10,200			
259	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>							
260	Sanitary waste pipe with fittings & hangers	6,800	sf	2.35	15,980			
261	Kitchen waste pipe with fittings & hangers	6,800	sf	0.30	2,040			
262	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
263	Acid waste & vent pipe with fittings & hangers	6,800	sf	0.75	5,100			
264	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS								
265	Storm water pipe with fittings & hangers	6,800	sf	1.25	8,500			
266	Pipe insulation on horizontal runs	6,800	sf	0.20	1,360			
267	<u>Gas And Fuel Distribution Pipe</u>							
268	Gas pipe with fittings & hangers	6,800	sf	0.75	5,100			
269	<u>Miscellaneous</u>							
270	Coordination & BIM	6,800	sf	0.25	1,700			
271	Coring, sleeves & firestopping	6,800	sf	0.03	204			
272	Commissioning support	6,800	sf	0.08	544			
273	Fees & permits	6,800	sf	0.13	884			
274	SUBTOTAL					89,012		
275	TOTAL - PLUMBING							\$89,012
276								
277								
278								
279	D30 HVAC							
280								
281	D30 HVAC, GENERALLY							
282	<u>HVAC Equipment</u>							
283	HVAC equipment	6,800	sf	1.00	6,800			
284	<u>Pumps</u>							
285	Pumps	6,800	sf	0.28	1,904			
286	<u>Air distribution</u>							
287	RTU's Gas fired heating with DX cooling	12,920	cfm	9.25	119,510			
288	Air distribution equipment	6,800	sf	6.00	40,800			
289	Exhaust fans	6,800	sf	0.50	3,400			
290	<u>Sheet metal & Accessories</u>							
291	Sheet metal & accessories	6,800	sf	9.00	61,200			
292	<u>Piping</u>							
293	<u>Hot Water Piping</u>							
294	Hot water piping with fittings & hangers	6,800	sf	2.00	13,600			
295	<u>Chilled Water Piping</u>							
296	Chilled water piping with fittings & hangers	6,800	sf	0.55	3,740			
297	<u>Refrigerant Piping</u>							
298	Refrigerant piping with fittings & hangers	6,800	sf	0.10	680			
299	<u>Condensate Drain Piping</u>							
300	Condensate drain piping with fittings & hangers	6,800	sf	0.15	1,020			
301	<u>Piping Insulation</u>							
302	Piping insulation	6,800	sf	1.50	10,200			
303	<u>Automatic Temperature Controls</u>							
304	Automatic temperature controls DDC	6,800	sf	4.50	30,600			
305	Balancing							
306	System testing & balancing	6,800	sf	0.60	4,080			
307	<u>Miscellaneous</u>							
308	Commissioning support	6,800	sf	0.42	2,856			
309	Coring, sleeves & fire stopping	6,800	sf	0.17	1,156			
310	Rigging & equipment rental	6,800	sf	0.42	2,856			
311	Vibration & seismic restraints	6,800	sf	0.38	2,584			
312	SUBTOTAL					306,986		
313	TOTAL - HVAC							\$306,986
314								
315								
316								

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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5-CLASSROOM ADDITION AT MAIN BHS CAMPUS

D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

Fire protection system **6,800** gsf 4.50 30,600

SUBTOTAL 30,600

TOTAL - FIRE PROTECTION						\$30,600
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D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

Normal power distribution switchgear & feeders based on 4000A 480/277V **6,800** sf 5.00 34,000

Emergency power

Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank **6,800** sf 4.00 27,200

Equipment Wiring

Equipment wiring **6,800** sf 2.00 13,600

SUBTOTAL 74,800

D5020 LIGHTING & POWER

Lighting & Branch Power

Lighting fixtures (LED as BOD) with installation labor **6,800** sf 5.00 34,000

Lighting control system

Lighting controls including daylight harvesting system, allow **6,800** sf 1.15 7,820

Branch devices

Branch devices **6,800** sf 0.50 3,400

Lighting and branch circuitry

Lighting & branch circuitry **6,800** sf 5.50 37,400

SUBTOTAL 82,620

D5030 COMMUNICATION & SECURITY SYSTEMS

Fire Alarm

Fire alarm system **6,800** sf 2.00 13,600

Bi-Directional System

BDA system **6,800** sf 0.50 3,400

Security System

Security System **6,800** sf 2.50 17,000

Telephone/Data/CATV

Network switches, PBX, IP, VP, CCTV (By owner) By Owner

Telecommunications rough in **6,800** sf 1.50 10,200

Telecommunications devices and cabling **6,800** sf 2.00 13,600

Public Address/Clock System

PA/Master Clock system **6,800** sf 1.25 8,500

Audio Visual (rough-in and power only)

AV equipment By Owner

Rough-In conduit and backboxes only **6,800** sf 0.50 3,400

SUBTOTAL 69,700

D5040 OTHER ELECTRICAL SYSTEMS

Miscellaneous

OPTION 4A & 4C: New 5-Classroom Addition at BHS



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 6,800

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
5-CLASSROOM ADDITION AT MAIN BHS CAMPUS								
369	Temp power and lights	6,800	sf	0.45	3,060			
370	Lightning Protection System, UL Master label	6,800	sf	0.45	3,060			
371	Fees & Permits	6,800	sf	0.80	5,440			
372	SUBTOTAL					11,560		
373								
374	TOTAL - ELECTRICAL							\$238,680
375								
376								
377	E10 EQUIPMENT							
378								
379	E10 EQUIPMENT, GENERALLY							
380	No work in this section							
381	SUBTOTAL					-		
382								
383	TOTAL - EQUIPMENT							
384								
385								
386	E20 FURNISHINGS							
387								
388	E2010 FIXED FURNISHINGS							
389	Window blinds	2,040	sf	7.00	14,280			
390	Counters, base cabinets, tall storage in classrooms	5	loc	30,000.00	150,000			
391	SUBTOTAL					164,280		
392								
393	E2020 MOVABLE FURNISHINGS							
394	All movable furnishings to be provided and installed by owner							
395	SUBTOTAL					NIC		
396								
397	TOTAL - FURNISHINGS							\$164,280
398								
399								
400	F10 SPECIAL CONSTRUCTION							
401								
402	F10 SPECIAL CONSTRUCTION							
403	No items in this section							
404	SUBTOTAL							
405								
406	TOTAL - SPECIAL CONSTRUCTION							
407								
408								
409	F20 SELECTIVE BUILDING DEMOLITION							
410								
411	F2010 BUILDING ELEMENTS DEMOLITION							
412	Allowance to connect to existing building	1	ls	30,000.00	30,000			
413	SUBTOTAL					30,000		
414								
415	F2020 HAZARDOUS COMPONENTS ABATEMENT							
416	See main summary for HazMat allowance				See Summary			
417	SUBTOTAL							
418								
419	TOTAL - SELECTIVE BUILDING DEMOLITION							\$30,000

OPTION 4A & 4C: BHS 3rd Floor
Science Renovation to New Science

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate - Option 4

GFA 36,900

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>	

BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

A10 FOUNDATIONS

A1010	Standard Foundations	\$0			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$0	\$0	\$0.00	0.0%

B10 SUPERSTRUCTURE

B1010	Upper Floor Construction	\$82,731			
B1020	Roof Construction	\$0	\$82,731	\$2.24	1.1%

B20 EXTERIOR CLOSURE

B2010	Exterior Walls	\$0			
B2020	Windows/Curtainwall	\$0			
B2030	Exterior Doors	\$0	\$0	\$0.00	0.0%

B30 ROOFING

B3010	Roof Coverings	\$0			
B3020	Roof Openings	\$0	\$0	\$0.00	0.0%

C10 INTERIOR CONSTRUCTION

C1010	Partitions	\$505,800			
C1020	Interior Doors	\$134,700			
C1030	Specialties/Millwork	\$175,275	\$815,775	\$22.11	10.7%

C20 STAIRCASES

C2010	Stair Construction	\$0			
C2020	Stair Finishes	\$0	\$0	\$0.00	0.0%

C30 INTERIOR FINISHES

C3010	Wall Finishes	\$129,150			
C3020	Floor Finishes	\$385,605			
C3030	Ceiling Finishes	\$239,850	\$754,605	\$20.45	9.9%

D10 CONVEYING SYSTEMS

D1010	Elevator	\$0	\$0	\$0.00	0.0%
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D20 PLUMBING

D20	Plumbing	\$683,019	\$683,019	\$18.51	9.0%
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D30 HVAC

D30	HVAC	\$1,936,596	\$1,936,596	\$52.48	25.4%
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D40 FIRE PROTECTION

D40	Fire Protection	\$166,050	\$166,050	\$4.50	2.2%
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D50 ELECTRICAL

D5010	Electrical Systems	\$1,276,740	\$1,276,740	\$34.60	16.8%
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OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE					
E10	EQUIPMENT				
E10	Equipment	\$285,000	\$285,000	\$7.72	3.7%
E20	FURNISHINGS				
E2010	Fixed Furnishings	\$1,280,750			
E2020	Movable Furnishings NIC		\$1,280,750	\$34.71	16.8%
F10	SPECIAL CONSTRUCTION				
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20	SELECTIVE BUILDING DEMOLITION				
F2010	Building Elements Demolition	\$332,100			
F2020	Hazardous Components Abatement	\$0	\$332,100	\$9.00	4.4%
TOTAL DIRECT COST (Trade Costs)			\$7,613,366	\$206.32	100.0%

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

GROSS FLOOR AREA CALCULATION						
	Science Wing Renovation				36,900	
TOTAL GROSS FLOOR AREA (GFA)					36,900	\$f

A10 FOUNDATIONS						
A1010 STANDARD FOUNDATIONS						
No work in this section						
SUBTOTAL -						
A1020 SPECIAL FOUNDATIONS						
No work in this section						
SUBTOTAL -						
A1030 LOWEST FLOOR CONSTRUCTION						
No work in this section						
SUBTOTAL -						
TOTAL - FOUNDATIONS						

B10 SUPERSTRUCTURE						
B1010 FLOOR CONSTRUCTION						
	Openings in structure for MEP systems	36,900	gsf	2.00	73,800	
	Fire stopping floors	1	ls	8,931.00	8,931	
SUBTOTAL						82,731
B1020 ROOF CONSTRUCTION						
No work in this section						
SUBTOTAL -						
TOTAL - SUPERSTRUCTURE						\$82,731

B20 EXTERIOR CLOSURE						
B2010 EXTERIOR WALLS						
	Repair, repoint and clean all exterior walls					ETR
	Insulate exterior walls to meet code; new furred walls at perimeter					ETR
SUBTOTAL						-
B2020 WINDOWS/CURTAINWALL						
	Replace existing windows/curtainwall etc.					ETR
SUBTOTAL						-
B2030 EXTERIOR DOORS						
No work in this section						
SUBTOTAL						-
TOTAL - EXTERIOR CLOSURE						

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

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B30 ROOFING

B3010 ROOF COVERINGS

Replace existing roofing systems
 SUBTOTAL

ETR

-

B3020 ROOF OPENINGS

No work in this section
 SUBTOTAL

-

TOTAL - ROOFING

C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

Allowance for new walls 27,000 sf 16.00 432,000
 Miscellaneous patching to existing to remain walls 36,900 gsf 2.00 73,800
 SUBTOTAL

505,800

C1020 INTERIOR DOORS

New doors 36,900 sf 3.00 110,700
 Premium for power openers at corridor doors 8 loc 3,000.00 24,000
 SUBTOTAL

134,700

C1030 SPECIALTIES / MILLWORK

Lockers, full height 36,900 gsf 1.50 55,350

055000 MISCELLANEOUS METALS

Miscellaneous metals throughout building 36,900 sf 1.00 36,900

061000 ROUGH CARPENTRY

Rough blocking 36,900 sf 0.50 18,450

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Miscellaneous sealants throughout building 36,900 sf 1.50 55,350

101400 SIGNAGE

Code compliant signage 36,900 sf 0.25 9,225
 SUBTOTAL

175,275

TOTAL - INTERIOR CONSTRUCTION \$815,775

C20 STAIRCASES

C2010 STAIR CONSTRUCTION

SUBTOTAL

-

C2020 STAIR FINISHES

SUBTOTAL

-

TOTAL - STAIRCASES

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

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C30 INTERIOR FINISHES

C3010 WALL FINISHES

Painting	36,900	gsf	3.50	129,150	
SUBTOTAL					129,150

C3020 FLOOR FINISHES

New floor finishes throughout; Assume linoleum includes floor prep with Ardex or equal	35,055	sf	11.00	385,605	
SUBTOTAL					385,605

C3030 CEILING FINISHES

Replace existing ceilings throughout	36,900	gsf	6.50	239,850	
SUBTOTAL					239,850

TOTAL - INTERIOR FINISHES						\$754,605
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D10 CONVEYING SYSTEMS

SUBTOTAL						-
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TOTAL - CONVEYING SYSTEMS						
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D20 PLUMBING

D20 PLUMBING, GENERALLY

<u>Equipment</u>						
Plumbing equipment	36,900	sf	2.00	73,800		
<u>Plumbing Fixtures & Specialties</u>						
Miscellaneous plumbing fixtures	36,900	sf	2.00	73,800		
<u>Domestic Water Type L Copper Pipe</u>						
Domestic water pipe with fittings & hangers	36,900	sf	2.00	73,800		
Domestic water pipe insulation	36,900	sf	1.50	55,350		
<u>Sanitary Waste And Vent Pipe w/ Hangers</u>						
Sanitary waste pipe with fittings & hangers	36,900	sf	2.35	86,715		
<u>Acid Waste And Vent Pipe w/ Hangers</u>						
Acid waste & vent pipe with fittings & hangers	36,900	sf	4.00	147,600		
<u>Storm Drainage, Hubless Cast Iron Pipe</u>						
Storm water pipe with fittings & hangers	36,900	sf	1.25	46,125		
Pipe insulation on horizontal runs	36,900	sf	0.20	7,380		
<u>Gas And Fuel Distribution Pipe</u>						
Gas pipe with fittings & hangers	36,900	sf	2.00	73,800		
<u>Miscellaneous</u>						
Coring, sleeves & firestopping	36,900	sf	1.00	36,900		
Commissioning support	36,900	sf	0.08	2,952		
Fees & permits	36,900	sf	0.13	4,797		
SUBTOTAL						683,019

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

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TOTAL - PLUMBING							\$683,019
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D30 HVAC

D30 HVAC, GENERALLY

<u>HVAC Equipment</u>							
HVAC equipment	36,900	sf	1.00	36,900			
<u>Pumps</u>							
Pumps	36,900	sf	0.50	18,450			
<u>Air distribution</u>							
RTU's Gas fired heating with DX cooling	70,110	cfm	9.25	648,518			
Air distribution equipment	36,900	sf	3.00	110,700			
Exhaust fans	36,900	sf	2.00	73,800			
<u>Sheet metal & Accessories</u>							
Sheet metal & accessories	36,900	sf	13.00	479,700			
<u>Piping</u>							
<u>Hot Water Piping</u>							
Hot water piping with fittings & hangers	36,900	sf	2.00	73,800			
<u>Chilled Water Piping</u>							
Chilled water piping with fittings & hangers	36,900	sf	0.55	20,295			
<u>Refrigerant Piping</u>							
Refrigerant piping with fittings & hangers	36,900	sf	0.10	3,690			
<u>Condensate Drain Piping</u>							
Condensate drain piping with fittings & hangers	36,900	sf	0.15	5,535			
<u>Piping Insulation</u>							
Piping insulation	36,900	sf	1.50	55,350			
<u>Automatic Temperature Controls</u>							
Automatic temperature controls DDC	36,900	sf	5.50	202,950			
Balancing							
System testing & balancing	36,900	sf	0.60	22,140			
<u>Miscellaneous</u>							
Fume hood connections	19	loc	2,500.00	47,500			
Demolition & make safe	36,900	sf	1.50	55,350			
Commissioning support	36,900	sf	0.42	15,498			
Coring, sleeves & fire stopping	36,900	sf	1.00	36,900			
Rigging & equipment rental	36,900	sf	0.42	15,498			
Vibration & seismic restraints	36,900	sf	0.38	14,022			
SUBTOTAL						1,936,596	

TOTAL - HVAC							\$1,936,596
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D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

New fire protection system	36,900	sf	4.50	166,050			
SUBTOTAL						166,050	

TOTAL - FIRE PROTECTION							\$166,050
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OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

213	D50 ELECTRICAL						
214							
215	D5010 SERVICE & DISTRIBUTION						
216	Gear & Distribution						
217	Normal power distribution switchgear & feeders; modification to existing	36,900	sf	2.00	73,800		
218	<u>Emergency power</u>						
219	Emergency power distribution switchgear & feeders; modify existing	36,900	sf	4.00	147,600		
220	<u>Equipment Wiring</u>						
221	Equipment wiring	36,900	sf	2.00	73,800		
222	SUBTOTAL					295,200	
223							
224	D5020 LIGHTING & POWER						
225	<u>Lighting & Branch Power</u>						
226	Lighting fixtures (LED as BOD) with installation labor	36,900	sf	6.00	221,400		
227	<u>Lighting control system</u>						
228	Lighting controls including daylight harvesting system, allow	36,900	sf	1.15	42,435		
229	<u>Branch devices</u>						
230	Branch devices	36,900	sf	1.00	36,900		
231	<u>Lighting and branch circuitry</u>						
232	Lighting & branch circuitry	36,900	sf	4.50	166,050		
233	SUBTOTAL					466,785	
234							
235	D5030 COMMUNICATION & SECURITY SYSTEMS						
236	<u>Fire Alarm</u>						
237	Fire alarm system	36,900	sf	3.00	110,700		
238	<u>Security System</u>						
239	Security System	36,900	sf	2.50	92,250		
240	<u>Telephone/Data/CATV</u>						
241	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner	
242	Telecommunications rough in	36,900	sf	1.50	55,350		
243	Telecommunications devices and cabling	36,900	sf	2.00	73,800		
244	<u>Public Address/Clock System</u>						
245	PA/Master Clock system	36,900	sf	1.25	46,125		
246	<u>Audio Visual (rough-in and power only)</u>						
247	AV equipment					By Owner	
248	Rough-In conduit and backboxes only	36,900	sf	1.00	36,900		
249	SUBTOTAL					415,125	
250							
251	D5040 OTHER ELECTRICAL SYSTEMS						
252	<u>Miscellaneous</u>						
253	Demolition & make safe	36,900	sf	1.00	36,900		
254	Temp power and lights	36,900	sf	0.45	16,605		
255	Lightning Protection System, UL Master label	36,900	sf	0.45	16,605		
256	Fees & Permits	36,900	sf	0.80	29,520		
257	SUBTOTAL					99,630	
258							
259	TOTAL - ELECTRICAL					\$1,276,740	
260							
261							
262	E10 EQUIPMENT						
263							
264	E10 EQUIPMENT, GENERALLY						

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE								
265	Fume hoods, peg boards, safety equipment etc	19	rms	15,000.00	285,000			
266	SUBTOTAL					285,000		
268	TOTAL - EQUIPMENT						\$285,000	
271	E20 FURNISHINGS							
273	E2010 FIXED FURNISHINGS							
274	123553 CASEWORK							
275	Science casework allowance	19	rms	64,250.00	1,220,750			
276	Classroom casework allowance	2	rms	30,000.00	60,000			
277	SUBTOTAL					1,280,750		
279	E2020 MOVABLE FURNISHINGS							
280	All movable furnishings to be provided and installed by owner							
281	SUBTOTAL						NIC	
283	TOTAL - FURNISHINGS						\$1,280,750	
286	F10 SPECIAL CONSTRUCTION							
288	F10 SPECIAL CONSTRUCTION							
289	SUBTOTAL						-	
291	TOTAL - SPECIAL CONSTRUCTION							

OPTION 4A & 4C: BHS 3rd Floor Science Renovation to New Science



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,900

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO NEW SCIENCE

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F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

Interior demolition; gut	36,900	gsf	8.00	295,200
Temporary enclosures/protection	36,900	sf	1.00	36,900

SUBTOTAL 332,100

F2020 HAZARDOUS COMPONENTS ABATEMENT

See summary
 SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION						\$332,100
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OPTION 4B & 4D: New Science
STEM and Roberts-Wing
Renovation at the BHS Main
Campus Building

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 69,750

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$422,097			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$260,252	\$682,349	\$9.78	3.5%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$161,200			
A2020	Basement Walls	\$214,372	\$375,572	\$5.38	1.9%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$1,522,064			
B1020	Roof Construction	\$608,750	\$2,130,814	\$30.55	11.0%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$1,175,772			
B2020	Windows	\$859,951			
B2030	Exterior Doors	\$12,840	\$2,048,563	\$29.37	10.6%
B30 ROOFING					
B3010	Roof Coverings	\$469,200			
B3020	Roof Openings	\$161,000	\$630,200	\$9.04	3.3%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$1,674,000			
C1020	Interior Doors	\$348,750			
C1030	Specialties/Millwork	\$510,691	\$2,533,441	\$36.32	13.1%
C20 STAIRCASES					
C2010	Stair Construction	\$131,000			
C2020	Stair Finishes	\$12,287	\$143,287	\$2.05	0.7%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$627,750			
C3020	Floor Finishes	\$836,955			
C3030	Ceiling Finishes	\$488,250	\$1,952,955	\$28.00	10.1%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$160,000	\$160,000	\$2.29	0.8%
D20 PLUMBING					
D20	Plumbing	\$899,081	\$899,081	\$12.89	4.6%

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



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CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)					
D30 HVAC					
D30	HVAC	\$3,079,115	\$3,079,115	\$44.15	15.9%
D40 FIRE PROTECTION					
D40	Fire Protection	\$313,875	\$313,875	\$4.50	1.6%
D50 ELECTRICAL					
D5010	Complete System	\$2,343,603	\$2,343,603	\$33.60	12.1%
E10 EQUIPMENT					
E10	Equipment	\$420,000	\$420,000	\$6.02	2.2%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$1,291,412			
E2020	Movable Furnishings	NIC	\$1,291,412	\$18.51	6.7%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$355,800			
F2020	Hazardous Components Abatement	\$0	\$355,800	\$5.10	1.8%
TOTAL DIRECT COST (Trade Costs)			\$19,360,067	\$277.56	100.0%

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)							
GROSS FLOOR AREA CALCULATION							
				Add	Reno		
	Basement			3,600	4,000		
	First Floor			16,850	6,200		
	Second Floor			15,600	4,200		
	Third floor			15,600	3,700		
	TOTAL AREA			51,650	18,100		
TOTAL GROSS FLOOR AREA (GFA)					69,750	sf	
A10 FOUNDATIONS							
A1010 STANDARD FOUNDATIONS							
<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>							
	Formwork	688	sf	12.00	8,256		
	Re-bar	3,440	lbs.	1.32	4,541		
	Concrete material; 3,000 psi	35	cy	132.00	4,620		
	Placing concrete	35	cy	90.00	3,150		
<u>Foundation wall; 14" thick x 36" high</u>							
	Formwork	2,064	sf	17.00	35,088		
	Re-bar	4,128	lbs.	1.32	5,449		
	Concrete material; 3,000 psi	49	cy	132.00	6,468		
	Placing concrete	49	cy	90.00	4,410		
<u>Grade Beam at interior; 2'-0" wide x 2'-0" deep</u>							
	Formwork	240	sf	12.00	2,880		
	Re-bar	3,900	lbs.	1.32	5,148		
	Concrete material; 3,000 psi	10	cy	132.00	1,320		
	Placing concrete	10	cy	90.00	900		
<u>Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep</u>							
	Formwork	2,300	sf	16.00	36,800		
	Re-bar	27,000	lbs.	1.32	35,640		
	Concrete material; 3,000 psi	269	cy	132.00	35,508		
	Placing concrete	269	cy	90.00	24,210		
	Set anchor bolts grout plates	20	ea	165.00	3,300		
<u>Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep</u>							
	Formwork	1,632	sf	16.00	26,112		
	Re-bar	13,440	lbs.	1.32	17,741		
	Concrete material; 3,000 psi	141	cy	132.00	18,612		
	Placing concrete	141	cy	90.00	12,690		
	Set anchor bolts grout plates	24	ea	165.00	3,960		
<u>Piers/Pilasters; 22" x 22"</u>							
	Formwork 18" x 18"	576	sf	18.00	10,368		
	Re-bar	1,920	lbs	1.32	2,534		
	Concrete material; 3,000 psi	16	cy	132.00	2,112		
	Placing concrete	16	cy	150.00	2,400		
Renovated space							
	Allowance for work at existing foundations /basement	1	ls	25,000.00	25,000		
070001 WATERPROOFING, DAMPPROOFING AND CAULKING							
	Dampproofing foundation wall and footing	1,032	sf	3.00	NIC		

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)								
53	072100 THERMAL INSULATION							
54	Insulation	1,032	sf	3.00	3,096			
55								
56								
57	312000 EARTHWORK							
58	<u>Continuous footings</u>							
59	Excavation	255	cy	25.00	6,375			
60	Remove off site	255	cy	20.00	5,100			
61	Backfill with imported material	171	cy	38.00	6,498			
62	<u>Spread footings</u>							
63	Excavation	893	cy	25.00	22,325			
64	Remove off site	893	cy	20.00	17,860			
65	Backfill with imported material	483	cy	38.00	18,354			
66	<u>Grade Beams</u>							
67	Excavation	44	cy	25.00	1,100			
68	Remove off site	44	cy	20.00	880			
69	Backfill with imported material	34	cy	38.00	1,292			
70	SUBTOTAL					422,097		
71								
72	A1020 SPECIAL FOUNDATIONS							
73	SUBTOTAL							
74								
75	A1030 LOWEST FLOOR CONSTRUCTION							
76	<u>New Slab on grade, 5" thick</u>							
77	Gravel fill, 12"	624	cy	36.00	22,464			
78	Rigid insulation	16,850	sf	2.25	37,913			
79	Vapor barrier	16,850	sf	0.75	12,638			
80	Compact existing sub-grade	16,850	sf	0.50	8,425			
81	Mesh reinforcing 15% lap	19,378	sf	0.80	15,502			
82	Concrete - 5" thick; 4,000 psi	275	cy	125.00	34,375			
83	Placing concrete	275	cy	45.00	12,375			
84	Finishing and curing concrete	16,850	sf	1.50	25,275			
85	Control joints - saw cut	16,850	sf	0.10	1,685			
86	<u>Miscellaneous</u>							
87	New Elevator pit	1	ea	35,000.00	35,000			
88	Equipment pads	1	ls	5,000.00	5,000			
89	Renovated space							
90	Cutting and patching; generally at existing slab for new plumbing	6,200	sf	8.00	49,600			
91	SUBTOTAL					260,252		
92								
93	TOTAL - FOUNDATIONS						\$682,349	
94								
95								
96	A20 BASEMENT CONSTRUCTION							
97								
98	A2010 BASEMENT EXCAVATION							
99	Excavation for basement	1,600	cy	12.00	19,200			
100	Export off site	1,600	cy	20.00	32,000			
101	Temporary for sheeting and shoring - allowance	2,000	sf	55.00	110,000			
102	SUBTOTAL					161,200		

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)								
103								
104	A2020 BASEMENT WALLS							
105	<u>Continuous Footings at exterior: 2'-6" wide x 12" deep</u>							
106	Formwork	500	sf	12.00	6,000			
107	Re-bar	2,500	lbs.	1.32	3,300			
108	Concrete material; 3,000 psi	25	cy	132.00	3,300			
109	Placing concrete	25	cy	90.00	2,250			
110	<u>Basement wall; 14" thick</u>							
111	Formwork	8,000	sf	17.00	136,000			
112	Re-bar	16,000	lbs.	1.32	21,120			
113	Concrete material; 3,000 psi	191	cy	132.00	25,212			
114	Placing concrete	191	cy	90.00	17,190			
115	SUBTOTAL					214,372		
116								
117	TOTAL - BASEMENT CONSTRUCTION						\$375,572	
118								
119								
120	B10 SUPERSTRUCTURE							
121		14.83	lbs/sf					
122	B1010 FLOOR CONSTRUCTION	258	tns					
123	New Addition	34,800	sf					
124	<u>Floor Structure - Steel:</u>							
125	Steel beams and columns to new addition; 14.8#/SF	258	tns	3,500.00	903,000			
126	Premium for HSS	65	tns	300.00	19,500			
127	Shear studs	6,960	ea	2.50	17,400			
128	<u>Floor Structure</u>							
129	2" 18 Ga. Metal galvanized floor Deck	34,800	sf	3.75	130,500			
130	WWF reinforcement	40,020	sf	0.80	32,016			
131	Concrete Fill to metal deck; 6" Light Weight	812	cy	160.00	129,920			
132	Place and finish concrete	34,800	sf	2.00	69,600			
133	Rebar to decks	10,440	lbs	1.20	12,528			
134	Misc. angles	34,800	sf	0.50	17,400			
135	<u>Miscellaneous</u>							
136	Fire proofing to columns and beams	34,800	sf	2.25	78,300			
137	Intumescent paint	1	ls	20,000.00	20,000			
138	Fire stopping floors	1	ls	10,000.00	10,000			
139	Renovated space							
140	Allowance for bracing steel at full renovation; 2lbs per SF	12	tns	5,000.00	60,000			
141	Fireproofing to new steel	1	ls	10,000.00	10,000			
142	Openings in structure for MEP systems	11,900	gsf	1.00	11,900			
143	SUBTOTAL					1,522,064		
144								
145	B1020 ROOF CONSTRUCTION	14.84	lbs/sf					
146	New Addition	16,850	sf					
147	<u>Roof Structure - Steel:</u>							
148	Steel beams and columns to new addition; 14.8#/SF	125	tns	3,500.00	437,500			
149	Premium for HSS	31	tns	300.00	9,300			
150	<u>Roof Structure</u>							

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



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NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)							
151	3" 20 Ga. galvanized Metal Roof Deck	16,850	sf	4.00	67,400		
152	Miscellaneous						
153	Concrete under RTU's	3,000	sf	8.00	24,000		
154	Fire proofing to columns, beams and deck	16,850	sf	3.00	50,550		
155	Renovated space						
156	Miscellaneous steel upgrades to existing roof structure	1	ls	20,000.00	20,000		
155	SUBTOTAL					608,750	
TOTAL - SUPERSTRUCTURE							\$2,130,814
B20 EXTERIOR CLOSURE							
B2010 EXTERIOR WALLS							
163	Exterior Wall Area - Solid Assume 70%	14,972	sf				
164							
165	042000 MASONRY						
166	Brick veneer, 3 color; 85% of solid area	12,726	sf	40.00	509,040		
167	Allowance to tie in existing closure with new Addition	90	lf	150.00	13,500		
168	Staging to exterior wall	14,972	sf	4.00	59,888		
169							
170	055000 MISC. METALS						
171	No work in this section						
172							
173	070001 WATERPROOFING, DAMPPROOFING AND CAULKING						
174	Air barrier	14,972	sf	6.50	97,318		
175	Air barrier/flashing at windows	3,774	lf	6.25	23,588		
176	Miscellaneous sealants to closure	14,972	sf	1.00	14,972		
177							
178	072100 THERMAL INSULATION						
179	Insulation	14,972	sf	2.25	33,687		
180							
181	076400 CLADDING						
182	Metal panel; 15% of solid area	2,246	sf	75.00	168,450		
183	Roof equipment screen	1	ls	30,000.00	30,000		
184							
185	092900 GYPSUM BOARD ASSEMBLIES						
186	6" metal stud backup	14,972	sf	9.00	134,748		
187	Gypsum Sheathing	14,972	sf	2.75	41,173		
188	Drywall lining to interior face of stud backup	14,972	sf	3.30	49,408		
189							
190	SUBTOTAL					1,175,772	
191							
192	B2020 WINDOWS						
193	Exterior Wall Area - Glazed Assume 30%	6,416	sf				
194							
195	061000 ROUGH CARPENTRY						
196	Wood blocking at openings	3,774	lf	8.00	30,192		
197							
198	070001 WATERPROOFING, DAMPPROOFING AND CAULKING						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)								
199	Backer rod & double sealant	3,774	lf	8.50	32,079			
200								
201	080001 METAL WINDOWS							
202	Windows, double glazed; 20% of glazed area	1,283	sf	90.00	115,470			
203	Curtainwall, double glazed; 80% of glazed area	5,133	sf	120.00	615,960			
204	Sunshades; horizontal	1	ls	50,000.00	50,000			
205								
206	089000 LOUVERS							
207	Louvers	250	sf	65.00	16,250			
208	SUBTOTAL					859,951		
209								
210	B2030 EXTERIOR DOORS							
211	HM doors, frames and hardware- single	6	ea	2,000.00	12,000			
212	Backer rod & double sealant	120	lf	4.00	480			
213	Wood blocking at openings	120	lf	3.00	360			
214	SUBTOTAL					12,840		
215								
216	TOTAL - EXTERIOR CLOSURE						\$2,048,563	
217								
218								
219	B30 ROOFING							
220								
221	B3010 ROOF COVERINGS							
222	New roofing complete	15,650	sf	28.00	438,200			
223	Allowance to tie existing roof into new roof/ patch at new MEP penetrations	6,200	sf	5.00	31,000			
224	SUBTOTAL					469,200		
225								
226	B3020 ROOF OPENINGS							
227	Skylights, allowance	1,200	sf	130.00	156,000			
228	Roof hatch	2	loc	2,500.00	5,000			
229	SUBTOTAL					161,000		
230								
231	TOTAL - ROOFING						\$630,200	
232								
233								
234	C10 INTERIOR CONSTRUCTION							
235								
236	C1010 PARTITIONS							
237	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	69,750	gsf	24.00	1,674,000			
238	SUBTOTAL					1,674,000		
239								
240	C1020 INTERIOR DOORS							
241	Interior doors, frames and hardware	69,750	gsf	5.00	348,750			
242	SUBTOTAL					348,750		
243								
244	C1030 SPECIALTIES / MILLWORK							
245	Toilet Partitions and accessories	69,750	gsf	0.80	55,800			
246	Backer panels in electrical closets	1	ls	1,000.00	1,000			
247	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	69,750	sf	1.00	69,750			
248	Room Signs	69,750	gsf	0.40	27,900			
249	Fire extinguisher cabinets	23	ea	350.00	8,050			

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NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)							
250	Lockers	69,750	gsf	1.60	111,600		
251	Janitors Work Shop Accessories	1	ls	1,440.00	1,440		
252	Janitors Closet Accessories	3	rms	300.00	900		
253	Reception desks	1	loc	25,000.00	25,000		
254	Library shelving					F,F & E	
255	Display cases	69,750	gsf	0.25	17,438		
256	Miscellaneous metals throughout building	69,750	sf	1.50	104,625		
257	Miscellaneous sealants throughout building	69,750	sf	1.25	87,188		
258	SUBTOTAL					510,691	
TOTAL - INTERIOR CONSTRUCTION							\$2,533,441
C20 STAIRCASES							
C2010 STAIR CONSTRUCTION							
266	Steps at elevation change at 1st floor	2	loc	10,000.00	20,000		
267	Metal pan stair; egress stair	1	flt	25,000.00	25,000		
268	Main staircase	2	flt	40,000.00	80,000		
269	Concrete fill to stairs	3	flt	2,000.00	6,000		
270	SUBTOTAL					131,000	
C2020 STAIR FINISHES							
273	High performance coating to stairs including all railings etc.	3	flt	3,000.00	9,000		
274	Rubber tile at stairs - landings	100	sf	10.00	1,000		
275	Rubber tile at stairs - treads & risers	120	lft	19.06	2,287		
276	SUBTOTAL					12,287	
TOTAL - STAIRCASES							\$143,287
C30 INTERIOR FINISHES							
C3010 WALL FINISHES							
284	Wall finishes	69,750	sf	9.00	627,750		
285	SUBTOTAL					627,750	
C3020 FLOOR FINISHES							
288	Floor finishes	69,750	sf	10.00	697,500		
289	Moisture mitigation	46,485	sf	3.00	139,455		
290	SUBTOTAL					836,955	
C3030 CEILING FINISHES							
293	Ceiling finishes	69,750	sf	7.00	488,250		
294	SUBTOTAL					488,250	
TOTAL - INTERIOR FINISHES							\$1,952,955
D10 CONVEYING SYSTEMS							
D1010 ELEVATOR							
302	New elevator; 4 stop; oversize; 5,000 lbs	1	ea	160,000.00	160,000		
303	SUBTOTAL					160,000	

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)

304	TOTAL - CONVEYING SYSTEMS						\$160,000
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308	D20 PLUMBING						
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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
310	D20 PLUMBING, GENERALLY						
311	<u>Equipment</u>						
312	Plumbing equipment	69,750	sf	2.00	139,500		
313	<u>Plumbing Fixtures & Specialties</u>						
314	Miscellaneous plumbing fixtures	69,750	sf	1.00	69,750		
315	<u>Domestic Water Type L Copper Pipe</u>						
316	Domestic water pipe with fittings & hangers	69,750	sf	2.50	174,375		
317	Domestic water pipe insulation	69,750	sf	1.50	104,625		
318	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>						
319	Sanitary waste pipe with fittings & hangers	69,750	sf	2.15	149,963		
320	Kitchen waste pipe with fittings & hangers	69,750	sf	0.30	20,925		
321	<u>Acid Waste And Vent Pipe w/ Hangers</u>						
322	Acid waste & vent pipe with fittings & hangers	69,750	sf	0.75	52,313		
323	<u>Storm Drainage, Hubless Cast Iron Pipe</u>						
324	Storm water pipe with fittings & hangers	69,750	sf	1.25	87,188		
325	Pipe insulation on horizontal runs	69,750	sf	0.20	13,950		
326	<u>Gas And Fuel Distribution Pipe</u>						
327	Gas pipe with fittings & hangers	69,750	sf	0.75	52,313		
328	<u>Miscellaneous</u>						
329	Coordination & BIM	69,750	sf	0.25	17,438		
330	Coring, sleeves & firestopping	69,750	sf	0.03	2,093		
331	Commissioning support	69,750	sf	0.08	5,580		
332	Fees & permits	69,750	sf	0.13	9,068		
333	SUBTOTAL					899,081	

335	TOTAL - PLUMBING						\$899,081
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338	D30 HVAC						
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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
340	D30 HVAC, GENERALLY						
341	<u>HVAC Equipment</u>						
342	HVAC equipment	69,750	sf	1.00	69,750		
343	<u>Pumps</u>						
344	Pumps	69,750	sf	0.28	19,530		
345	<u>Air distribution</u>						
346	RTU's Gas fired heating with DX cooling	132,525	cfm	9.25	1,225,856		
347	Air distribution equipment	69,750	sf	6.00	418,500		
348	Exhaust fans	69,750	sf	0.50	34,875		
349	<u>Sheet metal & Accessories</u>						
350	Sheet metal & accessories	69,750	sf	8.50	592,875		
351	<u>Piping</u>						
352	<u>Hot Water Piping</u>						
353	Hot water piping with fittings & hangers	69,750	sf	2.00	139,500		

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)

354	<u>Chilled Water Piping</u>							
355	Chilled water piping with fittings & hangers	69,750	sf	0.55	38,363			
356	<u>Refrigerant Piping</u>							
357	Refrigerant piping with fittings & hangers	69,750	sf	0.10	6,975			
358	<u>Condensate Drain Piping</u>							
359	Condensate drain piping with fittings & hangers	69,750	sf	0.15	10,463			
360	<u>Piping Insulation</u>							
361	Piping insulation	69,750	sf	1.50	104,625			
362	<u>Automatic Temperature Controls</u>							
363	Automatic temperature controls DDC	69,750	sf	4.00	279,000			
364	Balancing							
365	System testing & balancing	69,750	sf	0.60	41,850			
366	<u>Miscellaneous</u>							
367	Commissioning support	69,750	sf	0.42	29,295			
368	Coring, sleeves & fire stopping	69,750	sf	0.17	11,858			
369	Rigging & equipment rental	69,750	sf	0.42	29,295			
370	Vibration & seismic restraints	69,750	sf	0.38	26,505			
371	SUBTOTAL					3,079,115		
372								
373	TOTAL - HVAC							\$3,079,115

D40 FIRE PROTECTION

377	D40 FIRE PROTECTION, GENERALLY							
378	Fire protection system	69,750	gsf	4.50	313,875			
379	SUBTOTAL					313,875		
380								
381	TOTAL - FIRE PROTECTION							\$313,875

D50 ELECTRICAL

387	D5010 SERVICE & DISTRIBUTION							
388	Gear & Distribution							
389	Normal power distribution switchgear & feeders based on 4000A 480/277V	69,750	sf	5.00	348,750			
390	<u>Emergency power</u>							
391	Emergency power distribution switchgear & feeders based on 400KW emergency generator on site with 150kW load bank	69,750	sf	4.00	279,000			
392	<u>Equipment Wiring</u>							
393	Equipment wiring	69,750	sf	2.00	139,500			
394	SUBTOTAL					767,250		
395								
396	D5020 LIGHTING & POWER							
397	<u>Lighting & Branch Power</u>							
398	Lighting fixtures (LED as BOD) with installation labor	69,750	sf	4.50	313,875			
399	<u>Lighting control system</u>							
400	Lighting controls including daylight harvesting system, allow	69,750	sf	1.15	80,213			
401	<u>Branch devices</u>							
402	Branch devices	69,750	sf	0.50	34,875			
403	<u>Lighting and branch circuitry</u>							
404								

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 69,750

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)							
405	Lighting & branch circuitry	69,750	sf	5.00	348,750		
406	SUBTOTAL					777,713	
407							
408							
409	D5030 COMMUNICATION & SECURITY SYSTEMS						
410	<u>Fire Alarm</u>						
411	Fire alarm system	69,750	sf	2.00	139,500		
412	<u>Bi-Directional System</u>						
413	BDA system	69,750	sf	0.50	34,875		
414	<u>Security System</u>						
415	Security System	69,750	sf	2.25	156,938		
416	<u>Telephone/Data/CATV</u>						
417	Network switches, PBX, IP, VP, CCTV (By owner)				By Owner		
418	Telecommunications rough in	69,750	sf	1.50	104,625		
419	Telecommunications devices and cabling	69,750	sf	1.75	122,063		
420	<u>Public Address/Clock System</u>						
421	PA/Master Clock system	69,750	sf	1.25	87,188		
422	<u>Audio Visual (rough-in and power only)</u>						
423	AV equipment				By Owner		
424	Rough-In conduit and backboxes only	69,750	sf	0.50	34,875		
425	Auditorium				N/A		
426	Black Box Theater				N/A		
427	White Box Theater				N/A		
428	Gymnasium				N/A		
429	SUBTOTAL					680,064	
430							
431	D5040 OTHER ELECTRICAL SYSTEMS						
432	<u>Miscellaneous</u>						
433	Temp power and lights	69,750	sf	0.45	31,388		
434	Lightning Protection System, UL Master label	69,750	sf	0.45	31,388		
435	Fees & Permits	69,750	sf	0.80	55,800		
436	SUBTOTAL					118,576	
437							
438	TOTAL - ELECTRICAL						\$2,343,603
439							
440							
441	E10 EQUIPMENT						
442							
443	E10 EQUIPMENT, GENERALLY						
444	Science classroom equipment - fume hoods, peg boards, safety equipment etc	18	ea	15,000.00	270,000		
445	Culinary Kitchen equipment	1	ls	150,000.00	150,000		
446	SUBTOTAL					420,000	
447							
448	TOTAL - EQUIPMENT						\$420,000
449							
450							
451	E20 FURNISHINGS						
452							
453	E2010 FIXED FURNISHINGS						
454	Window blinds	6,416	sf	7.00	44,912		
455	Science casework allowance	18	rms	64,250.00	1,156,500		
456	Classroom casework allowance	2	rms	30,000.00	60,000		
457	Maker space	1	rm	30,000.00	30,000		

OPTION 4B & 4D: New Science STEM and Roberts-Wing Renovation at the BHS Main Campus Building



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 69,750

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
NEW SCIENCE WING AT MAIN BHS CAMPUS (Including Renovation)								
458	SUBTOTAL					1,291,412		
459	E2020 MOVABLE FURNISHINGS							
460	All movable furnishings to be provided and installed							
461	by owner							
462	SUBTOTAL					NIC		
463	TOTAL - FURNISHINGS							\$1,291,412
464	F10 SPECIAL CONSTRUCTION							
465	F10 SPECIAL CONSTRUCTION							
466	No items in this section							
467	SUBTOTAL							
468	TOTAL - SPECIAL CONSTRUCTION							
469	F20 SELECTIVE BUILDING DEMOLITION							
470	F2010 BUILDING ELEMENTS DEMOLITION							
471	Remove exterior wall for new building	8,720	sf	15.00	130,800			
472	Interior demolition; gut	25,000	gsf	8.00	200,000			
473	Temporary enclosures/protection	25,000	sf	1.00	25,000			
474	SUBTOTAL					355,800		
475	F2020 HAZARDOUS COMPONENTS ABATEMENT							
476	See main summary for HazMat allowance				See Summary			
477	SUBTOTAL							
478	TOTAL - SELECTIVE BUILDING DEMOLITION							\$355,800

OPTION 4B & 4D: BHS 3rd
Floor Science Renovation to New
Academic Collaborative Classrooms

OPTION 4B & 4D: BHS 3rd Floor Science Renovation to New Academic Collaborative Classrooms



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE

1	GROSS FLOOR AREA CALCULATION							
2								
3		Science Wing Renovation into Classroom				36,500		
4								
5		TOTAL GROSS FLOOR AREA (GFA)				36,500	<i>sf</i>	
6								
7								
8		A10 FOUNDATIONS						
9								
10		A1010 STANDARD FOUNDATIONS						
11		No work in this section						
12		SUBTOTAL				-		
13								
14		A1020 SPECIAL FOUNDATIONS						
15		No work in this section						
16		SUBTOTAL				-		
17								
18		A1030 LOWEST FLOOR CONSTRUCTION						
19		No work in this section						
20		SUBTOTAL				-		
21								
22		TOTAL - FOUNDATIONS						
23								
24								
25		B10 SUPERSTRUCTURE						
26								
27		B1010 FLOOR CONSTRUCTION						
28		Openings in structure for MEP systems	36,500	gsf	2.00	73,000		
29		Fire stopping floors	1	ls	25,000.00	25,000		
30		SUBTOTAL					98,000	
31								
32		B1020 ROOF CONSTRUCTION						
33		No work in this section						
34		SUBTOTAL				-		
35								
36		TOTAL - SUPERSTRUCTURE						
37							\$98,000	
38								
39		B20 EXTERIOR CLOSURE						
40								
41		B2010 EXTERIOR WALLS						
42		Repair, repoint and clean all exterior walls				ETR		
43		Insulate exterior walls to meet code; new furred walls at perimeter				ETR		
44		SUBTOTAL					-	
45								
46		B2020 WINDOWS/CURTAINWALL						
47		Replace existing windows/curtainwall etc.				ETR		
48		SUBTOTAL					-	
49								
50		B2030 EXTERIOR DOORS						
51		No work in this section						
52		SUBTOTAL					-	
53								

OPTION 4B & 4D: BHS 3rd Floor Science Renovation to New Academic Collaborative Classrooms



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE

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TOTAL - EXTERIOR CLOSURE

B30 ROOFING

B3010 ROOF COVERINGS

Replace existing roofing systems
SUBTOTAL

ETR

-

B3020 ROOF OPENINGS

No work in this section
SUBTOTAL

-

TOTAL - ROOFING

C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

Allowance for new walls **1,676** sf 16.00 26,816
Miscellaneous patching to existing to remain walls **36,500** gsf 2.00 73,000
SUBTOTAL 99,816

C1020 INTERIOR DOORS

New doors **41** loc 2,100.00 86,100
Premium for power openers at corridor walls **27** loc 3,000.00 81,000
SUBTOTAL 167,100

C1030 SPECIALTIES / MILLWORK

Lockers, full height **36,500** gsf 1.50 54,750

055000 MISCELLANEOUS METALS

Miscellaneous metals throughout building **36,500** sf 1.00 36,500

061000 ROUGH CARPENTRY

Rough blocking **36,500** sf 0.50 18,250

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Miscellaneous sealants throughout building **36,500** sf 1.50 54,750

101400 SIGNAGE

Code compliant signage **41** loc 150.00 6,150
SUBTOTAL 170,400

TOTAL - INTERIOR CONSTRUCTION \$437,316

C20 STAIRCASES

C2010 STAIR CONSTRUCTION

SUBTOTAL

-

C2020 STAIR FINISHES

OPTION 4B & 4D: BHS 3rd Floor Science Renovation to New Academic Collaborative Classrooms



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE

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SUBTOTAL

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TOTAL - STAIRCASES

C30 INTERIOR FINISHES

C3010 WALL FINISHES

Painting 36,500 gsf 3.50 127,750

SUBTOTAL 127,750

C3020 FLOOR FINISHES

New floor finishes throughout; Assume linoleum includes floor prep with Ardex or equal 34,675 sf 11.00 381,425

SUBTOTAL 381,425

C3030 CEILING FINISHES

Replace existing ceilings throughout 36,500 gsf 6.50 237,250

SUBTOTAL 237,250

TOTAL - INTERIOR FINISHES

\$746,425

D10 CONVEYING SYSTEMS

SUBTOTAL

-

TOTAL - CONVEYING SYSTEMS

D20 PLUMBING

D20 PLUMBING, GENERALLY

Equipment

Plumbing equipment 36,500 sf 2.00 ETR

Plumbing Fixtures & Specialties

Miscellaneous plumbing fixtures 36,500 sf 2.00 ETR

Domestic Water Type I Copper Pipe

Domestic water pipe with fittings & hangers 36,500 sf 2.00 ETR

Domestic water pipe insulation 36,500 sf 1.50 ETR

Sanitary Waste And Vent Pipe w/ Hangers

Sanitary waste pipe with fittings & hangers 36,500 sf 2.35 ETR

Acid Waste And Vent Pipe w/ Hangers

Acid waste & vent pipe with fittings & hangers 36,500 sf 4.00 NR

Storm Drainage, Hubless Cast Iron Pipe

Storm water pipe with fittings & hangers 36,500 sf 1.25 ETR

Pipe insulation on horizontal runs 36,500 sf 0.20 ETR

Gas And Fuel Distribution Pipe

Gas pipe with fittings & hangers 36,500 sf 2.00 ETR

Miscellaneous

Coring, sleeves & firestopping 36,500 sf 1.00 36,500

Commissioning support 36,500 sf 0.08 2,920

OPTION 4B & 4D: BHS 3rd Floor Science Renovation to New Academic Collaborative Classrooms



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE								
159	Fees & permits	36,500	sf	0.13	4,745			
160	SUBTOTAL					44,165		
162	TOTAL - PLUMBING							\$44,165
165	D30 HVAC							
167	D30 HVAC, GENERALLY							
168	<u>HVAC Equipment</u>							
169	HVAC equipment	36,500	sf	1.00	ETR			
170	<u>Pumps</u>							
171	Pumps	36,500	sf	0.50	ETR			
172	<u>Air distribution</u>							
173	RTU's Gas fired heating with DX cooling	69,350	cfm	9.25	ETR			
174	Air distribution equipment	36,500	sf	3.00	ETR			
175	Exhaust fans	36,500	sf	2.00	ETR			
176	<u>Sheet metal & Accessories</u>							
177	Sheet metal & accessories	36,500	sf	14.00	511,000			
178	<u>Piping</u>							
179	<u>Hot Water Piping</u>							
180	Hot water piping with fittings & hangers	36,500	sf	2.00	ETR			
181	<u>Chilled Water Piping</u>							
182	Chilled water piping with fittings & hangers	36,500	sf	0.55	ETR			
183	<u>Refrigerant Piping</u>							
184	Refrigerant piping with fittings & hangers	36,500	sf	0.10	ETR			
185	<u>Condensate Drain Piping</u>							
186	Condensate drain piping with fittings & hangers	36,500	sf	0.15	ETR			
187	<u>Piping Insulation</u>							
188	Piping insulation	36,500	sf	1.50	ETR			
189	<u>Automatic Temperature Controls</u>							
190	Automatic temperature controls DDC	36,500	sf	5.50	200,750			
191	Balancing							
192	System testing & balancing	36,500	sf	0.60	21,900			
193	<u>Miscellaneous</u>							
194	Fume hood connections	18	loc	2,500.00	ETR			
195	Demolition & make safe	36,500	sf	1.50	ETR			
196	Commissioning support	36,500	sf	0.42	ETR			
197	Coring, sleeves & fire stopping	36,500	sf	1.00	ETR			
198	Rigging & equipment rental	36,500	sf	0.42	ETR			
199	Vibration & seismic restraints	36,500	sf	0.38	ETR			
200	SUBTOTAL					733,650		
202	TOTAL - HVAC							\$733,650
205	D40 FIRE PROTECTION							
207	D40 FIRE PROTECTION, GENERALLY							
208	New fire protection system	36,500	sf	4.50	164,250			
209	SUBTOTAL					164,250		

OPTION 4B & 4D: BHS 3rd Floor Science Renovation to New Academic Collaborative Classrooms



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE

TOTAL - FIRE PROTECTION							\$164,250
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D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

218	Normal power distribution switchgear & feeders; modification to existing	36,500	sf	2.00	ETR		
219	<u>Emergency power</u>						
220	Emergency power distribution switchgear & feeders; modify existing	36,500	sf	4.00	ETR		
221	<u>Equipment Wiring</u>						
222	Equipment wiring	36,500	sf	2.00	73,000		
223	SUBTOTAL					73,000	

D5020 LIGHTING & POWER

Lighting & Branch Power

227	Lighting fixtures (LED as BOD) with installation labor	36,500	sf	6.00	219,000		
228	<u>Lighting control system</u>						
229	Lighting controls including daylight harvesting system, allow	36,500	sf	1.15	41,975		
230	<u>Branch devices</u>						
231	Branch devices	36,500	sf	1.00	36,500		
232	<u>Lighting and branch circuitry</u>						
233	Lighting & branch circuitry	36,500	sf	5.50	200,750		
234	SUBTOTAL					498,225	

D5030 COMMUNICATION & SECURITY SYSTEMS

Fire Alarm

238	Fire alarm system	36,500	sf	3.00	109,500		
239	<u>Security System</u>						
240	Security System	36,500	sf	2.50	91,250		
241	<u>Telephone/Data/CATV</u>						
242	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner	
243	Telecommunications rough in	36,500	sf	1.50	54,750		
244	Telecommunications devices and cabling	36,500	sf	2.00	73,000		
245	<u>Public Address/Clock System</u>						
246	PA/Master Clock system	36,500	sf	1.25	45,625		
247	<u>Audio Visual (rough-in and power only)</u>						
248	AV equipment					By Owner	
249	Rough-In conduit and backboxes only	36,500	sf	1.00	36,500		
250	SUBTOTAL					410,625	

D5040 OTHER ELECTRICAL SYSTEMS

Miscellaneous

254	Demolition & make safe	36,500	sf	1.00	36,500		
255	Temp power and lights	36,500	sf	0.45	16,425		
256	Lightning Protection System, UL Master label	36,500	sf	0.45	16,425		
257	Fees & Permits	36,500	sf	0.80	29,200		
258	SUBTOTAL					98,550	

TOTAL - ELECTRICAL							\$1,080,400
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OPTION 4B & 4D: BHS 3rd Floor Science Renovation to New Academic Collaborative Classrooms



Brookline High School
Design Options
Brookline, MA

18-May-17

Feasibility Estimate - Option 4

GFA 36,500

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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BHS THIRD FLOOR RENOVATION OF SCIENCE SPACE TO ACADEMIC SPACE

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E10 EQUIPMENT

E10 EQUIPMENT, GENERALLY

Fume hoods 18 loc 12,000.00 ETR

SUBTOTAL -

TOTAL - EQUIPMENT

E20 FURNISHINGS

E2010 FIXED FURNISHINGS

123553 CASEWORK

Classroom casework allowance 36,500 sf 15.00 547,500

SUBTOTAL

547,500

E2020 MOVABLE FURNISHINGS

All movable furnishings to be provided and installed by owner

SUBTOTAL

NIC

TOTAL - FURNISHINGS \$547,500

F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION

SUBTOTAL -

TOTAL - SPECIAL CONSTRUCTION

F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

Interior demolition; gut 36,500 gsf 12.00 438,000

Temporary enclosures/protection 36,500 sf 1.00 36,500

SUBTOTAL

474,500

F2020 HAZARDOUS COMPONENTS ABATEMENT

See summary

SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION \$474,500

OPTIONAL PROJECTS

Tappan Gym Upgrades

1. Minimal Renovation

2. Moderate Expansion Plan

2.1 Tappan Gym Min. Moderate Upgrade

3. Ed Plan with Field House

Cypress Park Field and Playground

Renovation Options 1 & 2

Cypress Park Field Preliminary Design

Costs & Budget Review

Underground Parking at Cypress Field

3-Level Parking Structure

2-Level Parking Structure

1-Level Parking Structure

Parking Below Option 4 Cypress Building

BHS Exterior Window Renovation Scope

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation Summary



Brookline High School
 Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION

	Sep-18		
RENOVATIONS TO EXISTING GYMNASIUM	74,870	\$88.77	\$6,646,346
REMOVE HAZARDOUS MATERIALS			\$374,720
SITework - ALLOWANCE 8% of BUILDING			\$531,708
SUB-TOTAL	74,870	\$100.88	\$7,552,774
ESCALATION TO MID-POINT - (assumed 3% PA)	9%		\$679,750
DESIGN AND PRICING CONTINGENCY	15%		\$1,234,879
SUB-TOTAL	74,870	\$126.45	\$9,467,403
GENERAL CONDITIONS	6.00%		\$568,044
GENERAL REQUIREMENTS	4.00%		\$378,696
BONDS	1.15%		\$108,875
INSURANCE	1.25%		\$118,343
PERMIT			Waived
CM FEE	2.50%		\$266,034
CM/GMP CONTINGENCY	3%		\$284,022
PHASING PREMIUM	5.0%		\$473,370
TOTAL OF ALL CONSTRUCTION	74,870	\$155.80	\$11,664,787

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 74,870

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$111,000			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$103,800	\$214,800	\$2.87	3.2%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$173,420			
B1020	Roof Construction	\$65,000	\$238,420	\$3.18	3.6%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$315,720			
B2020	Windows/Curtainwall	\$36,450			
B2030	Exterior Doors	\$20,620	\$372,790	\$4.98	5.6%
B30 ROOFING					
B3010	Roof Coverings	\$1,042,585			
B3020	Roof Openings	\$0	\$1,042,585	\$13.93	15.7%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$351,300			
C1020	Interior Doors	\$117,100			
C1030	Specialties/Millwork	\$261,179	\$729,579	\$9.74	11.0%
C20 STAIRCASES					
C2010	Stair Construction	\$30,000			
C2020	Stair Finishes	\$20,000	\$50,000	\$0.67	0.8%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$187,360			
C3020	Floor Finishes	\$234,200			
C3030	Ceiling Finishes	\$442,464	\$864,024	\$11.54	13.0%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$0	\$0	\$0.00	0.0%
D20 PLUMBING					
D20	Plumbing	\$585,500	\$585,500	\$7.82	8.8%
D30 HVAC					
D30	HVAC	\$1,053,900	\$1,053,900	\$14.08	15.9%
D40 FIRE PROTECTION					
D40	Fire Protection	\$105,390	\$105,390	\$1.41	1.6%
D50 ELECTRICAL					
D5010	Electrical Systems	\$1,092,791	\$1,092,791	\$14.60	16.4%
E10 EQUIPMENT					
E10	Equipment	\$0	\$0	\$0.00	0.0%

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 74,870

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION					
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$40,233			
E2020	Movable Furnishings	NIC	\$40,233	\$0.54	0.6%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 SELECTIVE BUILDING DEMOLITION					
F2010	Building Elements Demolition	\$256,334			
F2020	Hazardous Components Abatement	\$0	\$256,334	\$3.42	3.9%
TOTAL DIRECT COST (Trade Costs)			\$6,646,346	\$88.77	100.0%

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



Brookline High School
 Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 74,870

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION

GROSS FLOOR AREA CALCULATION

BASEMENT LIGHT RENOVATION				10,550		
BASEMENT INTENSIVE RENOVATION				9,420		
FIRST FLOOR LIGHT RENOVATION				6,400		
FIRST FLOOR INTENSIVE RENOVATION				11,100		
SECOND FLOOR LIGHT RENOVATION				16,140		
SECOND FLOOR INTENSIVE RENOVATION				710		
MZ FLOOR LIGHT RENOVATION				1,040		
MZ FLOOR INTENSIVE RENOVATION				2,190		
THIRD FLOOR LIGHT RENOVATION				17,320		

TOTAL GROSS FLOOR AREA (GFA) 74,870 sf

A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Allowance for new footings at bracing	11,100	sf	10.00	111,000		
SUBTOTAL					111,000	

A1020 SPECIAL FOUNDATIONS

No work in this section
 SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

Cutting and patching; generally at existing slab for new plumbing	11,100	sf	8.00	88,800		
Equipment pads	1	ls	15,000.00	15,000		
SUBTOTAL					103,800	

TOTAL - FOUNDATIONS \$214,800

B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Allowance for bracing steel at full renovation; 2lbs per SF	23	tns	5,000.00	115,000		
Fireproofing to new steel	1	ls	25,000.00	25,000		
Openings in structure for MEP systems	23,420	gsf	1.00	23,420		
Fire stopping floors	1	ls	10,000.00	10,000		
SUBTOTAL					173,420	

B1020 ROOF CONSTRUCTION

Roof Structure - Steel:

New steel for RTU's	1	ls	15,000.00	15,000		
Miscellaneous steel upgrades to existing roof structure	1	ls	50,000.00	50,000		

SUBTOTAL 65,000

TOTAL - SUPERSTRUCTURE \$238,420

B20 EXTERIOR CLOSURE

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



Brookline High School
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Feasibility Estimate

GFA 74,870

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION								
54	B2010 EXTERIOR WALLS	14,897	sf					
55	Repair, minor repoint and clean all exterior walls; brick and concrete	10,310	sf	20.00	NIC			
56	New metal panel at Field House level	4,587	sf	60.00	275,220			
57	Insulate exterior walls to meet code; new furred walls at perimeter	14,897	sf	12.00	NIC			
58	Patch and repair existing walls to install new windows; includes lintels etc.	405	sf	100.00	40,500			
59	SUBTOTAL					315,720		
61	B2020 WINDOWS/CURTAINWALL							
62	New windows	405	sf	90.00	36,450			
63	Replace existing windows	1,819	sf	90.00	ETR			
64	Replace existing Kalwall at Field House	7,464	sf	65.00	ETR			
65	SUBTOTAL					36,450		
67	B2030 EXTERIOR DOORS							
68	Replace exterior door, double	2	pr	8,500.00	17,000			
69	Replace exterior door, single	1	ea	2,000.00	2,000			
70	Backer rod & double sealant	135	lf	9.00	1,215			
71	Wood blocking at openings	135	lf	3.00	405			
72	SUBTOTAL					20,620		
74	TOTAL - EXTERIOR CLOSURE						\$372,790	
77	B30 ROOFING							
79	B3010 ROOF COVERINGS							
80	New entrance canopy	4,461	sf	125.00	557,625			
81	Replace roofing systems	17,320	sf	28.00	484,960			
82	SUBTOTAL					1,042,585		
84	B3020 ROOF OPENINGS							
85	No work in this section							
86	SUBTOTAL					-		
88	TOTAL - ROOFING						\$1,042,585	
91	C10 INTERIOR CONSTRUCTION							
93	C1010 PARTITIONS							
94	Replace walls at full renovation	23,420	gsf	15.00	351,300			
95	SUBTOTAL					351,300		
97	C1020 INTERIOR DOORS							
98	Remove and replace doors at full renovation	23,420	gsf	5.00	117,100			
99	SUBTOTAL					117,100		
101	C1030 SPECIALTIES / MILLWORK							
102	Toilet Partitions and accessories	74,870	gsf	0.80	59,896			
103	Lockers, full height	74,870	gsf	1.50	112,305			

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



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GFA 74,870

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION								
105	055000 MISCELLANEOUS METALS							
106	Miscellaneous metals throughout building	23,420	sf	1.00	23,420			
107	061000 ROUGH CARPENTRY							
108	Rough blocking	23,420	sf	0.50	11,710			
109	070001 WATERPROOFING, DAMPPROOFING AND CAULKING							
110	Miscellaneous sealants throughout building	23,420	sf	1.50	35,130			
111	101400 SIGNAGE							
112	Code compliant signage	74,870	sf	0.25	18,718			
113	SUBTOTAL					261,179		
114	TOTAL - INTERIOR CONSTRUCTION						\$729,579	

C20 STAIRCASES

C2010 STAIR CONSTRUCTION

125	New handrails and guardrails @ stairs; code upgrades	5	flt	6,000.00	30,000		
126	SUBTOTAL					30,000	

C2020 STAIR FINISHES

129	Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips	5	flt	4,000.00	20,000		
130	SUBTOTAL					20,000	

TOTAL - STAIRCASES \$50,000

C30 INTERIOR FINISHES

C3010 WALL FINISHES

138	Miscellaneous walls finishes to full renovated areas	23,420	gsf	8.00	187,360		
139	SUBTOTAL					187,360	

C3020 FLOOR FINISHES

142	Gym flooring	12,626	sf	18.00 ETR			
143	New floor finishes throughout	23,420	gsf	10.00	234,200		
144	SUBTOTAL					234,200	

C3030 CEILING FINISHES

147	Paint exposed Gym ceiling	12,626	sf	3.00	37,878		
148	Replace existing ceilings throughout	62,244	gsf	6.50	404,586		
149	SUBTOTAL					442,464	

TOTAL - INTERIOR FINISHES \$864,024

D10 CONVEYING SYSTEMS

156	SUBTOTAL					-	
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OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



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Feasibility Estimate

GFA 74,870

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION

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TOTAL - CONVEYING SYSTEMS

D20 PLUMBING

D20 PLUMBING, GENERALLY

Plumbing allowance; renovated areas	23,420	sf	25.00	585,500		
SUBTOTAL					585,500	

TOTAL - PLUMBING \$585,500

D30 HVAC

D30 HVAC, GENERALLY

HVAC allowance; renovated areas	23,420	sf	45.00	1,053,900		
SUBTOTAL					1,053,900	

TOTAL - HVAC \$1,053,900

D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

New fire protection system; renovated areas	23,420	sf	4.50	105,390		
SUBTOTAL					105,390	

TOTAL - FIRE PROTECTION \$105,390

D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

Gear & Distribution

Normal power distribution switchgear & feeders	23,420	sf	5.00	117,100		
<u>Emergency power</u>						
Emergency power distribution switchgear & feeders	23,420	sf	3.00	70,260		
<u>Equipment Wiring</u>						
Equipment wiring	23,420	sf	2.00	46,840		
SUBTOTAL					234,200	

D5020 LIGHTING & POWER

Lighting & Branch Power

Lighting fixtures (LED as BOD) with installation labor	74,870	sf	5.00	374,350		
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Lighting control system

Lighting controls including daylight harvesting system, allow	74,870	sf	1.15	86,101		
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Branch devices

Branch devices	23,420	sf	0.50	11,710		
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Lighting and branch circuitry

Lighting & branch circuitry	23,420	sf	5.50	128,810		
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OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



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GFA 74,870

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION

208 SUBTOTAL 600,971

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210 **D5030 COMMUNICATION & SECURITY SYSTEMS**

211 Fire Alarm

212 Fire alarm system 23,420 sf 2.00 46,840

213 Security System

214 Security System 23,420 sf 2.50 58,550

215 Telephone/Data/CATV

216 Network switches, PBX, IP, VP, CCTV (By owner) By Owner

217 Telecommunications rough in 23,420 sf 1.50 35,130

218 Telecommunications devices and cabling 23,420 sf 2.00 46,840

219 Public Address/Clock System

220 PA/Master Clock system 23,420 sf 1.25 29,275

221 Audio Visual (rough-in and power only)

222 AV equipment By Owner

223 Rough-In conduit and backboxes only 23,420 sf 0.50 11,710

224 Gymnasium

225 Sound system 1 ls 15,000.00 ETR

226 Scoreboard/ shot clocks with feed and connection 2 ea 15,000.00 ETR

227 Misc. gym equipment feed and connections 1 ls 25,000.00 ETR

228 SUBTOTAL 228,345

229

230 **D5040 OTHER ELECTRICAL SYSTEMS**

231 Miscellaneous

232 Temp power and lights 23,420 sf 0.45 10,539

233 Fees & Permits 23,420 ls 0.80 18,736

234 SUBTOTAL 29,275

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236 **TOTAL - ELECTRICAL \$1,092,791**

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239 **E10 EQUIPMENT**

240

241 **E10 EQUIPMENT, GENERALLY**

242 Gym wall pads 1 ls 20,000.00 ETR

243 Basketball backstops; swing up; electric operated 6 loc 10,000.00 ETR

244 Gymnasium dividing net; electrically operated 1 ls 30,000.00 ETR

245 Volleyball net and standards 1 ls 5,000.00 ETR

246 Telescoping bleachers 1 ls 60,000.00 ETR

247 SUBTOTAL -

248

249 **TOTAL - EQUIPMENT**

250

251

252 **E20 FURNISHINGS**

253

254 **E2010 FIXED FURNISHINGS**

255 Entry mats & frames - recessed with carpet/rubber strips 500 sf 55.00 27,500

256 Window blinds 1,819 sf 7.00 12,733

257 SUBTOTAL 40,233

258

259 **E2020 MOVABLE FURNISHINGS**

260 All movable furnishings to be provided and installed by owner

OPTIONAL PROJECT - Tappan Gym 1. Minimum Renovation



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Feasibility Estimate

GFA 74,870

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	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
TAPPAN GYM UPGRADE 1 MINIMAL RENOVATION							
	SUBTOTAL						NIC
TOTAL - FURNISHINGS							\$40,233
F10 SPECIAL CONSTRUCTION							
	F10 SPECIAL CONSTRUCTION						-
	SUBTOTAL						
TOTAL - SPECIAL CONSTRUCTION							
F20 SELECTIVE BUILDING DEMOLITION							
	F2010 BUILDING ELEMENTS DEMOLITION						
	Remove exterior glazing	1,819	sf	6.00	10,914		
	Remove roofing	17,320	sf	2.00	34,640		
	Interior demolition; gut	23,420	gsf	8.00	187,360		
	Temporary enclosures/protection	23,420	sf	1.00	23,420		
	SUBTOTAL						256,334
	F2020 HAZARDOUS COMPONENTS ABATEMENT						
	See summary						
	SUBTOTAL						
TOTAL - SELECTIVE BUILDING DEMOLITION							\$256,334

OPTION 2 - Tappan Gym 2. Moderate Expansion Summary



Brookline High School

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Feasibility Estimate

OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION + ADDITION

	Sep-18		
RENOVATIONS TO EXISTING GYMNASIUM	60,330	\$199.41	\$12,030,119
ADDITIONS	49,300	\$298.26	\$14,704,252
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)	19,140	\$10.00	\$191,400
REMOVE HAZARDOUS MATERIALS			\$1,271,520
SITework - ALLOWANCE 8% of BUILDING			\$2,138,750
SUB-TOTAL	109,630	\$276.71	\$30,336,041
ESCALATION TO MID-POINT - (assumed 3% PA)	9%		\$2,730,244
DESIGN AND PRICING CONTINGENCY	15%		\$4,959,943
SUB-TOTAL	109,630	\$346.86	\$38,026,228
GENERAL CONDITIONS	6.00%		\$2,281,574
GENERAL REQUIREMENTS	4.00%		\$1,521,049
BONDS	1.15%		\$437,302
INSURANCE	1.25%		\$475,328
PERMIT			Waived
CM FEE	2.50%		\$1,068,537
CM/GMP CONTINGENCY	3%		\$1,140,787
PHASING PREMIUM	5.0%		\$1,901,311
TOTAL OF ALL CONSTRUCTION	109,630	\$427.37	\$46,852,116

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Brookline, MA

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Feasibility Estimate

GFA 60,330

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$75,400			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$65,320	\$140,720	\$2.33	1.2%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$240,780			
B1020	Roof Construction	\$70,000	\$310,780	\$5.15	2.6%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$874,680			
B2020	Windows/Curtainwall	\$829,465			
B2030	Exterior Doors	\$20,620	\$1,724,765	\$28.59	14.3%
B30 ROOFING					
B3010	Roof Coverings	\$449,120			
B3020	Roof Openings	\$0	\$449,120	\$7.44	3.7%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$424,800			
C1020	Interior Doors	\$331,650			
C1030	Specialties/Millwork	\$334,832	\$1,091,282	\$18.09	9.1%
C20 STAIRCASES					
C2010	Stair Construction	\$24,000			
C2020	Stair Finishes	\$16,000	\$40,000	\$0.66	0.3%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$294,270			
C3020	Floor Finishes	\$704,308			
C3030	Ceiling Finishes	\$347,954	\$1,346,532	\$22.32	11.2%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$0	\$0	\$0.00	0.0%
D20 PLUMBING					
D20	Plumbing	\$1,085,940	\$1,085,940	\$18.00	9.0%
D30 HVAC					
D30	HVAC	\$2,714,850	\$2,714,850	\$45.00	22.6%
D40 FIRE PROTECTION					
D40	Fire Protection	\$271,485	\$271,485	\$4.50	2.3%
D50 ELECTRICAL					
D5010	Electrical Systems	\$2,084,941	\$2,084,941	\$34.56	17.3%
E10 EQUIPMENT					
E10	Equipment	\$175,000	\$175,000	\$2.90	1.5%

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 60,330

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION					
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$109,456			
E2020	Movable Furnishings	NIC	\$109,456	\$1.81	0.9%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 SELECTIVE BUILDING DEMOLITION					
F2010	Building Elements Demolition	\$485,248			
F2020	Hazardous Components Abatement	\$0	\$485,248	\$8.04	4.0%
TOTAL DIRECT COST (Trade Costs)			\$12,030,119	\$199.41	100.0%

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 60,330

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION

GROSS FLOOR AREA CALCULATION

CODE RENOVATION				32,010		
FULL RENOVATION				28,320		

TOTAL GROSS FLOOR AREA (GFA)				60,330	sf	
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Allowance for new footings at bracing to full renovation	7,540	sf	10.00	75,400		
SUBTOTAL						75,400

A1020 SPECIAL FOUNDATIONS

No work in this section
SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

Cutting and patching; generally at full renovation slab	7,540	sf	8.00	60,320		
Equipment pads	1	ls	5,000.00	5,000		
SUBTOTAL						65,320

TOTAL - FOUNDATIONS						\$140,720
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Allowance for bracing steel at full renovation; 2lbs per SF	32	tns	5,000.00	160,000		
Fireproofing to new steel	1	ls	35,000.00	35,000		
Openings in structure for MEP systems	20,780	gsf	1.00	20,780		
Fire stopping floors	1	ls	25,000.00	25,000		
SUBTOTAL						240,780

B1020 ROOF CONSTRUCTION

Roof Structure - Steel:

New steel for RTU's	1	ls	20,000.00	20,000		
Miscellaneous steel upgrades to existing roof structure	1	ls	50,000.00	50,000		
SUBTOTAL						70,000

TOTAL - SUPERSTRUCTURE						\$310,780
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Repair, minor repaint and clean all exterior walls; brick and concrete	16,855	sf				
	8,619	sf	20.00	172,380		
New metal panel at Pavilion level	8,334	sf	60.00	500,040		

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 60,330

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION								
50	Insulate exterior walls to meet code; new furred walls at perimeter	16,855	sf	12.00	202,260			
51	SUBTOTAL					874,680		
52								
53	B2020 WINDOWS/CURTAINWALL							
54	Replace existing windows/Kalwall - assume 15% L1 & 2	1,053	sf	65.00	68,445			
55	Replace existing windows/Kalwall at Pavilion	11,708	sf	65.00	761,020			
56	SUBTOTAL					829,465		
57								
58	B2030 EXTERIOR DOORS							
59	Replace exterior door, double	2	pr	8,500.00	17,000			
60	Replace exterior door, single	1	ea	2,000.00	2,000			
61	Backer rod & double sealant	135	lf	9.00	1,215			
62	Wood blocking at openings	135	lf	3.00	405			
63	SUBTOTAL					20,620		
64								
65	TOTAL - EXTERIOR CLOSURE						\$1,724,765	
66								
67								
68	B30 ROOFING							
69								
70	B3010 ROOF COVERINGS							
71	New roofing systems	16,040	sf	28.00	449,120			
72	SUBTOTAL					449,120		
73								
74	B3020 ROOF OPENINGS							
75	No work in this section							
76	SUBTOTAL					-		
77								
78	TOTAL - ROOFING						\$449,120	
79								
80								
81	C10 INTERIOR CONSTRUCTION							
82								
83	C1010 PARTITIONS							
84	Replace walls at full renovation	28,320	gsf	15.00	424,800			
85	SUBTOTAL					424,800		
86								
87	C1020 INTERIOR DOORS							
88	Enlarge openings at code upgrade	1	ls	30,000.00	30,000			
89	Remove and replace doors at full and code renovation	60,330	gsf	5.00	301,650			
90	SUBTOTAL					331,650		
91								
92	C1030 SPECIALTIES / MILLWORK							
93	Toilet Partitions and accessories	60,330	gsf	0.80	48,264			
94	Lockers, full height	60,330	gsf	1.50	90,495			
95								
96	<i>055000 MISCELLANEOUS METALS</i>							
97	Miscellaneous metals throughout building	60,330	sf	1.00	60,330			
98								
99	<i>061000 ROUGH CARPENTRY</i>							
100	Rough blocking	60,330	sf	0.50	30,165			
101								

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 60,330

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION

102	070001	WATERPROOFING, DAMPPROOFING AND CAULKING					
103		Miscellaneous sealants throughout building	60,330	sf	1.50	90,495	
104							
105	101400	SIGNAGE					
106		Code compliant signage	60,330	sf	0.25	15,083	
107		SUBTOTAL				334,832	
108							
109	TOTAL - INTERIOR CONSTRUCTION						\$1,091,282

C20 STAIRCASES

114	C2010	STAIR CONSTRUCTION					
115		New handrails and guardrails @ stairs; code upgrades	4	flt	6,000.00	24,000	
116		SUBTOTAL				24,000	
117							
118	C2020	STAIR FINISHES					
119		Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips	4	flt	4,000.00	16,000	
120		SUBTOTAL				16,000	
121							
122	TOTAL - STAIRCASES						\$40,000

C30 INTERIOR FINISHES

127	C3010	WALL FINISHES					
128		Painting	60,330	gsf	3.00	180,990	
129		Miscellaneous walls finishes to full renovated areas	28,320	gsf	4.00	113,280	
130		SUBTOTAL				294,270	
131							
132	C3020	FLOOR FINISHES					
133		Gym flooring	12,626	sf	18.00	227,268	
134		New floor finishes throughout	47,704	gsf	10.00	477,040	
135		SUBTOTAL				704,308	
136							
137	C3030	CEILING FINISHES					
138		Paint exposed Gym ceiling	12,626	sf	3.00	37,878	
139		Replace existing ceilings throughout	47,704	gsf	6.50	310,076	
140		SUBTOTAL				347,954	
141							
142	TOTAL - INTERIOR FINISHES						\$1,346,532

D10 CONVEYING SYSTEMS

147		SUBTOTAL				-	
148							
149	TOTAL - CONVEYING SYSTEMS						

D20 PLUMBING

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 60,330

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION								
154	D20 PLUMBING, GENERALLY							
155	Plumbing allowance	60,330	sf	18.00	1,085,940			
156	SUBTOTAL					1,085,940		
157								
158	TOTAL - PLUMBING						\$1,085,940	
159								
160								
161	D30 HVAC							
162								
163	D30 HVAC, GENERALLY							
164	HVAC allowance	60,330	sf	45.00	2,714,850			
165	SUBTOTAL					2,714,850		
166								
167	TOTAL - HVAC						\$2,714,850	
168								
169								
170	D40 FIRE PROTECTION							
171								
172	D40 FIRE PROTECTION, GENERALLY							
173	New fire protection system	60,330	sf	4.50	271,485			
174	SUBTOTAL					271,485		
175								
176	TOTAL - FIRE PROTECTION						\$271,485	
177								
178								
179	D50 ELECTRICAL							
180								
181	D5010 SERVICE & DISTRIBUTION							
182	Gear & Distribution							
183	Normal power distribution switchgear & feeders	60,330	sf	5.00	301,650			
184	<u>Emergency power</u>							
185	Emergency power distribution switchgear & feeders	60,330	sf	3.00	180,990			
186	<u>Equipment Wiring</u>							
187	Equipment wiring	60,330	sf	2.00	120,660			
188	SUBTOTAL					603,300		
189								
190	D5020 LIGHTING & POWER							
191	<u>Lighting & Branch Power</u>							
192	Lighting fixtures (LED as BOD) with installation labor	60,330	sf	5.00	301,650			
193	<u>Lighting control system</u>							
194	Lighting controls including daylight harvesting system, allow	60,330	sf	1.15	69,380			
195	<u>Branch devices</u>							
196	Branch devices	60,330	sf	0.50	30,165			
197	<u>Lighting and branch circuitry</u>							
198	Lighting & branch circuitry	60,330	sf	5.50	331,815			
199	SUBTOTAL					733,010		
200								
201	D5030 COMMUNICATION & SECURITY SYSTEMS							
202	<u>Fire Alarm</u>							
203	Fire alarm system	60,330	sf	2.00	120,660			
204	<u>Security System</u>							

OPTION 2 - Tappan Gym 2. Moderate Expansion



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Feasibility Estimate

GFA 60,330

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION

205	Security System	60,330	sf	2.50	150,825		
206	Telephone/Data/CATV						
207	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner	
208	Telecommunications rough in	60,330	sf	1.50	90,495		
209	Telecommunications devices and cabling	60,330	sf	2.00	120,660		
210	Public Address/Clock System						
211	PA/Master Clock system	60,330	sf	1.25	75,413		
212	Audio Visual (rough-in and power only)						
213	AV equipment					By Owner	
214	Rough-In conduit and backboxes only	60,330	sf	0.50	30,165		
215	Gymnasium						
216	Sound system	1	ls	15,000.00	15,000		
217	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	30,000		
218	Misc. gym equipment feed and connections	1	ls	25,000.00	25,000		
219	SUBTOTAL						658,218

D5040 OTHER ELECTRICAL SYSTEMS

222	Miscellaneous						
223	Demolition & make safe	1	ls	15,000.00	15,000		
224	Temp power and lights	60,330	sf	0.45	27,149		
225	Fees & Permits	60,330	ls	0.80	48,264		
226	SUBTOTAL						90,413

TOTAL - ELECTRICAL

\$2,084,941

E10 EQUIPMENT

E10 EQUIPMENT, GENERALLY

234	Gym wall pads	1	ls	20,000.00	20,000		
235	Basketball backstops; swing up; electric operated	6	loc	10,000.00	60,000		
236	Gymnasium dividing net; electrically operated	1	ls	30,000.00	30,000		
237	Volleyball net and standards	1	ls	5,000.00	5,000		
238	Telescoping bleachers	1	ls	60,000.00	60,000		
239	SUBTOTAL						175,000

TOTAL - EQUIPMENT

\$175,000

E20 FURNISHINGS

E2010 FIXED FURNISHINGS

247	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500		
248	Window blinds	11,708	sf	7.00	81,956		
249	SUBTOTAL						109,456

E2020 MOVABLE FURNISHINGS

252	All movable furnishings to be provided and installed by owner						
253	SUBTOTAL						NIC

TOTAL - FURNISHINGS

\$109,456

OPTION 2 - Tappan Gym 2. Moderate Expansion



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GFA 60,330

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: RENOVATION

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F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION
 SUBTOTAL

-

TOTAL - SPECIAL CONSTRUCTION

F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

Remove exterior glazing	11,708	sf	6.00	70,248	
Remove roofing	16,040	sf	2.00	32,080	
Interior demolition; gut	28,320	gsf	8.00	226,560	
Interior demolition; partial	32,010	gsf	3.00	96,030	
Temporary enclosures/protection	60,330	sf	1.00	60,330	
SUBTOTAL					485,248

F2020 HAZARDOUS COMPONENTS ABATEMENT

See summary
 SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION \$485,248

OPTION 2 - Tappan Gym 2. Moderate Expansion



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Feasibility Estimate

GFA 49,300

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$355,913			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$301,258	\$657,171	\$13.33	4.5%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$427,156			
A2020	Basement Walls	\$310,392	\$737,548	\$14.96	5.0%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$1,533,958			
B1020	Roof Construction	\$584,870	\$2,118,828	\$42.98	14.4%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$636,042			
B2020	Windows	\$1,494,802			
B2030	Exterior Doors	\$69,400	\$2,200,244	\$44.63	15.0%
B30 ROOFING					
B3010	Roof Coverings	\$408,680			
B3020	Roof Openings	\$135,000	\$543,680	\$11.03	3.7%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$739,500			
C1020	Interior Doors	\$246,500			
C1030	Specialties/Millwork	\$344,840	\$1,330,840	\$26.99	9.1%
C20 STAIRCASES					
C2010	Stair Construction	\$324,000			
C2020	Stair Finishes	\$75,446	\$399,446	\$8.10	2.7%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$493,000			
C3020	Floor Finishes	\$654,200			
C3030	Ceiling Finishes	\$345,100	\$1,492,300	\$30.27	10.1%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$160,000	\$160,000	\$3.25	1.1%
D20 PLUMBING					
D20	Plumbing	\$645,337	\$645,337	\$13.09	4.4%

OPTION 2 - Tappan Gym 2. Moderate Expansion



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GFA 49,300

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION					
D30 HVAC					
D30	HVAC	\$2,241,899	\$2,241,899	\$45.47	15.2%
D40 FIRE PROTECTION					
D40	Fire Protection	\$221,850	\$221,850	\$4.50	1.5%
D50 ELECTRICAL					
D5010	Complete System	\$1,713,945	\$1,713,945	\$34.77	11.7%
E10 EQUIPMENT					
E10	Equipment	\$30,000	\$30,000	\$0.61	0.2%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$111,164			
E2020	Movable Furnishings	NIC	\$111,164	\$2.25	0.8%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$100,000			
F2020	Hazardous Components Abatement	\$0	\$100,000	\$2.03	0.7%
TOTAL DIRECT COST (Trade Costs)			\$14,704,252	\$298.26	100.0%

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

GROSS FLOOR AREA CALCULATION

Basement	13,330
First Floor	14,310
Second Floor	14,240
Third floor (Field House)	7,420

TOTAL GROSS FLOOR AREA (GFA)	49,300 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior: 2'-6" wide x 12" deep

Formwork	120	sf	12.00	1,440
Re-bar	600	lbs.	1.32	792
Concrete material; 3,000 psi	6	cy	132.00	792
Placing concrete	6	cy	90.00	540

Foundation wall: 14" thick x 36" high

Formwork	360	sf	17.00	6,120
Re-bar	720	lbs.	1.32	950
Concrete material; 3,000 psi	9	cy	132.00	1,188
Placing concrete	9	cy	90.00	810

Grade Beam at interior: 2'-0" wide x 2'-0" deep

Formwork	760	sf	12.00	9,120
Re-bar	12,350	lbs.	1.32	16,302
Concrete material; 3,000 psi	31	cy	132.00	4,092
Placing concrete	31	cy	90.00	2,790

Spread Footings at interior: 11'-6" x 11'-6" x 2'-6" deep

Formwork	1,150	sf	16.00	18,400
Re-bar	13,500	lbs.	1.32	17,820
Concrete material; 3,000 psi	135	cy	132.00	17,820
Placing concrete	135	cy	90.00	12,150

Set anchor bolts grout plates

40	ea	165.00	6,600
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Spread Footings at perimeter: 8'-6" x 8'-6" x 2'-0" deep

Formwork	1,904	sf	16.00	30,464
Re-bar	15,680	lbs.	1.32	20,698
Concrete material; 3,000 psi	165	cy	132.00	21,780
Placing concrete	165	cy	90.00	14,850
Set anchor bolts grout plates	112	ea	165.00	18,480

Piers/Pilasters: 22" x 22"

Formwork 18" x 18"	672	sf	18.00	12,096
Re-bar	2,160	lbs	1.32	2,851
Concrete material; 3,000 psi	18	cy	132.00	2,376
Placing concrete	18	cy	150.00	2,700

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	180	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	180	sf	3.00	540
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312000 EARTHWORK

OPTION 2 - Tappan Gym 2. Moderate Expansion



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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

56	<u>Continuous footings</u>							
57	Excavation	44	cy	25.00	1,100			
58	Remove off site	44	cy	20.00	880			
59	Backfill with imported material	29	cy	38.00	1,102			
60	<u>Spread footings</u>							
61	Excavation	1,315	cy	25.00	32,875			
62	Remove off site	1,315	cy	20.00	26,300			
63	Backfill with imported material	1,015	cy	38.00	38,570			
64	<u>Grade Beams</u>							
65	Excavation	141	cy	25.00	3,525			
66	Remove off site	141	cy	20.00	2,820			
67	Backfill with imported material	110	cy	38.00	4,180			
68	SUBTOTAL					355,913		
69								
70	A1020 SPECIAL FOUNDATIONS							
71	SUBTOTAL							
72								
73	A1030 LOWEST FLOOR CONSTRUCTION							
74	<u>New Slab on grade, 5" thick</u>							
75	Gravel fill, 12"	530	cy	36.00	19,080			
76	Rigid insulation	14,310	sf	2.25	32,198			
77	Vapor barrier	14,310	sf	0.75	10,733			
78	Compact existing sub-grade	14,310	sf	0.50	7,155			
79	Mesh reinforcing 15% lap	16,457	sf	0.80	13,166			
80	Concrete - 5" thick; 4,000 psi	234	cy	125.00	29,250			
81	Placing concrete	234	cy	45.00	10,530			
82	Finishing and curing concrete	14,310	sf	1.50	21,465			
83	Control joints - saw cut	14,310	sf	0.10	1,431			
84	<u>Miscellaneous</u>							
85	Foundations against existing building	445	lf	250.00	111,250			
86	New Elevator pit	1	ea	35,000.00	35,000			
87	Equipment pads	1	ls	10,000.00	10,000			
88	SUBTOTAL					301,258		
89								
90	TOTAL - FOUNDATIONS						\$657,171	
91								
92								
93	A20 BASEMENT CONSTRUCTION							
94								
95	A2010 BASEMENT EXCAVATION							
96	Excavation for basement	4,583	cy	12.00	54,996			
97	Export off site	4,583	cy	20.00	91,660			
98	Temporary for sheeting and shoring	5,100	sf	55.00	280,500			
99	SUBTOTAL					427,156		
100								
101	A2020 BASEMENT WALLS							
102	<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>							
103	Formwork	680	sf	12.00	8,160			
104	Re-bar	3,400	lbs.	1.32	4,488			
105	Concrete material; 3,000 psi	35	cy	132.00	4,620			

OPTION 2 - Tappan Gym 2. Moderate Expansion



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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

106	Placing concrete	35	cy	90.00	3,150		
107	<u>Basement wall; 14" thick</u>						
108	Formwork	10,200	sf	17.00	173,400		
109	Re-bar	20,400	lbs.	1.32	26,928		
110	Concrete material; 3,000 psi	243	cy	132.00	32,076		
111	Placing concrete	243	cy	90.00	21,870		
112	Waterproofing retaining wall	5,100	sf	7.00	35,700		
113	SUBTOTAL					310,392	

TOTAL - BASEMENT CONSTRUCTION						\$737,548
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B10 SUPERSTRUCTURE

118		15.13	lbs/sf		-		
119	B1010 FLOOR CONSTRUCTION	373	tns		-		
120	New Addition	34,990	sf				
121	<u>Floor Structure - Steel:</u>						
122	Steel beams and columns to new addition; 14.8#/SF	259	tns	3,800.00	984,200		
123	Premium for HSS	65	tns	300.00	19,500		
124	Shear studs	6,998	ea	2.50	17,495		
125	<u>Floor Structure</u>						
126	2" 18 Ga. Metal galvanized floor Deck	34,990	sf	3.75	131,213		
127	WWF reinforcement	40,239	sf	0.80	32,191		
128	Concrete Fill to metal deck; 6" Light Weight	816	cy	160.00	130,560		
129	Place and finish concrete	34,990	sf	2.00	69,980		
130	Rebar to decks	10,497	lbs	1.20	12,596		
131	Misc. angles	34,990	sf	0.50	17,495		
132	<u>Miscellaneous</u>						
133	Fire proofing to columns and beams	34,990	sf	2.25	78,728		
134	Intumescent paint	1	ls	25,000.00	25,000		
135	Fire stopping floors	1	ls	15,000.00	15,000		
136	SUBTOTAL					1,533,958	

B1020 ROOF CONSTRUCTION

139	New Addition	14,310	sf				
140	<u>Roof Structure - Steel:</u>						
141	Steel beams and columns to new addition; 16#/SF; premium for pitched roof	114	tns	4,000.00	456,000		
142	Premium for HSS	29	tns	300.00	8,700		
143	Exposed steel	1	ls	20,000.00	20,000		
144	<u>Roof Structure</u>						
145	Acoustic deck allowance	14,310	sf	7.00	100,170		
146	<u>Miscellaneous</u>						
147	Fire proofing to columns, beams and deck	14,310	sf	3.00	Not Required		
148	SUBTOTAL					584,870	

TOTAL - SUPERSTRUCTURE						\$2,118,828
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OPTION 2 - Tappan Gym 2. Moderate Expansion



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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Exterior Wall Area - Solid Assume 40%

7,968 sf

042000 MASONRY

Brick veneer, 3 color; 85% of solid area

6,773 sf 40.00 270,920

Staging to exterior wall

7,968 sf 4.00 31,872

055000 MISC. METALS

Stainless steel sign at main entrance

1 ls 20,000.00 20,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Air barrier

7,968 sf 6.50 51,792

Air barrier/flashing at windows

7,031 lf 6.25 43,944

Miscellaneous sealants to closure

7,968 sf 1.00 7,968

072100 THERMAL INSULATION

Insulation

7,968 sf 2.25 17,928

076400 CLADDING

Metal panel; 15% of solid area

1,195 sf 60.00 71,700

Roof equipment screen

NIC

092900 GYPSUM BOARD ASSEMBLIES

6" metal stud backup

7,968 sf 9.00 71,712

Gypsum Sheathing

7,968 sf 2.75 21,912

Drywall lining to interior face of stud backup

7,968 sf 3.30 26,294

SUBTOTAL

636,042

B2020 WINDOWS

Exterior Wall Area - Glazed Assume 60%

11,952 sf

061000 ROUGH CARPENTRY

Wood blocking at openings

7,031 lf 8.00 56,248

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant

7,031 lf 8.50 59,764

080001 METAL WINDOWS

Windows, double glazed; 20% of glazed area

2,390 sf 90.00 215,100

Curtainwall, double glazed; 80% of glazed area

9,562 sf 120.00 1,147,440

089000 LOUVERS

Louvers

250 sf 65.00 16,250

SUBTOTAL

1,494,802

B2030 EXTERIOR DOORS

Glazed entrance doors including frame and hardware; double door

8 pr 8,000.00 64,000

HM doors, frames and hardware- Double

2 pr 2,000.00 4,000

OPTION 2 - Tappan Gym 2. Moderate Expansion



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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

205	Backer rod & double sealant	200	lf	4.00	800		
206	Wood blocking at openings	200	lf	3.00	600		
207	SUBTOTAL					69,400	

TOTAL - EXTERIOR CLOSURE						\$2,200,244
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B30 ROOFING

B3010 ROOF COVERINGS							
214	New roofing complete	14,310	sf	28.00	400,680		
216	Allowance for soffits; metal panels with backup system	100	sf	80.00	8,000		
217	SUBTOTAL					408,680	

B3020 ROOF OPENINGS							
220	Skylights, allow for skylight	1,000	sf	130.00	130,000		
221	Roof hatch	2	loc	2,500.00	5,000		
222	SUBTOTAL					135,000	

TOTAL - ROOFING						\$543,680
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C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS							
230	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	49,300	gsf	15.00	739,500		
231	SUBTOTAL					739,500	

C1020 INTERIOR DOORS							
234	Interior doors, frames and hardware	49,300	gsf	5.00	246,500		
235	SUBTOTAL					246,500	

C1030 SPECIALTIES / MILLWORK							
238	Toilet Partitions and accessories	49,300	gsf	0.80	39,440		
239	Backer panels in electrical closets	1	ls	1,000.00	1,000		
240	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	49,300	sf	1.00	49,300		
241	Room Signs	49,300	gsf	0.40	19,720		
242	Fire extinguisher cabinets	16	ea	350.00	5,600		
243	Lockers	49,300	gsf	1.60	78,880		
244	Janitors Work Shop Accessories	1	ls	1,500.00	1,500		
245	Janitors Closet Accessories	5	rms	300.00	1,500		
246	Display cases	49,300	gsf	0.25	12,325		
247	Miscellaneous metals throughout building	49,300	sf	1.50	73,950		
248	Miscellaneous sealants throughout building	49,300	sf	1.25	61,625		
249	SUBTOTAL					344,840	

TOTAL - INTERIOR CONSTRUCTION						\$1,330,840
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

OPTION 2 - Tappan Gym 2. Moderate Expansion



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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

257	Metal pan stair; egress stair	12	flt	25,000.00	300,000			
258	Concrete fill to stairs	12	flt	2,000.00	24,000			
259	SUBTOTAL					324,000		
261	C2020 STAIR FINISHES							
262	High performance coating to stairs including all railings etc.	12	flt	3,000.00	36,000			
263	Rubber tile at stairs - landings	1,200	sf	10.00	12,000			
264	Rubber tile at stairs - treads & risers	1,440	lft	19.06	27,446			
265	SUBTOTAL					75,446		
TOTAL - STAIRCASES								\$399,446

C30 INTERIOR FINISHES

272	C3010 WALL FINISHES							
273	Wall finishes	49,300	sf	10.00	493,000			
274	SUBTOTAL					493,000		
276	C3020 FLOOR FINISHES							
277	Small Gym flooring	5,360	sf	18.00	96,480			
278	Floor finishes	43,940	sf	10.00	439,400			
279	Moisture mitigation	39,440	sf	3.00	118,320			
280	SUBTOTAL					654,200		
282	C3030 CEILING FINISHES							
283	Ceiling finishes	49,300	sf	7.00	345,100			
284	SUBTOTAL					345,100		
TOTAL - INTERIOR FINISHES								\$1,492,300

D10 CONVEYING SYSTEMS

291	D1010 ELEVATOR							
292	New elevator; 4 stop; oversize; 5,000 lbs	1	ea	160,000.00	160,000			
293	SUBTOTAL					160,000		
TOTAL - CONVEYING SYSTEMS								\$160,000

D20 PLUMBING

300	D20 PLUMBING, GENERALLY						
301	<u>Equipment</u>						
302	Plumbing equipment	49,300	sf	2.00	98,600		
303	<u>Plumbing Fixtures & Specialties</u>						
304	Miscellaneous plumbing fixtures	49,300	sf	1.00	49,300		
305	<u>Domestic Water Type L Copper Pipe</u>						
306	Domestic water pipe with fittings & hangers	49,300	sf	2.50	123,250		
307	Domestic water pipe insulation	49,300	sf	1.50	73,950		
308	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>						
309	Sanitary waste pipe with fittings & hangers	49,300	sf	2.35	115,855		

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 49,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION								
310	Kitchen waste pipe with fittings & hangers	49,300	sf	0.30	14,790			
311	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
312	Acid waste & vent pipe with fittings & hangers	49,300	sf	0.75	36,975			
313	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
314	Storm water pipe with fittings & hangers	49,300	sf	1.25	61,625			
315	Pipe insulation on horizontal runs	49,300	sf	0.20	9,860			
316	<u>Gas And Fuel Distribution Pipe</u>							
317	Gas pipe with fittings & hangers	49,300	sf	0.75	36,975			
318	<u>Miscellaneous</u>							
319	Coordination & BIM	49,300	sf	0.25	12,325			
320	Coring, sleeves & firestopping	49,300	sf	0.03	1,479			
321	Commissioning support	49,300	sf	0.08	3,944			
322	Fees & permits	49,300	sf	0.13	6,409			
323	SUBTOTAL					645,337		
324								
325	TOTAL - PLUMBING							\$645,337

D30 HVAC

D30 HVAC, GENERALLY

331	<u>HVAC Equipment</u>						
332	HVAC equipment	49,300	sf	1.00	49,300		
333	<u>Pumps</u>						
334	Pumps	49,300	sf	0.28	13,804		
335	<u>Air distribution</u>						
336	RTU's Gas fired heating with DX cooling	93,670	cfm	9.25	866,448		
337	MAU unit gas fired heating	5,000	cfm	3.25	16,250		
338	Air distribution equipment	49,300	sf	6.00	295,800		
339	Exhaust fans	49,300	sf	0.50	24,650		
340	<u>Sheet metal & Accessories</u>						
341	Sheet metal & accessories	49,300	sf	9.00	443,700		
342	<u>Piping</u>						
343	<u>Hot Water Piping</u>						
344	Hot water piping with fittings & hangers	49,300	sf	2.00	98,600		
345	<u>Chilled Water Piping</u>						
346	Chilled water piping with fittings & hangers	49,300	sf	0.55	27,115		
347	<u>Refrigerant Piping</u>						
348	Refrigerant piping with fittings & hangers	49,300	sf	0.10	4,930		
349	<u>Condensate Drain Piping</u>						
350	Condensate drain piping with fittings & hangers	49,300	sf	0.15	7,395		
351	<u>Piping Insulation</u>						
352	Piping insulation	49,300	sf	1.50	73,950		
353	<u>Automatic Temperature Controls</u>						
354	Automatic temperature controls DDC	49,300	sf	4.50	221,850		
355	Balancing						
356	System testing & balancing	49,300	sf	0.60	29,580		
357	<u>Miscellaneous</u>						
358	Commissioning support	49,300	sf	0.42	20,706		
359	Coring, sleeves & fire stopping	49,300	sf	0.17	8,381		

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
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Brookline, MA

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Feasibility Estimate

GFA 49,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

360	Rigging & equipment rental	49,300	sf	0.42	20,706		
361	Vibration & seismic restraints	49,300	sf	0.38	18,734		
362	SUBTOTAL					2,241,899	

TOTAL - HVAC						\$2,241,899
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D40 FIRE PROTECTION

368	D40 FIRE PROTECTION, GENERALLY						
369	Fire protection system	49,300	gsf	4.50	221,850		
370	SUBTOTAL					221,850	

TOTAL - FIRE PROTECTION						\$221,850
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D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION

379	Gear & Distribution						
380	Normal power distribution switchgear & feeders based on 4000A 480/277V	49,300	sf	5.00	246,500		
381	<u>Emergency power</u>						
382	Emergency power distribution switchgear & feeders	49,300	sf	3.00	147,900		
383	<u>Equipment Wiring</u>						
384	Equipment wiring	49,300	sf	2.00	98,600		
385	SUBTOTAL					493,000	

D5020 LIGHTING & POWER

389	<u>Lighting & Branch Power</u>				-		
390	Lighting fixtures (LED as BOD) with installation labor	49,300	sf	5.00	246,500		
391	<u>Lighting control system</u>						
392	Lighting controls including daylight harvesting system, allow	49,300	sf	1.15	56,695		
393	<u>Branch devices</u>						
394	Branch devices	49,300	sf	0.50	24,650		
395	<u>Lighting and branch circuitry</u>						
396	Lighting & branch circuitry	49,300	sf	5.50	271,150		
397	SUBTOTAL					598,995	

D5030 COMMUNICATION & SECURITY SYSTEMS

401	<u>Fire Alarm</u>						
402	Fire alarm system	49,300	sf	2.00	98,600		
403	<u>Bi-Directional System</u>						
404	BDA system	49,300	sf	0.50	24,650		
405	<u>Security System</u>						
406	Security System	49,300	sf	2.50	123,250		
407	<u>Telephone/Data/CATV</u>						
408	Network switches, PBX, IP, VP, CCTV (By owner)						By Owner
409	Telecommunications rough in	49,300	sf	1.50	73,950		
410	Telecommunications devices and cabling	49,300	sf	2.00	98,600		

OPTION 2 - Tappan Gym 2. Moderate Expansion



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GFA 49,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION

411	<u>Public Address/Clock System</u>						
412	PA/Master Clock system	49,300	sf	1.25	61,625		
413	<u>Audio Visual (rough-in and power only)</u>						
414	AV equipment					By Owner	
415	Rough-In conduit and backboxes only	49,300	sf	0.50	24,650		
416	<u>Gymnasium</u>						
417	Sound system	1	ls	10,000.00	10,000		
418	Scoreboard/ shot clocks with feed and connection	1	ea	15,000.00	15,000		
419	Misc. gym equipment feed and connections	1	ls	15,000.00	15,000		
420	SUBTOTAL					545,325	

D5040 OTHER ELECTRICAL SYSTEMS

423	<u>Miscellaneous</u>						
424	Temp power and lights	49,300	sf	0.45	22,185		
425	Seismic restraints	1	ls	15,000.00	15,000		
426	Fees & Permits	49,300	ls	0.80	39,440		
427	SUBTOTAL					76,625	

TOTAL - ELECTRICAL						\$1,713,945
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E10 EQUIPMENT

E10 EQUIPMENT, GENERALLY

435	Gym wall pads	1	ls	10,000.00	10,000		
436	Basketball backstops; swing up; electric operated	2	loc	10,000.00	20,000		
437	SUBTOTAL					30,000	

TOTAL - EQUIPMENT						\$30,000
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E20 FURNISHINGS

E2010 FIXED FURNISHINGS

445	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500		
446	Window blinds	11,952	sf	7.00	83,664		
447	SUBTOTAL					111,164	

E2020 MOVABLE FURNISHINGS

449	All movable furnishings to be provided and installed by owner						
450	SUBTOTAL					NIC	

TOTAL - FURNISHINGS						\$111,164
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F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION

459	No items in this section						
460	SUBTOTAL						

TOTAL - SPECIAL CONSTRUCTION						
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F20 SELECTIVE BUILDING DEMOLITION

OPTION 2 - Tappan Gym 2. Moderate Expansion



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

GFA 49,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 2 - TAPPAN GYM MODERATE EXPANSION: ADDITION							
467	F2010 BUILDING ELEMENTS DEMOLITION						
468	Connections to existing building	1	ls	100,000.00	100,000		
469	SUBTOTAL					100,000	
470							
471	F2020 HAZARDOUS COMPONENTS ABATEMENT						
472	See main summary for HazMat allowance				See Summary		
473	SUBTOTAL						
474							
475							
TOTAL - SELECTIVE BUILDING DEMOLITION							\$100,000

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School

Design Options

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Feasibility Estimate

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
TAPPAN GYM OPTION 2.1 - RENOVATION + ADDITION				
	Sep-18			
RENOVATIONS TO EXISTING GYMNASIUM		67,100	\$81.76	\$5,486,155
ADDITIONS		54,300	\$310.93	\$16,883,639
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)		17,000	\$10.00	\$170,000
REMOVE HAZARDOUS MATERIALS				\$1,345,600
SITework - ALLOWANCE 8% of BUILDING				\$1,789,584
SUB-TOTAL		121,400	\$211.49	\$25,674,978
ESCALATION TO MID-POINT - (assumed 3% PA)	9%			\$2,310,748
DESIGN AND PRICING CONTINGENCY	15%			\$4,197,859
SUB-TOTAL		121,400	\$265.10	\$32,183,585
GENERAL CONDITIONS	6.00%			\$1,931,015
GENERAL REQUIREMENTS	4.00%			\$1,287,343
BONDS	1.15%			\$370,111
INSURANCE	1.25%			\$402,295
PERMIT				Waived
CM FEE	2.50%			\$904,359
CM/GMP CONTINGENCY	3%			\$965,508
PHASING PREMIUM	5.0%			\$1,609,179
TOTAL OF ALL CONSTRUCTION		121,400	\$326.63	\$39,653,395

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
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11-Apr-17

Feasibility Estimate

GFA 67,100

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
TAPPAN GYM OPTION 2.1 - RENOVATIONS					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$66,000			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$138,000	\$204,000	\$3.04	3.7%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$162,100			
B1020	Roof Construction	\$70,000	\$232,100	\$3.46	4.2%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$0			
B2020	Windows/Curtainwall	\$0			
B2030	Exterior Doors	\$0	\$0	\$0.00	0.0%
B30 ROOFING					
B3010	Roof Coverings	\$336,000			
B3020	Roof Openings	\$0	\$336,000	\$5.01	6.1%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$401,500			
C1020	Interior Doors	\$214,500			
C1030	Specialties/Millwork	\$190,905	\$806,905	\$12.03	14.7%
C20 STAIRCASES					
C2010	Stair Construction	\$18,000			
C2020	Stair Finishes	\$12,000	\$30,000	\$0.45	0.5%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$173,800			
C3020	Floor Finishes	\$126,500			
C3030	Ceiling Finishes	\$199,500	\$499,800	\$7.45	9.1%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$0	\$0	\$0.00	0.0%
D20 PLUMBING					
D20	Plumbing	\$649,000	\$649,000	\$9.67	11.8%
D30 HVAC					
D30	HVAC	\$1,204,500	\$1,204,500	\$17.95	22.0%
D40 FIRE PROTECTION					
D40	Fire Protection	\$301,950	\$301,950	\$4.50	5.5%
D50 ELECTRICAL					
D5010	Electrical Systems	\$957,000	\$957,000	\$14.26	17.4%
E10 EQUIPMENT					
E10	Equipment	\$0	\$0	\$0.00	0.0%

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
Brookline, MA

11-Apr-17

Feasibility Estimate

GFA 67,100

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
TAPPAN GYM OPTION 2.1 - RENOVATIONS					
E20	FURNISHINGS				
E2010	Fixed Furnishings	\$0			
E2020	Movable Furnishings	NIC	\$0	\$0.00	0.0%
F10	SPECIAL CONSTRUCTION				
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20	SELECTIVE BUILDING DEMOLITION				
F2010	Building Elements Demolition	\$264,900			
F2020	Hazardous Components Abatement	\$0	\$264,900	\$3.95	4.8%
TOTAL DIRECT COST (Trade Costs)			\$5,486,155	\$81.76	100.0%

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
 Design Options
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Feasibility Estimate

GFA 67,100

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM OPTION 2.1 - RENOVATIONS

GROSS FLOOR AREA CALCULATION						
				Full Reno	Light Code Reno	TOTAL
	Basement Renovation			1,000	15,000	16,000
	First floor Renovation			5,100	11,500	16,600
	Second floor Renovation			500	16,000	16,500
	Mezzanine			-	2,000	2,000
	Third floor Renovation			-	16,000	16,000
				<u>6,600</u>	<u>60,500</u>	<u>67,100</u>
TOTAL GROSS FLOOR AREA (GFA)				67,100 sf		

A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS						
	Allowance for misc foundation work	6,600	sf	10.00	66,000	
	SUBTOTAL					66,000
A1020 SPECIAL FOUNDATIONS						
	No work in this section					
	SUBTOTAL					
A1030 LOWEST FLOOR CONSTRUCTION						
	Cutting and patching; generally at existing slab for new plumbing	16,000	sf	8.00	128,000	
	Equipment pads	1	ls	10,000.00	10,000	
	SUBTOTAL					138,000
TOTAL - FOUNDATIONS						\$204,000

B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION						
	Allowance for bracing steel at full renovation; 2lbs per SF	6	tns	5,000.00	30,000	
	Fireproofing to new steel	1	ls	50,000.00	50,000	
	Openings in structure for MEP systems	67,100	gsf	1.00	67,100	
	Fire stopping floors	1	ls	15,000.00	15,000	
	SUBTOTAL					162,100
B1020 ROOF CONSTRUCTION						
<u>Roof Structure - Steel:</u>						
	New steel for RTU's	1	ls	20,000.00	20,000	
	Miscellaneous steel upgrades to existing roof structure	1	ls	50,000.00	50,000	
	SUBTOTAL					70,000
TOTAL - SUPERSTRUCTURE						\$232,100

B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS						
	SUBTOTAL				Not required	-

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



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Feasibility Estimate

GFA 67,100

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
TAPPAN GYM OPTION 2.1 - RENOVATIONS							
53	B2020 WINDOWS/CURTAINWALL				Not required		
54	SUBTOTAL					-	
55	B2030 EXTERIOR DOORS				Not required		
56	SUBTOTAL					-	
57							
58							
59	TOTAL - EXTERIOR CLOSURE						
60							
61							
62	B30 ROOFING						
63							
64	B3010 ROOF COVERINGS						
65	Replace roofing systems	16,600	sf		Not required		
66	Replace roofing systems at Pool	12,000	sf	28.00	336,000		
67	SUBTOTAL					336,000	
68							
69	B3020 ROOF OPENINGS						
70	No work in this section						
71	SUBTOTAL					-	
72							
73	TOTAL - ROOFING						
74							\$336,000
75							
76	C10 INTERIOR CONSTRUCTION						
77							
78	C1010 PARTITIONS						
79	Replace walls at full renovation	6,600	gsf	15.00	99,000		
80	Modify existing walls at light code reno areas	60,500	gsf	5.00	302,500		
81	SUBTOTAL					401,500	
82							
83	C1020 INTERIOR DOORS						
84	Remove and replace doors at full renovation	6,600	gsf	5.00	33,000		
85	Modify existing doors at light code reno areas	60,500	gsf	3.00	181,500		
86	SUBTOTAL					214,500	
87							
88	C1030 SPECIALTIES / MILLWORK						
89	Toilet Partitions and accessories	67,100	gsf	0.80	53,680		
90	Lockers, full height	67,100	gsf	1.50	100,650		
91							
92	055000 MISCELLANEOUS METALS						
93	Miscellaneous metals	6,600	sf	1.00	6,600		
94							
95	061000 ROUGH CARPENTRY						
96	Rough blocking	6,600	sf	0.50	3,300		
97							
98	070001 WATERPROOFING, DAMPPROOFING AND CAULKING						
99	Miscellaneous sealants throughout building	6,600	sf	1.50	9,900		
100							
101	101400 SIGNAGE						
102	Code compliant signage	67,100	sf	0.25	16,775		
103	SUBTOTAL					190,905	
104							
105	TOTAL - INTERIOR CONSTRUCTION						
106							\$806,905

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



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GFA 67,100

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM OPTION 2.1 - RENOVATIONS

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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

New handrails and guardrails @ stairs; code upgrades 3 flt 6,000.00 18,000

SUBTOTAL 18,000

C2020 STAIR FINISHES

Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips 3 flt 4,000.00 12,000

SUBTOTAL 12,000

TOTAL - STAIRCASES \$30,000

C30 INTERIOR FINISHES

C3010 WALL FINISHES

Patch wall finishes at light code upgrade areas 60,500 sf 2.00 121,000

Miscellaneous walls finishes to full renovated areas 6,600 gsf 8.00 52,800

SUBTOTAL 173,800

C3020 FLOOR FINISHES

Patch floors at light code upgrade areas 60,500 sf 1.00 60,500

New floor finishes to full renovated areas 6,600 gsf 10.00 66,000

SUBTOTAL 126,500

C3030 CEILING FINISHES

Gym & Pavilion ceiling - exposed 32,000 sf assume no work

Replace ceilings throughout 28,500 gsf 7.00 199,500

SUBTOTAL 199,500

TOTAL - INTERIOR FINISHES \$499,800

D10 CONVEYING SYSTEMS

SUBTOTAL -

TOTAL - CONVEYING SYSTEMS

D20 PLUMBING

D20 PLUMBING, GENERALLY

Plumbing allowance at full renovation area 6,600 sf 25.00 165,000

Plumbing allowance at light code renovation area 60,500 sf 8.00 484,000

SUBTOTAL 649,000

TOTAL - PLUMBING \$649,000

D30 HVAC

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 67,100

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM OPTION 2.1 - RENOVATIONS

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D30 HVAC, GENERALLY

HVAC allowance at full renovation area	6,600	sf	45.00	297,000		
HVAC allowance at light code renovation area	60,500	sf	15.00	907,500		
SUBTOTAL						1,204,500

TOTAL - HVAC						\$1,204,500
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D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

New fire protection system throughout	67,100	sf	4.50	301,950		
SUBTOTAL						301,950

TOTAL - FIRE PROTECTION						\$301,950
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D50 ELECTRICAL

Electrical system at full renovation area	6,600	sf	35.00	231,000		
Electrical system at light code upgrade area	60,500	sf	12.00	726,000		
SUBTOTAL						957,000

TOTAL - ELECTRICAL						\$957,000
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E10 EQUIPMENT

E10 EQUIPMENT, GENERALLY

Gym equipment					assume ETR	
SUBTOTAL						-

TOTAL - EQUIPMENT						
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E20 FURNISHINGS

E2010 FIXED FURNISHINGS

Window blinds					assume ETR	
SUBTOTAL						-

E2020 MOVABLE FURNISHINGS

All movable furnishings to be provided and installed by owner						NIC
SUBTOTAL						

TOTAL - FURNISHINGS						
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F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION

SUBTOTAL						-
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OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
 Design Options
 Brookline, MA

11-Apr-17

Feasibility Estimate

GFA 67,100

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
TAPPAN GYM OPTION 2.1 - RENOVATIONS							
TOTAL - SPECIAL CONSTRUCTION							
F20 SELECTIVE BUILDING DEMOLITION							
F2010 BUILDING ELEMENTS DEMOLITION							
	Remove exterior closure elements				ETR		
	Remove roofing at Pool	12,000	sf	2.00	24,000		
	Interior demolition; gut	6,600	gsf	8.00	52,800		
	Interior demolition at light code upgrade areas	60,500	gsf	3.00	181,500		
	Temporary enclosures/protection	6,600	sf	1.00	6,600		
	SUBTOTAL					264,900	
F2020 HAZARDOUS COMPONENTS ABATEMENT							
	See summary						
	SUBTOTAL						
TOTAL - SELECTIVE BUILDING DEMOLITION							\$264,900

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
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Feasibility Estimate

GFA 54,300

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
TAPPAN GYM OPTION 2.1 - ADDITIONS					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$377,639			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$275,256	\$652,895	\$12.02	3.9%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$428,933			
A2020	Basement Walls	\$333,117	\$762,050	\$14.03	4.5%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$1,776,696			
B1020	Roof Construction	\$619,500	\$2,396,196	\$44.13	14.2%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$784,182			
B2020	Windows	\$1,610,074			
B2030	Exterior Doors	\$69,400	\$2,463,656	\$45.37	14.6%
B30 ROOFING					
B3010	Roof Coverings	\$425,200			
B3020	Roof Openings	\$200,000	\$625,200	\$11.51	3.7%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$814,500			
C1020	Interior Doors	\$271,500			
C1030	Specialties/Millwork	\$379,540	\$1,465,540	\$26.99	8.7%
C20 STAIRCASES					
C2010	Stair Construction	\$405,000			
C2020	Stair Finishes	\$94,308	\$499,308	\$9.20	3.0%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$543,000			
C3020	Floor Finishes	\$820,320			
C3030	Ceiling Finishes	\$380,100	\$1,743,420	\$32.11	10.3%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$160,000	\$160,000	\$2.95	0.9%
D20 PLUMBING					
D20	Plumbing	\$1,313,517	\$1,313,517	\$24.19	7.8%

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
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Feasibility Estimate

GFA 54,300

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
TAPPAN GYM OPTION 2.1 - ADDITIONS					
D30 HVAC					
D30	HVAC	\$2,467,624	\$2,467,624	\$45.44	14.6%
D40 FIRE PROTECTION					
D40	Fire Protection	\$244,350	\$244,350	\$4.50	1.4%
D50 ELECTRICAL					
D5010	Complete System	\$1,882,195	\$1,882,195	\$34.66	11.1%
E10 EQUIPMENT					
E10	Equipment	\$40,000	\$40,000	\$0.74	0.2%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$117,688			
E2020	Movable Furnishings	NIC	\$117,688	\$2.17	0.7%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$50,000			
F2020	Hazardous Components Abatement	\$0	\$50,000	\$0.92	0.3%
TOTAL DIRECT COST (Trade Costs)			\$16,883,639	\$310.93	100.0%

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
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Feasibility Estimate

GFA 54,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM OPTION 2.1 - ADDITIONS

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GROSS FLOOR AREA CALCULATION

Basement	12,300
First Floor	13,600
Second Floor	14,400
Mezzanine	7,000
Third floor	7,000

TOTAL GROSS FLOOR AREA (GFA)	54,300 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior; 2'-6" wide x 12" deep

Formwork	240	sf	12.00	2,880
Re-bar	1,200	lbs.	1.32	1,584
Concrete material; 3,000 psi	12	cy	132.00	1,584
Placing concrete	12	cy	90.00	1,080

Foundation wall; 14" thick x 36" high

Formwork	720	sf	17.00	12,240
Re-bar	1,440	lbs.	1.32	1,901
Concrete material; 3,000 psi	17	cy	132.00	2,244
Placing concrete	17	cy	90.00	1,530

Grade Beam at interior; 2'-0" wide x 2'-0" deep

Formwork	760	sf	12.00	9,120
Re-bar	12,350	lbs.	1.32	16,302
Concrete material; 3,000 psi	31	cy	132.00	4,092
Placing concrete	31	cy	90.00	2,790

Spread Footings at interior; 11'-6" x 11'-6" x 2'-6" deep

Formwork	2,530	sf	16.00	40,480
Re-bar	29,700	lbs.	1.32	39,204
Concrete material; 3,000 psi	296	cy	132.00	39,072
Placing concrete	296	cy	90.00	26,640
Set anchor bolts grout plates	88	ea	165.00	14,520

Spread Footings at perimeter; 8'-6" x 8'-6" x 2'-0" deep

Formwork	1,292	sf	16.00	20,672
Re-bar	10,640	lbs.	1.32	14,045
Concrete material; 3,000 psi	112	cy	132.00	14,784
Placing concrete	112	cy	90.00	10,080
Set anchor bolts grout plates	76	ea	165.00	12,540

Piers/Pilasters; 22" x 22"

Formwork 18" x 18"	456	sf	18.00	8,208
Re-bar	1,440	lbs	1.32	1,901
Concrete material; 3,000 psi	12	cy	132.00	1,584
Placing concrete	12	cy	150.00	1,800

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	360	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	360	sf	3.00	1,080
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OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 54,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
TAPPAN GYM OPTION 2.1 - ADDITIONS								
56	312000 EARTHWORK							
57	<u>Continuous footings</u>							
58	Excavation	89	cy	25.00	2,225			
59	Remove off site	89	cy	20.00	1,780			
60	Backfill with imported material	60	cy	38.00	2,280			
61	<u>Spread footings</u>							
62	Excavation	872	cy	25.00	21,800			
63	Remove off site	872	cy	20.00	17,440			
64	Backfill with imported material	464	cy	38.00	17,632			
65	<u>Grade Beams</u>							
66	Excavation	141	cy	25.00	3,525			
67	Remove off site	141	cy	20.00	2,820			
68	Backfill with imported material	110	cy	38.00	4,180			
69	SUBTOTAL					377,639		
70								
71	A1020 SPECIAL FOUNDATIONS							
72	SUBTOTAL							
73								
74	A1030 LOWEST FLOOR CONSTRUCTION							
75	<u>New Slab on grade, 5" thick</u>							
76	Gravel fill, 12"	504	cy	36.00	18,144			
77	Rigid insulation	13,600	sf	2.25	30,600			
78	Vapor barrier	13,600	sf	0.75	10,200			
79	Compact existing sub-grade	13,600	sf	0.50	6,800			
80	Mesh reinforcing 15% lap	15,640	sf	0.80	12,512			
81	Concrete - 5" thick; 4,000 psi	222	cy	125.00	27,750			
82	Placing concrete	222	cy	45.00	9,990			
83	Finishing and curing concrete	13,600	sf	1.50	20,400			
84	Control joints - saw cut	13,600	sf	0.10	1,360			
85	<u>Miscellaneous</u>							
86	Foundations against existing building	370	lf	250.00	92,500			
87	New Elevator pit	1	ea	35,000.00	35,000			
88	Equipment pads	1	ls	10,000.00	10,000			
89	SUBTOTAL					275,256		
90								
91	TOTAL - FOUNDATIONS						\$652,895	
92								
93								
94	A20 BASEMENT CONSTRUCTION							
95								
96	A2010 BASEMENT EXCAVATION							
97	Excavation for basement	3,994	cy	12.00	47,928			
98	Export off site	3,994	cy	20.00	79,880			
99	Temporary for sheeting and shoring	5,475	sf	55.00	301,125			
100	SUBTOTAL					428,933		
101								
102	A2020 BASEMENT WALLS							
103	<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>							
104	Formwork	730	sf	12.00	8,760			
105	Re-bar	3,650	lbs.	1.32	4,818			

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
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Feasibility Estimate

GFA 54,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST	
TAPPAN GYM OPTION 2.1 - ADDITIONS								
106	Concrete material; 3,000 psi	37	cy	132.00	4,884			
107	Placing concrete	37	cy	90.00	3,330			
108	<u>Basement wall; 14" thick</u>							
109	Formwork	10,950	sf	17.00	186,150			
110	Re-bar	21,900	lbs.	1.32	28,908			
111	Concrete material; 3,000 psi	261	cy	132.00	34,452			
112	Placing concrete	261	cy	90.00	23,490			
113	Waterproofing retaining wall	5,475	sf	7.00	38,325			
114	SUBTOTAL					333,117		
115								
116	TOTAL - BASEMENT CONSTRUCTION						\$762,050	
117								
118								
119	B10 SUPERSTRUCTURE							
120		15.32	lbs/sf		-			
121	B1010 FLOOR CONSTRUCTION	416	tns		-			
122	New Addition	40,700	sf					
123	<u>Floor Structure - Steel:</u>							
124	Steel beams and columns to new addition; 14.8#/SF	301	tns	3,800.00	1,143,800			
125	Premium for HSS	75	tns	300.00	22,500			
126	Shear studs	8,140	ea	2.50	20,350			
127	<u>Floor Structure</u>							
128	2" 18 Ga. Metal galvanized floor Deck	40,700	sf	3.75	152,625			
129	WWF reinforcement	46,805	sf	0.80	37,444			
130	Concrete Fill to metal deck; 6" Light Weight	950	cy	160.00	152,000			
131	Place and finish concrete	40,700	sf	2.00	81,400			
132	Rebar to decks	12,210	lbs	1.20	14,652			
133	Misc. angles	40,700	sf	0.50	20,350			
134	<u>Miscellaneous</u>							
135	Fire proofing to columns and beams	40,700	sf	2.25	91,575			
136	Premium to build over existing pool building roof				Not Required			
137	Intumescent paint	1	ls	25,000.00	25,000			
138	Fire stopping floors	1	ls	15,000.00	15,000			
139	SUBTOTAL					1,776,696		
140								
141	B1020 ROOF CONSTRUCTION							
142	New Addition	14,400	sf					
143	<u>Roof Structure - Steel:</u>							
144	Steel beams and columns to new addition; 16#/SF; premium for pitched roof	115	tns	4,000.00	460,000			
145	Premium for HSS	29	tns	300.00	8,700			
146	Exposed steel	1	ls	50,000.00	50,000			
147	<u>Roof Structure</u>							
148	Acoustic deck allowance	14,400	sf	7.00	100,800			
149	<u>Miscellaneous</u>							
150	Fire proofing to columns, beams and deck	14,400	sf	3.00	Not Required			
151	SUBTOTAL					619,500		
152								
153	TOTAL - SUPERSTRUCTURE						\$2,396,196	

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



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Feasibility Estimate

GFA 54,300

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM OPTION 2.1 - ADDITIONS

B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Exterior Wall Area - Solid Assume 40%

8,590 sf

042000 MASONRY

Brick veneer, 3 color; 85% of solid area (not including Field house)

7,302 sf 40.00 292,080

Staging to exterior wall

8,590 sf 4.00 34,360

055000 MISC. METALS

Stainless steel sign at main entrance

1 ls 20,000.00 20,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Air barrier

8,590 sf 6.50 55,835

Air barrier/flashing at windows

7,579 lf 6.25 47,369

Miscellaneous sealants to closure

8,590 sf 1.00 8,590

072100 THERMAL INSULATION

Insulation

8,590 sf 2.25 19,328

076400 CLADDING

Metal panel; 15% of solid area

1,289 sf 60.00 77,340

Roof equipment screen

1 ls 100,000.00 100,000

092900 GYPSUM BOARD ASSEMBLIES

6" metal stud backup

8,590 sf 9.00 77,310

Gypsum Sheathing

8,590 sf 2.75 23,623

Drywall lining to interior face of stud backup

8,590 sf 3.30 28,347

SUBTOTAL

784,182

B2020 WINDOWS

Exterior Wall Area - Glazed Assume 60%

12,884 sf

061000 ROUGH CARPENTRY

Wood blocking at openings

7,579 lf 8.00 60,632

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant

7,579 lf 8.50 64,422

080001 METAL WINDOWS

Windows, double glazed; 20% of glazed area

2,577 sf 90.00 231,930

Curtainwall, double glazed; 80% of glazed area

10,307 sf 120.00 1,236,840

089000 LOUVERS

Louvers

250 sf 65.00 16,250

SUBTOTAL

1,610,074

B2030 EXTERIOR DOORS

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



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GFA 54,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
TAPPAN GYM OPTION 2.1 - ADDITIONS							
206	Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000		
207	HM doors, frames and hardware- Double	2	pr	2,000.00	4,000		
208	Backer rod & double sealant	200	lf	4.00	800		
209	Wood blocking at openings	200	lf	3.00	600		
210	SUBTOTAL					69,400	
TOTAL - EXTERIOR CLOSURE							\$2,463,656
B30 ROOFING							
B3010 ROOF COVERINGS							
218	New roofing complete	12,900	sf	28.00	361,200		
219	Allowance for soffits; metal panels with backup system	800	sf	80.00	64,000		
220	SUBTOTAL					425,200	
B3020 ROOF OPENINGS							
223	Skylights, allow	1,500	sf	130.00	195,000		
224	Roof hatch	2	loc	2,500.00	5,000		
225	SUBTOTAL					200,000	
TOTAL - ROOFING							\$625,200
C10 INTERIOR CONSTRUCTION							
C1010 PARTITIONS							
233	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	54,300	gsf	15.00	814,500		
234	SUBTOTAL					814,500	
C1020 INTERIOR DOORS							
237	Interior doors, frames and hardware	54,300	gsf	5.00	271,500		
238	SUBTOTAL					271,500	
C1030 SPECIALTIES / MILLWORK							
241	Toilet Partitions and accessories	54,300	gsf	0.80	43,440		
242	Backer panels in electrical closets	1	ls	1,000.00	1,000		
243	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	54,300	sf	1.00	54,300		
244	Room Signs	54,300	gsf	0.40	21,720		
245	Fire extinguisher cabinets	18	ea	350.00	6,300		
246	Lockers	54,300	gsf	1.60	86,880		
247	Janitors Work Shop Accessories	1	ls	1,500.00	1,500		
248	Janitors Closet Accessories	5	rms	300.00	1,500		
249	Display cases	54,300	gsf	0.25	13,575		
250	Miscellaneous metals throughout building	54,300	sf	1.50	81,450		
251	Miscellaneous sealants throughout building	54,300	sf	1.25	67,875		
252	SUBTOTAL					379,540	
TOTAL - INTERIOR CONSTRUCTION							\$1,465,540

OPTIONAL PROJECT

Tappan Gym 2.1 Min. Moderate Expansion



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GFA 54,300

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
TAPPAN GYM OPTION 2.1 - ADDITIONS							
C20 STAIRCASES							
C2010 STAIR CONSTRUCTION							
	Metal pan stair; egress stair	15	flt	25,000.00	375,000		
	Concrete fill to stairs	15	flt	2,000.00	30,000		
	SUBTOTAL					405,000	
C2020 STAIR FINISHES							
	High performance coating to stairs including all railings etc.	15	flt	3,000.00	45,000		
	Rubber tile at stairs - landings	1,500	sf	10.00	15,000		
	Rubber tile at stairs - treads & risers	1,800	lft	19.06	34,308		
	SUBTOTAL					94,308	
TOTAL - STAIRCASES							\$499,308
C30 INTERIOR FINISHES							
C3010 WALL FINISHES							
	Wall finishes	54,300	sf	10.00	543,000		
	SUBTOTAL					543,000	
C3020 FLOOR FINISHES							
	Practice Gym flooring	6,400	sf	18.00	115,200		
	Floor finishes	47,900	sf	12.00	574,800		
	Moisture mitigation	43,440	sf	3.00	130,320		
	SUBTOTAL					820,320	
C3030 CEILING FINISHES							
	Ceiling finishes	54,300	sf	7.00	380,100		
	SUBTOTAL					380,100	
TOTAL - INTERIOR FINISHES							\$1,743,420
D10 CONVEYING SYSTEMS							
D1010 ELEVATOR							
	New elevator; 4 stop; oversize; 5,000 lbs	1	ea	160,000.00	160,000		
	SUBTOTAL					160,000	
TOTAL - CONVEYING SYSTEMS							\$160,000
D20 PLUMBING							
D20 PLUMBING, GENERALLY							
	<u>Equipment</u>						
	Plumbing equipment	54,300	sf	5.00	271,500		
	<u>Plumbing Fixtures & Specialties</u>						
	Miscellaneous plumbing fixtures	54,300	sf	6.00	325,800		
	<u>Domestic Water Type L Copper Pipe</u>						
	Domestic water pipe with fittings & hangers	54,300	sf	4.00	217,200		
	Domestic water pipe insulation	54,300	sf	2.00	108,600		
	<u>Sanitary Waste And Vent Pipe w/ Hangers</u>						

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
TAPPAN GYM OPTION 2.1 - ADDITIONS								
312	Sanitary waste pipe with fittings & hangers	54,300	sf	3.50	190,050			
313	Kitchen waste pipe with fittings & hangers	54,300	sf	1.00	54,300			
314	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
315	Storm water pipe with fittings & hangers	54,300	sf	1.25	67,875			
316	Pipe insulation on horizontal runs	54,300	sf	0.20	10,860			
317	<u>Gas And Fuel Distribution Pipe</u>							
318	Gas pipe with fittings & hangers	54,300	sf	0.75	40,725			
319	<u>Miscellaneous</u>							
320	Coordination & BIM	54,300	sf	0.25	13,575			
321	Coring, sleeves & firestopping	54,300	sf	0.03	1,629			
322	Commissioning support	54,300	sf	0.08	4,344			
323	Fees & permits	54,300	sf	0.13	7,059			
324	SUBTOTAL					1,313,517		
325								
326	TOTAL - PLUMBING							\$1,313,517
327								
328								
329	D30 HVAC							
330								
331	D30 HVAC, GENERALLY							
332	<u>HVAC Equipment</u>							
333	HVAC equipment	54,300	sf	1.00	54,300			
334	<u>Pumps</u>							
335	Pumps	54,300	sf	0.28	15,204			
336	<u>Air distribution</u>							
337	RTU's Gas fired heating with DX cooling	103,170	cfm	9.25	954,323			
338	MAU unit gas fired heating	5,000	cfm	3.25	16,250			
339	Air distribution equipment	54,300	sf	6.00	325,800			
340	Exhaust fans	54,300	sf	0.50	27,150			
341	<u>Sheet metal & Accessories</u>							
342	Sheet metal & accessories	54,300	sf	9.00	488,700			
343	<u>Piping</u>							
344	<u>Hot Water Piping</u>							
345	Hot water piping with fittings & hangers	54,300	sf	2.00	108,600			
346	<u>Chilled Water Piping</u>							
347	Chilled water piping with fittings & hangers	54,300	sf	0.55	29,865			
348	<u>Refrigerant Piping</u>							
349	Refrigerant piping with fittings & hangers	54,300	sf	0.10	5,430			
350	<u>Condensate Drain Piping</u>							
351	Condensate drain piping with fittings & hangers	54,300	sf	0.15	8,145			
352	<u>Piping Insulation</u>							
353	Piping insulation	54,300	sf	1.50	81,450			
354	<u>Automatic Temperature Controls</u>							
355	Automatic temperature controls DDC	54,300	sf	4.50	244,350			
356	Balancing							
357	System testing & balancing	54,300	sf	0.60	32,580			
358	<u>Miscellaneous</u>							
359	Commissioning support	54,300	sf	0.42	22,806			
360	Coring, sleeves & fire stopping	54,300	sf	0.17	9,231			
361	Rigging & equipment rental	54,300	sf	0.42	22,806			
362	Vibration & seismic restraints	54,300	sf	0.38	20,634			

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
Brookline, MA

11-Apr-17

Feasibility Estimate

GFA 54,300

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
TAPPAN GYM OPTION 2.1 - ADDITIONS							
	SUBTOTAL					2,467,624	
TOTAL - HVAC							\$2,467,624
D40 FIRE PROTECTION							
D40	FIRE PROTECTION, GENERALLY						
	Fire protection system	54,300	gsf	4.50	244,350		
	SUBTOTAL					244,350	
TOTAL - FIRE PROTECTION							\$244,350
D50 ELECTRICAL							
D5010	SERVICE & DISTRIBUTION						
	<u>Gear & Distribution</u>						
	Normal power distribution switchgear & feeders based on 4000A 480/277V	54,300	sf	5.00	271,500		
	<u>Emergency power</u>						
	Emergency power distribution switchgear & feeders	54,300	sf	3.00	162,900		
	<u>Equipment Wiring</u>						
	Equipment wiring	54,300	sf	2.00	108,600		
	SUBTOTAL					543,000	
D5020	LIGHTING & POWER						
	<u>Lighting & Branch Power</u>						
	Lighting fixtures (LED as BOD) with installation labor	54,300	sf	5.00	271,500		
	<u>Lighting control system</u>						
	Lighting controls including daylight harvesting system, allow	54,300	sf	1.15	62,445		
	<u>Branch devices</u>						
	Branch devices	54,300	sf	0.50	27,150		
	<u>Lighting and branch circuitry</u>						
	Lighting & branch circuitry	54,300	sf	5.50	298,650		
	SUBTOTAL					659,745	
D5030	COMMUNICATION & SECURITY SYSTEMS						
	<u>Fire Alarm</u>						
	Fire alarm system	54,300	sf	2.00	108,600		
	<u>Bi-Directional System</u>						
	BDA system	54,300	sf	0.50	27,150		
	<u>Security System</u>						
	Security System	54,300	sf	2.50	135,750		
	<u>Telephone/Data/CATV</u>						
	Network switches, PBX, IP, VP, CCTV (By owner)					By Owner	
	Telecommunications rough in	54,300	sf	1.50	81,450		
	Telecommunications devices and cabling	54,300	sf	2.00	108,600		
	<u>Public Address/Clock System</u>						
	PA/Master Clock system	54,300	sf	1.25	67,875		
	<u>Audio Visual (rough-in and power only)</u>						
	AV equipment					By Owner	
	Rough-In conduit and backboxes only	54,300	sf	0.50	27,150		

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
Brookline, MA

11-Apr-17

Feasibility Estimate

GFA 54,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST	
TAPPAN GYM OPTION 2.1 - ADDITIONS								
418	<u>Gymnasium</u>							
419	Sound system	1	ls	10,000.00	10,000			
420	Scoreboard/ shot clocks with feed and connection	1	ea	15,000.00	15,000			
421	Misc. gym equipment feed and connections	1	ls	15,000.00	15,000			
422	SUBTOTAL					596,575		
423								
424	D5040 OTHER ELECTRICAL SYSTEMS							
425	<u>Miscellaneous</u>							
426	Temp power and lights	54,300	sf	0.45	24,435			
427	Seismic restraints	1	ls	15,000.00	15,000			
428	Fees & Permits	54,300	ls	0.80	43,440			
429	SUBTOTAL					82,875		
430								
431	TOTAL - ELECTRICAL						\$1,882,195	
432								
433								
434	E10 EQUIPMENT							
435								
436	E10 EQUIPMENT, GENERALLY							
437	Practice Gym wall pads	1	ls	20,000.00	20,000			
438	Basketball backstops; swing up; electric operated	2	loc	10,000.00	20,000			
439	SUBTOTAL					40,000		
440								
441	TOTAL - EQUIPMENT						\$40,000	
442								
443								
444	E20 FURNISHINGS							
445								
446	E2010 FIXED FURNISHINGS							
447	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500			
448	Window blinds	12,884	sf	7.00	90,188			
449	SUBTOTAL					117,688		
450								
451	E2020 MOVABLE FURNISHINGS							
452	All movable furnishings to be provided and installed by owner							
453	SUBTOTAL					NIC		
454								
455	TOTAL - FURNISHINGS						\$117,688	
456								
457								
458	F10 SPECIAL CONSTRUCTION							
459								
460	F10 SPECIAL CONSTRUCTION							
461	No items in this section							
462	SUBTOTAL							
463								
464	TOTAL - SPECIAL CONSTRUCTION							
465								
466								
467	F20 SELECTIVE BUILDING DEMOLITION							
468								
469	F2010 BUILDING ELEMENTS DEMOLITION							
470	Connections to existing building	1	ls	50,000.00	50,000			
471	SUBTOTAL					50,000		
472								
473	F2020 HAZARDOUS COMPONENTS ABATEMENT							
474	See main summary for HazMat allowance					See Summary		

OPTIONAL PROJECT - Tappan Gym 2.1 Min. Moderate Expansion



Brookline High School
Design Options
Brookline, MA

11-Apr-17

Feasibility Estimate

GFA 54,300

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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TAPPAN GYM OPTION 2.1 - ADDITIONS

475 SUBTOTAL

476	TOTAL - SELECTIVE BUILDING DEMOLITION						\$50,000
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OPTION 3 - Tappan Gym 3. Ed. Plan with Field House Summary



Brookline High School
 Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION + ADDITION

	Sep-18		
RENOVATIONS TO EXISTING GYMNASIUM	60,130	\$208.43	\$12,532,871
ADDITIONS	64,050	\$298.94	\$19,147,417
DEMOLISH EXISTING SCHOOL - PARTIAL (phased)	20,930	\$10.00	\$209,300
REMOVE HAZARDOUS MATERIALS			\$1,296,960
SITework - ALLOWANCE 8% of BUILDING			\$2,534,423
SUB-TOTAL	124,180	\$287.65	\$35,720,971
ESCALATION TO MID-POINT - (assumed 3% PA)	9%		\$3,214,887
DESIGN AND PRICING CONTINGENCY	15%		\$5,840,379
SUB-TOTAL	124,180	\$360.58	\$44,776,237
GENERAL CONDITIONS	6.00%		\$2,686,574
GENERAL REQUIREMENTS	4.00%		\$1,791,049
BONDS	1.15%		\$514,927
INSURANCE	1.25%		\$559,703
PERMIT			Waived
CM FEE	2.50%		\$1,258,212
CM/GMP CONTINGENCY	3%		\$1,343,287
PHASING PREMIUM	5.0%		\$2,238,812
TOTAL OF ALL CONSTRUCTION	124,180	\$444.26	\$55,168,801

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$158,200			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$141,560	\$299,760	\$4.99	2.4%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$339,310			
B1020	Roof Construction	\$70,000	\$409,310	\$6.81	3.3%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$660,184			
B2020	Windows/Curtainwall	\$648,870			
B2030	Exterior Doors	\$20,620	\$1,329,674	\$22.11	10.6%
B30 ROOFING					
B3010	Roof Coverings	\$441,840			
B3020	Roof Openings	\$0	\$441,840	\$7.35	3.5%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$901,950			
C1020	Interior Doors	\$300,650			
C1030	Specialties/Millwork	\$333,722	\$1,536,322	\$25.55	12.3%
C20 STAIRCASES					
C2010	Stair Construction	\$30,000			
C2020	Stair Finishes	\$20,000	\$50,000	\$0.83	0.4%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$481,040			
C3020	Floor Finishes	\$702,308			
C3030	Ceiling Finishes	\$346,654	\$1,530,002	\$25.44	12.2%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$0	\$0	\$0.00	0.0%
D20 PLUMBING					
D20	Plumbing	\$1,082,340	\$1,082,340	\$18.00	8.6%
D30 HVAC					
D30	HVAC	\$2,705,850	\$2,705,850	\$45.00	21.6%
D40 FIRE PROTECTION					
D40	Fire Protection	\$270,585	\$270,585	\$4.50	2.2%
D50 ELECTRICAL					
D5010	Electrical Systems	\$2,078,311	\$2,078,311	\$34.56	16.6%
E10 EQUIPMENT					
E10	Equipment	\$175,000	\$175,000	\$2.91	1.4%

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION					
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$40,233			
E2020	Movable Furnishings	NIC	\$40,233	\$0.67	0.3%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 SELECTIVE BUILDING DEMOLITION					
F2010	Building Elements Demolition	\$583,644			
F2020	Hazardous Components Abatement	\$0	\$583,644	\$9.71	4.7%
TOTAL DIRECT COST (Trade Costs)			\$12,532,871	\$208.43	100.0%

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION

GROSS FLOOR AREA CALCULATION

BASEMENT RENOVATION				15,820		
FIRST FLOOR RENOVATION				12,750		
SECOND FLOOR RENOVATION				15,780		
THIRD FLOOR RENOVATION				15,780		

TOTAL GROSS FLOOR AREA (GFA)				60,130	sf	
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Allowance for new footings at bracing	15,820	sf	10.00	158,200		
SUBTOTAL						158,200

A1020 SPECIAL FOUNDATIONS

No work in this section
SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

Cutting and patching; generally at existing slab for new plumbing	15,820	sf	8.00	126,560		
Equipment pads	1	ls	15,000.00	15,000		
SUBTOTAL						141,560

TOTAL - FOUNDATIONS						\$299,760
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Allowance for bracing steel at full renovation; 2lbs per SF	44	tns	5,000.00	220,000		
Fireproofing to new steel	1	ls	50,000.00	50,000		
Openings in structure for MEP systems	44,310	gsf	1.00	44,310		
Fire stopping floors	1	ls	25,000.00	25,000		
SUBTOTAL						339,310

B1020 ROOF CONSTRUCTION

Roof Structure - Steel:

New steel for RTU's	1	ls	20,000.00	20,000		
Miscellaneous steel upgrades to existing roof structure	1	ls	50,000.00	50,000		
SUBTOTAL						70,000

TOTAL - SUPERSTRUCTURE						\$409,310
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Repair, minor repoint and clean all exterior walls; brick and concrete	14,897	sf				
	10,310	sf	20.00	206,200		
New metal panel at Field House level	4,587	sf	60.00	275,220		

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION								
52	Insulate exterior walls to meet code; new furred walls at perimeter	14,897	sf	12.00	178,764			
53	SUBTOTAL					660,184		
54								
55	B2020 WINDOWS/CURTAINWALL							
56	Replace existing windows	1,819	sf	90.00	163,710			
57	Replace existing Kalwall at Field House	7,464	sf	65.00	485,160			
58	SUBTOTAL					648,870		
59								
60	B2030 EXTERIOR DOORS							
61	Replace exterior door, double	2	pr	8,500.00	17,000			
62	Replace exterior door, single	1	ea	2,000.00	2,000			
63	Backer rod & double sealant	135	lf	9.00	1,215			
64	Wood blocking at openings	135	lf	3.00	405			
65	SUBTOTAL					20,620		
66								
67	TOTAL - EXTERIOR CLOSURE						\$1,329,674	
68								
69								
70	B30 ROOFING							
71								
72	B3010 ROOF COVERINGS							
73	Replace roofing systems	15,780	sf	28.00	441,840			
74	SUBTOTAL					441,840		
75								
76	B3020 ROOF OPENINGS							
77	No work in this section							
78	SUBTOTAL					-		
79								
80	TOTAL - ROOFING						\$441,840	
81								
82								
83	C10 INTERIOR CONSTRUCTION							
84								
85	C1010 PARTITIONS							
86	Replace walls at full renovation	60,130	gsf	15.00	901,950			
87	SUBTOTAL					901,950		
88								
89	C1020 INTERIOR DOORS							
90	Remove and replace doors at full renovation	60,130	gsf	5.00	300,650			
91	SUBTOTAL					300,650		
92								
93	C1030 SPECIALTIES / MILLWORK							
94	Toilet Partitions and accessories	60,130	gsf	0.80	48,104			
95	Lockers, full height	60,130	gsf	1.50	90,195			
96								
97	055000 MISCELLANEOUS METALS							
98	Miscellaneous metals throughout building	60,130	sf	1.00	60,130			
99								
100	061000 ROUGH CARPENTRY							
101	Rough blocking	60,130	sf	0.50	30,065			
102								
103	070001 WATERPROOFING, DAMPPROOFING AND CAULKING							
104	Miscellaneous sealants throughout building	60,130	sf	1.50	90,195			
105								

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
 Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION

106								
107	101400 SIGNAGE							
108	Code compliant signage	60,130	sf	0.25	15,033			
109	SUBTOTAL					333,722		
110								
111	TOTAL - INTERIOR CONSTRUCTION						\$1,536,322	

C20 STAIRCASES

116	C2010 STAIR CONSTRUCTION							
117	New handrails and guardrails @ stairs; code upgrades	5	flt	6,000.00	30,000			
118	SUBTOTAL					30,000		
119								
120	C2020 STAIR FINISHES							
121	Replace stair floor finish w/ rubber and add compliant stair nosing and tactile indicator strips	5	flt	4,000.00	20,000			
122	SUBTOTAL					20,000		
123								
124	TOTAL - STAIRCASES						\$50,000	

C30 INTERIOR FINISHES

129	C3010 WALL FINISHES							
130	Miscellaneous walls finishes to full renovated areas	60,130	gsf	8.00	481,040			
131	SUBTOTAL					481,040		
132								
133	C3020 FLOOR FINISHES							
134	Gym flooring	12,626	sf	18.00	227,268			
135	New floor finishes throughout	47,504	gsf	10.00	475,040			
136	SUBTOTAL					702,308		
137								
138	C3030 CEILING FINISHES							
139	Paint exposed Gym ceiling	12,626	sf	3.00	37,878			
140	Replace existing ceilings throughout	47,504	gsf	6.50	308,776			
141	SUBTOTAL					346,654		
142								
143	TOTAL - INTERIOR FINISHES						\$1,530,002	

D10 CONVEYING SYSTEMS

148	SUBTOTAL					-		
149								
150	TOTAL - CONVEYING SYSTEMS							

D20 PLUMBING

155	D20 PLUMBING, GENERALLY						
156	Plumbing allowance	60,130	sf	18.00	1,082,340		
157	SUBTOTAL					1,082,340	

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
 Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION

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TOTAL - PLUMBING							\$1,082,340
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D30 HVAC

D30 HVAC, GENERALLY							
HVAC allowance	60,130	sf	45.00	2,705,850			
SUBTOTAL						2,705,850	

TOTAL - HVAC							\$2,705,850
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D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY							
New fire protection system	60,130	sf	4.50	270,585			
SUBTOTAL						270,585	

TOTAL - FIRE PROTECTION							\$270,585
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D50 ELECTRICAL

D5010 SERVICE & DISTRIBUTION							
Gear & Distribution							
Normal power distribution switchgear & feeders	60,130	sf	5.00	300,650			
<u>Emergency power</u>							
Emergency power distribution switchgear & feeders	60,130	sf	3.00	180,390			
<u>Equipment Wiring</u>							
Equipment wiring	60,130	sf	2.00	120,260			
SUBTOTAL						601,300	

D5020 LIGHTING & POWER							
<u>Lighting & Branch Power</u>							
Lighting fixtures (LED as BOD) with installation labor	60,130	sf	5.00	300,650			
<u>Lighting control system</u>							
Lighting controls including daylight harvesting system, allow	60,130	sf	1.15	69,150			
<u>Branch devices</u>							
Branch devices	60,130	sf	0.50	30,065			
<u>Lighting and branch circuitry</u>							
Lighting & branch circuitry	60,130	sf	5.50	330,715			
SUBTOTAL						730,580	

D5030 COMMUNICATION & SECURITY SYSTEMS							
<u>Fire Alarm</u>							
Fire alarm system	60,130	sf	2.00	120,260			
<u>Security System</u>							
Security System	60,130	sf	2.50	150,325			
<u>Telephone/Data/CATV</u>							
Network switches, PBX, IP, VP, CCTV (By owner)					By Owner		
Telecommunications rough in	60,130	sf	1.50	90,195			

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION								
210	Telecommunications devices and cabling	60,130	sf	2.00	120,260			
211	Public Address/Clock System							
212	PA/Master Clock system	60,130	sf	1.25	75,163			
213	Audio Visual (rough-in and power only)							
214	AV equipment				By Owner			
215	Rough-In conduit and backboxes only	60,130	sf	0.50	30,065			
216	Gymnasium							
217	Sound system	1	ls	15,000.00	15,000			
218	Scoreboard/ shot clocks with feed and connection	2	ea	15,000.00	30,000			
219	Misc. gym equipment feed and connections	1	ls	25,000.00	25,000			
220	SUBTOTAL					656,268		
221								
222	D5040 OTHER ELECTRICAL SYSTEMS							
223	Miscellaneous							
224	Demolition & make safe	1	ls	15,000.00	15,000			
225	Temp power and lights	60,130	sf	0.45	27,059			
226	Fees & Permits	60,130	ls	0.80	48,104			
227	SUBTOTAL					90,163		
228								
229	TOTAL - ELECTRICAL							\$2,078,311
230								
231								
232	E10 EQUIPMENT							
233								
234	E10 EQUIPMENT, GENERALLY							
235	Gym wall pads	1	ls	20,000.00	20,000			
236	Basketball backstops; swing up; electric operated	6	loc	10,000.00	60,000			
237	Gymnasium dividing net; electrically operated	1	ls	30,000.00	30,000			
238	Volleyball net and standards	1	ls	5,000.00	5,000			
239	Telescoping bleachers	1	ls	60,000.00	60,000			
240	SUBTOTAL					175,000		
241								
242	TOTAL - EQUIPMENT							\$175,000
243								
244								
245	E20 FURNISHINGS							
246								
247	E2010 FIXED FURNISHINGS							
248	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500			
249	Window blinds	1,819	sf	7.00	12,733			
250	SUBTOTAL					40,233		
251								
252	E2020 MOVABLE FURNISHINGS							
253	All movable furnishings to be provided and installed by owner							
254	SUBTOTAL					NIC		
255								
256	TOTAL - FURNISHINGS							\$40,233
257								
258								
259	F10 SPECIAL CONSTRUCTION							
260								
261	F10 SPECIAL CONSTRUCTION							
262	SUBTOTAL							

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



Brookline High School
Design Options
 Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 60,130

	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - TAPPAN GYM ED PLAN: RENOVATION

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TOTAL - SPECIAL CONSTRUCTION

F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

Remove exterior glazing	1,819	sf	6.00	10,914		
Remove roofing	15,780	sf	2.00	31,560		
Interior demolition; gut	60,130	gsf	8.00	481,040		
Temporary enclosures/protection	60,130	sf	1.00	60,130		
SUBTOTAL						583,644

F2020 HAZARDOUS COMPONENTS ABATEMENT

See summary
 SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION \$583,644

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



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CONSTRUCTION COST SUMMARY

BUILDING SYSTEM		SUB-TOTAL	TOTAL	\$/SF	%
OPTION 3 - TAPPAN GYM ED PLAN: ADDITION					
A10 FOUNDATIONS					
A1010	Standard Foundations	\$371,408			
A1020	Special Foundations	\$0			
A1030	Lowest Floor Construction	\$278,696	\$650,104	\$10.15	3.4%
A20 BASEMENT CONSTRUCTION					
A2010	Basement Excavation	\$201,177			
A2020	Basement Walls	\$176,237	\$377,414	\$5.89	2.0%
B10 SUPERSTRUCTURE					
B1010	Upper Floor Construction	\$2,353,973			
B1020	Roof Construction	\$896,490	\$3,250,463	\$50.75	17.0%
B20 EXTERIOR CLOSURE					
B2010	Exterior Walls	\$1,104,904			
B2020	Windows	\$1,773,476			
B2030	Exterior Doors	\$69,400	\$2,947,780	\$46.02	15.4%
B30 ROOFING					
B3010	Roof Coverings	\$875,160			
B3020	Roof Openings	\$395,000	\$1,270,160	\$19.83	6.6%
C10 INTERIOR CONSTRUCTION					
C1010	Partitions	\$960,750			
C1020	Interior Doors	\$320,250			
C1030	Specialties/Millwork	\$446,891	\$1,727,891	\$26.98	9.0%
C20 STAIRCASES					
C2010	Stair Construction	\$297,000			
C2020	Stair Finishes	\$69,159	\$366,159	\$5.72	1.9%
C30 INTERIOR FINISHES					
C3010	Wall Finishes	\$640,500			
C3020	Floor Finishes	\$837,100			
C3030	Ceiling Finishes	\$448,350	\$1,925,950	\$30.07	10.1%
D10 CONVEYING SYSTEMS					
D1010	Elevator	\$160,000	\$160,000	\$2.50	0.8%
D20 PLUMBING					
D20	Plumbing	\$838,418	\$838,418	\$13.09	4.4%

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CONSTRUCTION COST SUMMARY					
<i>BUILDING SYSTEM</i>		<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>	<i>%</i>
OPTION 3 - TAPPAN GYM ED PLAN: ADDITION					
D30 HVAC					
D30	HVAC	\$2,907,789	\$2,907,789	\$45.40	15.2%
D40 FIRE PROTECTION					
D40	Fire Protection	\$288,225	\$288,225	\$4.50	1.5%
D50 ELECTRICAL					
D5010	Complete System	\$2,210,284	\$2,210,284	\$34.51	11.5%
E10 EQUIPMENT					
E10	Equipment	\$30,000	\$30,000	\$0.47	0.2%
E20 FURNISHINGS					
E2010	Fixed Furnishings	\$146,780			
E2020	Movable Furnishings	NIC	\$146,780	\$2.29	0.8%
F10 SPECIAL CONSTRUCTION					
F10	Special Construction	\$0	\$0	\$0.00	0.0%
F20 HAZMAT REMOVALS					
F2010	Building Elements Demolition	\$50,000			
F2020	Hazardous Components Abatement	\$0	\$50,000	\$0.78	0.3%
TOTAL DIRECT COST (Trade Costs)			\$19,147,417	\$298.94	100.0%

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OPTION 3 - TAPPAN GYM ED PLAN: ADDITION

GROSS FLOOR AREA CALCULATION

Basement	11,360
First Floor	13,930
Second Floor	17,390
Third floor (Field House)	21,370

TOTAL GROSS FLOOR AREA (GFA)	64,050 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Continuous Footings at exterior: 2'-6" wide x 12" deep

Formwork	234	sf	12.00	2,808
Re-bar	1,170	lbs.	1.32	1,544
Concrete material; 3,000 psi	12	cy	132.00	1,584
Placing concrete	12	cy	90.00	1,080

Foundation wall: 14" thick x 36" high

Formwork	702	sf	17.00	11,934
Re-bar	1,404	lbs.	1.32	1,853
Concrete material; 3,000 psi	17	cy	132.00	2,244
Placing concrete	17	cy	90.00	1,530

Grade Beam at interior: 2'-0" wide x 2'-0" deep

Formwork	760	sf	12.00	9,120
Re-bar	12,350	lbs.	1.32	16,302
Concrete material; 3,000 psi	31	cy	132.00	4,092
Placing concrete	31	cy	90.00	2,790

Spread Footings at interior: 11'-6" x 11'-6" x 2'-6" deep

Formwork	1,150	sf	16.00	18,400
Re-bar	13,500	lbs.	1.32	17,820
Concrete material; 3,000 psi	135	cy	132.00	17,820
Placing concrete	135	cy	90.00	12,150

Set anchor bolts grout plates

40	ea	165.00	6,600
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Spread Footings at perimeter: 8'-6" x 8'-6" x 2'-0" deep

Formwork	1,904	sf	16.00	30,464
Re-bar	15,680	lbs.	1.32	20,698
Concrete material; 3,000 psi	165	cy	132.00	21,780
Placing concrete	165	cy	90.00	14,850

Set anchor bolts grout plates

112	ea	165.00	18,480
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Piers/Pilasters: 22" x 22"

Formwork 18" x 18"	672	sf	18.00	12,096
Re-bar	2,160	lbs	1.32	2,851
Concrete material; 3,000 psi	18	cy	132.00	2,376
Placing concrete	18	cy	150.00	2,700

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Dampproofing foundation wall and footing	351	sf	3.00	NIC
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072100 THERMAL INSULATION

Insulation	351	sf	3.00	1,053
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312000 EARTHWORK

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



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OPTION 3 - TAPPAN GYM ED PLAN: ADDITION								
56	<u>Continuous footings</u>							
57	Excavation	87	cy	25.00	2,175			
58	Remove off site	87	cy	20.00	1,740			
59	Backfill with imported material	58	cy	38.00	2,204			
60	<u>Spread footings</u>							
61	Excavation	1,315	cy	25.00	32,875			
62	Remove off site	1,315	cy	20.00	26,300			
63	Backfill with imported material	1,015	cy	38.00	38,570			
64	<u>Grade Beams</u>							
65	Excavation	141	cy	25.00	3,525			
66	Remove off site	141	cy	20.00	2,820			
67	Backfill with imported material	110	cy	38.00	4,180			
68	SUBTOTAL					371,408		
70	A1020 SPECIAL FOUNDATIONS							
71	SUBTOTAL							
73	A1030 LOWEST FLOOR CONSTRUCTION							
74	<u>New Slab on grade, 5" thick</u>							
75	Gravel fill, 12"	516	cy	36.00	18,576			
76	Rigid insulation	13,930	sf	2.25	31,343			
77	Vapor barrier	13,930	sf	0.75	10,448			
78	Compact existing sub-grade	13,930	sf	0.50	6,965			
79	Mesh reinforcing 15% lap	16,020	sf	0.80	12,816			
80	Concrete - 5" thick; 4,000 psi	228	cy	125.00	28,500			
81	Placing concrete	228	cy	45.00	10,260			
82	Finishing and curing concrete	13,930	sf	1.50	20,895			
83	Control joints - saw cut	13,930	sf	0.10	1,393			
84	<u>Miscellaneous</u>							
85	Foundations against existing building	370	lf	250.00	92,500			
86	New Elevator pit	1	ea	35,000.00	35,000			
87	Equipment pads	1	ls	10,000.00	10,000			
88	SUBTOTAL					278,696		
TOTAL - FOUNDATIONS							\$650,104	
A20 BASEMENT CONSTRUCTION								
A2010 BASEMENT EXCAVATION								
96	Excavation for basement	1,311	cy	12.00	15,732			
97	Export off site	1,311	cy	20.00	26,220			
98	Temporary for sheeting and shoring	2,895	sf	55.00	159,225			
99	SUBTOTAL					201,177		
A2020 BASEMENT WALLS								
102	<u>Continuous Footings at exterior; 2'-6" wide x 12" deep</u>							
103	Formwork	386	sf	12.00	4,632			
104	Re-bar	1,930	lbs.	1.32	2,548			
105	Concrete material; 3,000 psi	20	cy	132.00	2,640			

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OPTION 3 - TAPPAN GYM ED PLAN: ADDITION

106	Placing concrete	20	cy	90.00	1,800		
107	<u>Basement wall; 14" thick</u>						
108	Formwork	5,790	sf	17.00	98,430		
109	Re-bar	11,580	lbs.	1.32	15,286		
110	Concrete material; 3,000 psi	138	cy	132.00	18,216		
111	Placing concrete	138	cy	90.00	12,420		
112	Waterproofing retaining wall	2,895	sf	7.00	20,265		
113	SUBTOTAL					176,237	

TOTAL - BASEMENT CONSTRUCTION						\$377,414
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B10 SUPERSTRUCTURE

118		16.92	lbs/sf		-		
119	B1010 FLOOR CONSTRUCTION	542	tns		-		
120	New Addition	50,120	sf				
121	<u>Floor Structure - Steel:</u>						
122	Steel beams and columns to new addition; 14.8#/SF	371	tns	3,800.00	1,409,800		
123	Premium for HSS	93	tns	300.00	27,900		
124	Shear studs	10,024	ea	2.50	25,060		
125	<u>Floor Structure</u>						
126	2" 18 Ga. Metal galvanized floor Deck	50,120	sf	3.75	187,950		
127	WWF reinforcement	57,638	sf	0.80	46,110		
128	Concrete Fill to metal deck; 6" Light Weight	1,169	cy	160.00	187,040		
129	Place and finish concrete	50,120	sf	2.00	100,240		
130	Rebar to decks	15,036	lbs	1.20	18,043		
131	Misc. angles	50,120	sf	0.50	25,060		
132	<u>Miscellaneous</u>						
133	Fire proofing to columns and beams	50,120	sf	2.25	112,770		
134	Premium to build over existing pool building roof	5,800	sf	30.00	174,000		
135	Intumescent paint	1	ls	25,000.00	25,000		
136	Fire stopping floors	1	ls	15,000.00	15,000		
137	SUBTOTAL					2,353,973	

B1020 ROOF CONSTRUCTION

140	New Addition	21,370	sf				
141	<u>Roof Structure - Steel:</u>						
142	Steel beams and columns to new addition; 16#/SF; premium for pitched roof	171	tns	4,000.00	684,000		
143	Premium for HSS	43	tns	300.00	12,900		
144	Exposed steel	1	ls	50,000.00	50,000		
145	<u>Roof Structure</u>						
146	Acoustic deck allowance	21,370	sf	7.00	149,590		
147	<u>Miscellaneous</u>						
148	Fire proofing to columns, beams and deck	21,370	sf	3.00	Not Required		
149	SUBTOTAL					896,490	

TOTAL - SUPERSTRUCTURE						\$3,250,463
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OPTION 3 - TAPPAN GYM ED PLAN: ADDITION

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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Exterior Wall Area - Solid Assume 40% 11,647 sf

042000 MASONRY

Brick veneer, 3 color; 85% of solid area (not including Field house) 5,600 sf 40.00 224,000

Staging to exterior wall 11,647 sf 4.00 46,588

055000 MISC. METALS

Stainless steel sign at main entrance 1 ls 20,000.00 20,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Air barrier 11,647 sf 6.50 75,706

Air barrier/flashing at windows 10,024 lf 6.25 62,650

Miscellaneous sealants to closure 11,647 sf 1.00 11,647

072100 THERMAL INSULATION

Insulation 11,647 sf 2.25 26,206

076400 CLADDING

Metal panel; 15% of solid area 988 sf 60.00 59,280

Metal panel; Field House 5,059 sf 60.00 303,540

Roof equipment screen 1 ls 100,000.00 100,000

092900 GYPSUM BOARD ASSEMBLIES

6" metal stud backup 11,647 sf 9.00 104,823

Gypsum Sheathing 11,647 sf 2.75 32,029

Drywall lining to interior face of stud backup 11,647 sf 3.30 38,435

SUBTOTAL 1,104,904

B2020 WINDOWS

Exterior Wall Area - Glazed Assume 60% 17,040 sf

061000 ROUGH CARPENTRY

Wood blocking at openings 10,024 lf 8.00 80,192

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Backer rod & double sealant 10,024 lf 8.50 85,204

080001 METAL WINDOWS

Windows, double glazed; 20% of glazed area 1,976 sf 90.00 177,840

Curtainwall, double glazed; 80% of glazed area 7,906 sf 120.00 948,720

Kalwall at Field House 7,158 sf 65.00 465,270

089000 LOUVERS

Louvers 250 sf 65.00 16,250

SUBTOTAL 1,773,476

B2030 EXTERIOR DOORS

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 - TAPPAN GYM ED PLAN: ADDITION							
207	Glazed entrance doors including frame and hardware; double door	8	pr	8,000.00	64,000		
208	HM doors, frames and hardware- Double	2	pr	2,000.00	4,000		
209	Backer rod & double sealant	200	lf	4.00	800		
210	Wood blocking at openings	200	lf	3.00	600		
211	SUBTOTAL					69,400	
TOTAL - EXTERIOR CLOSURE							\$2,947,780
B30 ROOFING							
B3010 ROOF COVERINGS							
219	New roofing complete	21,370	sf	28.00	598,360		
220	Allowance for soffits; metal panels with backup system	3,460	sf	80.00	276,800		
221	SUBTOTAL					875,160	
B3020 ROOF OPENINGS							
224	Skylights, allow for Field House skylight	3,000	sf	130.00	390,000		
225	Roof hatch	2	loc	2,500.00	5,000		
226	SUBTOTAL					395,000	
TOTAL - ROOFING							\$1,270,160
C10 INTERIOR CONSTRUCTION							
C1010 PARTITIONS							
234	Miscellaneous partitions/glazed partitions/borrowed lights/blocking etc.	64,050	gsf	15.00	960,750		
235	SUBTOTAL					960,750	
C1020 INTERIOR DOORS							
238	Interior doors, frames and hardware	64,050	gsf	5.00	320,250		
239	SUBTOTAL					320,250	
C1030 SPECIALTIES / MILLWORK							
242	Toilet Partitions and accessories	64,050	gsf	0.80	51,240		
243	Backer panels in electrical closets	1	ls	1,000.00	1,000		
244	Marker boards/tackboards in classrooms, offices, conference rooms, library and MP rooms	64,050	sf	1.00	64,050		
245	Room Signs	64,050	gsf	0.40	25,620		
246	Fire extinguisher cabinets	21	ea	350.00	7,350		
247	Lockers	64,050	gsf	1.60	102,480		
248	Janitors Work Shop Accessories	1	ls	1,500.00	1,500		
249	Janitors Closet Accessories	5	rms	300.00	1,500		
250	Display cases	64,050	gsf	0.25	16,013		
251	Miscellaneous metals throughout building	64,050	sf	1.50	96,075		
252	Miscellaneous sealants throughout building	64,050	sf	1.25	80,063		
253	SUBTOTAL					446,891	
TOTAL - INTERIOR CONSTRUCTION							\$1,727,891

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OPTION 3 - TAPPAN GYM ED PLAN: ADDITION

258	C20 STAIRCASES						
259	C2010 STAIR CONSTRUCTION						
260	Metal pan stair; egress stair	11	flt	25,000.00	275,000		
261	Concrete fill to stairs	11	flt	2,000.00	22,000		
262	SUBTOTAL					297,000	
263	C2020 STAIR FINISHES						
264	High performance coating to stairs including all railings etc.	11	flt	3,000.00	33,000		
265	Rubber tile at stairs - landings	1,100	sf	10.00	11,000		
266	Rubber tile at stairs - treads & risers	1,320	lft	19.06	25,159		
267	SUBTOTAL					69,159	
268	TOTAL - STAIRCASES						
269							\$366,159
270	C30 INTERIOR FINISHES						
271	C3010 WALL FINISHES						
272	Wall finishes	64,050	sf	10.00	640,500		
273	SUBTOTAL					640,500	
274	C3020 FLOOR FINISHES						
275	Small Gym flooring	5,360	sf	18.00	96,480		
276	Floor finishes	58,690	sf	10.00	586,900		
277	Moisture mitigation	51,240	sf	3.00	153,720		
278	SUBTOTAL					837,100	
279	C3030 CEILING FINISHES						
280	Ceiling finishes	64,050	sf	7.00	448,350		
281	SUBTOTAL					448,350	
282	TOTAL - INTERIOR FINISHES						
283							\$1,925,950
284	D10 CONVEYING SYSTEMS						
285	D1010 ELEVATOR						
286	New elevator; 4 stop; oversize; 5,000 lbs	1	ea	160,000.00	160,000		
287	SUBTOTAL					160,000	
288	TOTAL - CONVEYING SYSTEMS						
289							\$160,000
290	D20 PLUMBING						
291	D20 PLUMBING, GENERALLY						
292	Equipment						
293	Plumbing equipment	64,050	sf	2.00	128,100		
294	Plumbing Fixtures & Specialties						
295	Miscellaneous plumbing fixtures	64,050	sf	1.00	64,050		
296	Domestic Water Type L Copper Pipe						
297	Domestic water pipe with fittings & hangers	64,050	sf	2.50	160,125		
298	Domestic water pipe insulation	64,050	sf	1.50	96,075		
299	Sanitary Waste And Vent Pipe w/ Hangers						

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - TAPPAN GYM ED PLAN: ADDITION								
313	Sanitary waste pipe with fittings & hangers	64,050	sf	2.35	150,518			
314	Kitchen waste pipe with fittings & hangers	64,050	sf	0.30	19,215			
315	<u>Acid Waste And Vent Pipe w/ Hangers</u>							
316	Acid waste & vent pipe with fittings & hangers	64,050	sf	0.75	48,038			
317	<u>Storm Drainage, Hubless Cast Iron Pipe</u>							
318	Storm water pipe with fittings & hangers	64,050	sf	1.25	80,063			
319	Pipe insulation on horizontal runs	64,050	sf	0.20	12,810			
320	<u>Gas And Fuel Distribution Pipe</u>							
321	Gas pipe with fittings & hangers	64,050	sf	0.75	48,038			
322	<u>Miscellaneous</u>							
323	Coordination & BIM	64,050	sf	0.25	16,013			
324	Coring, sleeves & firestopping	64,050	sf	0.03	1,922			
325	Commissioning support	64,050	sf	0.08	5,124			
326	Fees & permits	64,050	sf	0.13	8,327			
327	SUBTOTAL					838,418		
328								
329	TOTAL - PLUMBING						\$838,418	
330								
331								
332	D30 HVAC							
333								
334	D30 HVAC, GENERALLY							
335	<u>HVAC Equipment</u>							
336	HVAC equipment	64,050	sf	1.00	64,050			
337	<u>Pumps</u>							
338	Pumps	64,050	sf	0.28	17,934			
339	<u>Air distribution</u>							
340	RTU's Gas fired heating with DX cooling	121,695	cfm	9.25	1,125,679			
341	MAU unit gas fired heating	5,000	cfm	3.25	16,250			
342	Air distribution equipment	64,050	sf	6.00	384,300			
343	Exhaust fans	64,050	sf	0.50	32,025			
344	<u>Sheet metal & Accessories</u>							
345	Sheet metal & accessories	64,050	sf	9.00	576,450			
346	<u>Piping</u>							
347	<u>Hot Water Piping</u>							
348	Hot water piping with fittings & hangers	64,050	sf	2.00	128,100			
349	<u>Chilled Water Piping</u>							
350	Chilled water piping with fittings & hangers	64,050	sf	0.55	35,228			
351	<u>Refrigerant Piping</u>							
352	Refrigerant piping with fittings & hangers	64,050	sf	0.10	6,405			
353	<u>Condensate Drain Piping</u>							
354	Condensate drain piping with fittings & hangers	64,050	sf	0.15	9,608			
355	<u>Piping Insulation</u>							
356	Piping insulation	64,050	sf	1.50	96,075			
357	<u>Automatic Temperature Controls</u>							
358	Automatic temperature controls DDC	64,050	sf	4.50	288,225			
359	Balancing							
360	System testing & balancing	64,050	sf	0.60	38,430			
361	<u>Miscellaneous</u>							
362	Commissioning support	64,050	sf	0.42	26,901			

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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
OPTION 3 - TAPPAN GYM ED PLAN: ADDITION							
363	Coring, sleeves & fire stopping	64,050	sf	0.17	10,889		
364	Rigging & equipment rental	64,050	sf	0.42	26,901		
365	Vibration & seismic restraints	64,050	sf	0.38	24,339		
366	SUBTOTAL					2,907,789	
TOTAL - HVAC							\$2,907,789
D40 FIRE PROTECTION							
D40 FIRE PROTECTION, GENERALLY							
374	Fire protection system	64,050	gsf	4.50	288,225		
375	SUBTOTAL					288,225	
TOTAL - FIRE PROTECTION							\$288,225
D50 ELECTRICAL							
D5010 SERVICE & DISTRIBUTION							
Gear & Distribution							
385	Normal power distribution switchgear & feeders based on 4000A 480/277V	64,050	sf	5.00	320,250		
386	<u>Emergency power</u>						
387	Emergency power distribution switchgear & feeders	64,050	sf	3.00	192,150		
388	<u>Equipment Wiring</u>						
389	Equipment wiring	64,050	sf	2.00	128,100		
390	SUBTOTAL					640,500	
D5020 LIGHTING & POWER							
<u>Lighting & Branch Power</u>							
395	Lighting fixtures (LED as BOD) with installation labor	64,050	sf	5.00	320,250		
396	<u>Lighting control system</u>						
397	Lighting controls including daylight harvesting system, allow	64,050	sf	1.15	73,658		
398	<u>Branch devices</u>						
399	Branch devices	64,050	sf	0.50	32,025		
400	<u>Lighting and branch circuitry</u>						
401	Lighting & branch circuitry	64,050	sf	5.50	352,275		
402	SUBTOTAL					778,208	
D5030 COMMUNICATION & SECURITY SYSTEMS							
<u>Fire Alarm</u>							
407	Fire alarm system	64,050	sf	2.00	128,100		
<u>Bi-Directional System</u>							
409	BDA system	64,050	sf	0.50	32,025		
<u>Security System</u>							
411	Security System	64,050	sf	2.50	160,125		
<u>Telephone/Data/CATV</u>							
413	Network switches, PBX, IP, VP, CCTV (By owner)				By Owner		
414	Telecommunications rough in	64,050	sf	1.50	96,075		

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



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GFA 64,050

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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OPTION 3 - TAPPAN GYM ED PLAN: ADDITION

415	Telecommunications devices and cabling	64,050	sf	2.00	128,100		
416	Public Address/Clock System						
417	PA/Master Clock system	64,050	sf	1.25	80,063		
418	Audio Visual (rough-in and power only)						
419	AV equipment					By Owner	
420	Rough-In conduit and backboxes only	64,050	sf	0.50	32,025		
421	Gymnasium						
422	Sound system	1	ls	10,000.00	10,000		
423	Scoreboard/ shot clocks with feed and connection	1	ea	15,000.00	15,000		
424	Misc. gym equipment feed and connections	1	ls	15,000.00	15,000		
425	SUBTOTAL					696,513	

D5040 OTHER ELECTRICAL SYSTEMS

428	Miscellaneous						
429	Temp power and lights	64,050	sf	0.45	28,823		
430	Seismic restraints	1	ls	15,000.00	15,000		
431	Fees & Permits	64,050	ls	0.80	51,240		
432	SUBTOTAL					95,063	

TOTAL - ELECTRICAL						\$2,210,284
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E10 EQUIPMENT

439	E10 EQUIPMENT, GENERALLY						
440	Gym wall pads	1	ls	10,000.00	10,000		
441	Basketball backstops; swing up; electric operated	2	loc	10,000.00	20,000		
442	SUBTOTAL					30,000	

TOTAL - EQUIPMENT						\$30,000
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E20 FURNISHINGS

449	E2010 FIXED FURNISHINGS						
450	Entry mats & frames - recessed with carpet/rubber strips	500	sf	55.00	27,500		
451	Window blinds	17,040	sf	7.00	119,280		
452	SUBTOTAL					146,780	

E2020 MOVABLE FURNISHINGS							
All movable furnishings to be provided and installed by owner							
SUBTOTAL						NIC	

TOTAL - FURNISHINGS						\$146,780
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F10 SPECIAL CONSTRUCTION

463	F10 SPECIAL CONSTRUCTION						
No items in this section							
SUBTOTAL							

TOTAL - SPECIAL CONSTRUCTION						
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F20 SELECTIVE BUILDING DEMOLITION

OPTION 3 - Tappan Gym 3. Ed. Plan with Field House



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
OPTION 3 - TAPPAN GYM ED PLAN: ADDITION								
472	F2010 BUILDING ELEMENTS DEMOLITION							
473	Connections to existing building	1	ls	50,000.00	50,000			
474	SUBTOTAL					50,000		
475								
476	F2020 HAZARDOUS COMPONENTS ABATEMENT							
477	See main summary for HazMat allowance				See Summary			
478	SUBTOTAL							
479								
480	TOTAL - SELECTIVE BUILDING DEMOLITION							\$50,000

OPTIONAL PROJECT

Cypress Park Field & Playground Renovation Summary

CYPRESS PARK SITE PLAN - OPTION 1	ADD	\$10,203,124
CYPRESS PARK SITE PLAN - OPTION 2	ADD	\$11,200,077

This Feasibility cost estimate was produced from drawings, narratives and other documentation prepared by HMFH Architects Inc. and their design team dated February 17, 2017. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, construction manager's overhead, fee and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149a of the Massachusetts General Laws to pre-qualified construction managers, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency (GMP Contingency is included)
- Contaminated soils removal



OPTIONAL PROJECT - Cypress Park Field & Playground - Option 1



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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SITework CYPRESS OPTION 1

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G SITEWORK

G10 SITE PREPARATION & DEMOLITION

Site construction fence/barricades	3,500	lf	12.00	42,000
Site construction fence gates	2	ea	10,000.00	20,000
Stabilized construction entrance	1,450	sf	6.00	8,700
Pavement/curbing removal, crush and re-use for sub-base; demolish paving at Tappan, Davis and Greenough Streets	100,000	sf	1.25	125,000
Tree protection	1	ls	2,500.00	2,500
Walkways	1	ls	30,000.00	30,000
Remove existing 8" sewer	325	lf	50.00	16,250
Remove existing drainage piping	425	lf	40.00	17,000
Miscellaneous demolition	1	ls	25,000.00	25,000
<u>Site Earthwork</u>				
Strip Topsoil and remove; 6" thick	6,481	cy	12.00	77,772
Fine grading	400,000	sf	0.20	80,000
Cut and Fill; assumed AV 2ft; balanced site	29,630	cy	8.00	237,040
Silt fence/erosion control, wash bays, stock piles	3,500	lf	12.00	42,000
Silt fence maintenance and monitoring	1	ls	40,000.00	40,000
<u>Hazardous Waste Remediation</u>				
Remove existing underground fuel storage tanks				NIC
Dispose/treat contaminated soils				NIC
SUBTOTAL				763,262

G20 SITE IMPROVEMENTS

<u>Asphalt Paving; rebuild roadways at Tappan, Davis and Greenough Streets</u>	103,320			
gravel base; 12" thick	3,827	cy	39.00	149,253
asphalt; 4" thick	11,480	sy	25.00	287,000
VGC	4,300	lf	34.00	146,200
Crosswalks	8	loc	5,000.00	40,000
Other road markings	1	ls	7,500.00	7,500
HC curb cuts	20	loc	900.00	18,000
Signage	1	ls	20,000.00	20,000
<u>Pedestrian Paving; replace sidewalks</u>				
Concrete paving				
gravel base; 8" thick	2,072	cy	35.00	72,520
4" concrete paving	83,500	sf	7.00	584,500
<u>Concrete pavers</u>				
Concrete pavers				
sand bedding; 1" thick	1	cy	40.00	40
Precast concrete pavers	400	sf	24.00	9,600
gravel base; 8" thick	10	cy	35.00	350
concrete base; 4" thick	400	sf	5.00	2,000
<u>Site Improvements</u>				
Flag pole 45' high; includes foundation	1	ea	10,000.00	10,000
Concrete retaining walls				Assumed not required
6' chain-link fence around sports stadium	2,000	lf	50.00	100,000
Double gates	1	ea	2,500.00	2,500
Single gates	2	ea	1,200.00	2,400
Wood screen privacy fence 8'	50	lf	100.00	5,000
Double gates	1	ea	2,500.00	2,500
Benches	8	ea	2,800.00	22,400
Picnic tables	3	ea	2,500.00	7,500

OPTIONAL PROJECT - Cypress Park Field & Playground - Option 1



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITework CYPRESS OPTION 1							
54	Picnic shelter	1	ls	20,000.00	20,000		
55	Bike racks	1	ls	30,000.00	30,000		
56	Ornamental trash/recycling receptacles	10	ea	800.00	8,000		
57	Monumental signage	1	ls	40,000.00	40,000		
58	Way finding signage	1	ls	60,000.00	60,000		
59	New spray pool w/ low flow splash pad	2,000	sf	50.00	100,000		
60	Play surface	6,000	sf	18.00	108,000		
61	Play equipment	2	loc	120,000.00	240,000		
62	Seatwall	50	lf	550.00	27,500		
63	Ramp						
64	gravel base; 12" thick	200	cy	38.00	7,600		
65	concrete ramp	5,400	sf	15.00	81,000		
66	Ornamental metal hand railings w/ light - galv at stairs and ramps	350	lf	160.00	56,000		
67	<u>Basketball Courts</u>	10,100					
68	Gravel base - assumed 12" thick	374	cy	38.00	14,212		
69	Basketball surface	1,122	sy	45.00	50,490		
70	Post/hoop	1	courts	5,000.00	5,000		
71	8' benches	2	ea	2,250.00	4,500		
72	Vinyl CL Fencing; 10'	400	lf	80.00	32,000		
73	Gate, double	1	ea	2,400.00	2,400		
74	Gate, single	1	ea	1,200.00	1,200		
75	<u>Multi-purpose fields</u>						
76	Crushed stone - 12" thick	5,970	cy	32.00	191,040		
77	Gravel base - assumed 8" thick	4,000	cy	34.00	136,000		
78	Synthetic turf	161,200	sf	7.00	1,128,400		
79	Football goals	2	ea	3,500.00	7,000		
80	Scoreboard	1	ea	32,000.00	32,000		
81	Line markings - Allowance	2	ls	2,000.00	4,000		
82	Soccer goals (movable) - Allowance	2	loc	10,000.00	20,000		
83	Backstop; Softball	1	loc	30,000.00	30,000		
84	20' sports netting	1	ls	50,000.00	50,000		
85	Concrete turf edger	1,120	lf	22.00	24,640		
86	Bleachers and storage at parking headhouse	1	loc	150,000.00	150,000		
87	Ticket booth	1	loc	12,000.00	12,000		
88	Allowance for concessions building				NIC		
89	SUBTOTAL					4,162,245	
90							
91	<u>Landscaping</u>						
92	Topsoil - Import new topsoil; minimum 6"	1,944	cy	42.00	81,648		
93	Lawn - loam & seed	105,000	sf	0.25	26,250		
94	Trees - 50% of existing	25	ea	1,500.00	37,500		
95	Planting allowance	1	ls	75,000.00	75,000		
96	SUBTOTAL					220,398	
97							
98	G30 CIVIL MECHANICAL UTILITIES						
99	<u>Water supply: Pricing includes E&B and bedding</u>						
100	Backflow preventor	1	ls	5,000.00	5,000		
101	Water supply	700	lf	55.00	38,500		
102	Drinking fountains	3	ea	5,000.00	15,000		
103	<u>Sanitary: Pricing includes E&B and bedding</u>						
104	Sanitary to concession	1	ls	30,000.00	NIC		
105	<u>Storm water: Pricing includes E&B and bedding</u>						
106	New 18" HDPE piping	350	lf	60.00	21,000		
107	New underground infiltration system	20,000	sf	35.00	700,000		

OPTIONAL PROJECT - Cypress Park Field & Playground - Option 1



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITework CYPRESS OPTION 1							
108	Allowance to modify existing drainage systems	1	ls	100,000.00	100,000		
109	<u>Gas service</u>						
110	E&B trench for new gas pipe - install by plumbing				NIC		
111	SUBTOTAL					879,500	
113	G40 ELECTRICAL UTILITIES						
114	Electrical requirements for events	1	ls	50,000.00	50,000		
115	<u>Site Lighting</u>						
116	Site lighting (allow)	1	ls	100,000.00	100,000		
117	<u>Football/Soccer/Track Field</u>						
118	Football/Soccer field lighting, bases and circuitry	1	ls	400,000.00	400,000		
119	Remote lighting control system	1	ls	50,000.00	50,000		
120	SUBTOTAL					600,000	
SUBTOTAL - CYPRESS SITEWORK OPTION 1						\$6,625,405	
MARKUPS			54%				\$3,577,719
TOTAL - CYPRESS SITEWORK OPTION 1						\$10,203,124	

OPTIONAL PROJECT - Cypress Park Field & Playground - Option 2



Brookline High School
Design Options
Brookline, MA

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Feasibility Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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SITWORK CYPRESS OPTION 2

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G	SITWORK
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G10 SITE PREPARATION & DEMOLITION

311000	Site construction fence/barricades	3,500	lf	12.00	42,000		
311000	Site construction fence gates	2	ea	10,000.00	20,000		
311000	Stabilized construction entrance	1,450	sf	6.00	8,700		
311000	Pavement/curbing removal, crush and re-use for sub-base; demolish paving at Tappan, Davis and Greenough Streets	100,000	sf	1.00	100,000		
311000	Tree protection	1	ls	2,500.00	2,500		
311000	Walkways	1	ls	30,000.00	30,000		
	Remove existing 8" sewer	325	lf	50.00	16,250		
	Remove existing drainage piping	425	lf	40.00	17,000		
311000	Miscellaneous demolition	1	ls	25,000.00	25,000		
311000	<u>Site Earthwork</u>						
312000	Strip Topsoil and remove; 6" thick	6,481	cy	12.00	77,772		
312000	Fine grading	400,000	sf	0.20	80,000		
312000	Cut and Fill; assumed AV 2ft; balanced site	29,630	cy	8.00	237,040		
312000	Silt fence/erosion control, wash bays, stock piles	3,500	lf	12.00	42,000		
312000	Silt fence maintenance and monitoring	1	ls	40,000.00	40,000		
312000	<u>Hazardous Waste Remediation</u>						
312000	Remove existing underground fuel storage tanks						NIC
312000	Dispose/treat contaminated soils						NIC
	SUBTOTAL						738,262

G20 SITE IMPROVEMENTS

	<u>Asphalt Paving; parking lot and roadway</u>	105,840					
312000	gravel base; 12" thick	3,920	cy	35.00	137,200		
320000	asphalt; 4" thick	11,760	sy	25.00	294,000		
320000	VGC	6,000	lf	34.00	204,000		
320000	Crosswalks	8	loc	5,000.00	40,000		
320000	Other road markings	1	ls	7,500.00	7,500		
320000	HC curb cuts	20	loc	900.00	18,000		
320000	Signage	1	ls	20,000.00	20,000		
	<u>Pedestrian Paving</u>						
	Concrete paving						
312000	gravel base; 8" thick	1,687	cy	35.00	59,045		
033000	4" concrete paving	68,000	sf	7.00	476,000		
	<u>Concrete pavers</u>						
	Concrete pavers						
320000	sand bedding; 1" thick	95	cy	40.00	3,800		
033000	Precast concrete pavers	32,000	sf	16.00	512,000		
320000	gravel base; 8" thick	794	cy	35.00	27,790		
033000	concrete base; 4" thick	32,000	sf	5.00	160,000		
	<u>Site Improvements</u>						
323000	Flag pole 45' high; includes foundation	1	ea	10,000.00	10,000		
033000	Concrete retaining walls						Assumed not required
323000	6' chain-link fence around sports stadium	2,000	lf	50.00	100,000		
323000	Double gates	1	ea	2,500.00	2,500		
323000	Single gates	2	ea	1,200.00	2,400		
323000	Wood screen privacy fence 8'	50	lf	100.00	5,000		
323000	Double gates	1	ea	2,500.00	2,500		
323000	Benches	8	ea	2,800.00	22,400		
323000	Picnic tables	3	ea	2,500.00	7,500		
323000	Picnic shelter	1	ls	20,000.00	20,000		

OPTIONAL PROJECT - Cypress Park Field & Playground - Option 2



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
SITWORK CYPRESS OPTION 2							
55	323000		Bike racks	1	ls	30,000.00	30,000
56	323000		Ornamental trash/recycling receptacles	10	ea	800.00	8,000
57	323000		Monumental signage	1	ls	40,000.00	40,000
58	323000		Way finding signage	1	ls	60,000.00	60,000
59	323000		Discus pad & enclosure	1	ea	15,000.00	15,000
60	323000		Shot put pad & enclosure	1	ea	15,000.00	15,000
61	323000		Long jump / Triple Jump	2	ea	10,000.00	20,000
62	323000		New spray pool w/ low flow splash pad	2,000	sf	50.00	100,000
63	323000		Play surface	6,000	sf	18.00	108,000
64	323000		Play equipment	2	ea	120,000.00	240,000
65	323000		Seatwall	50	lf	550.00	27,500
66			Ramp				
67	312000		gravel base; 12" thick	200	cy	38.00	7,600
68	033000		concrete ramp	5,400	sf	15.00	81,000
69	050001		Ornamental metal hand railings w/ light - galv at stairs and ramps	350	lf	160.00	56,000
70			<u>Basketball Courts</u>	10,100			
71	312000		Gravel base - assumed 12" thick	374	cy	38.00	14,212
72	320000		Basketball surface	1,122	sy	45.00	50,490
73	323000		Post/hoop	1	courts	5,000.00	5,000
74	323000		8' benches	2	ea	2,250.00	4,500
75	323000		Vinyl CL Fencing; 10'	400	lf	80.00	32,000
76	323000		Gate, double	1	ea	2,400.00	2,400
77	323000		Gate, single	1	ea	1,200.00	1,200
78			<u>Multi-purpose fields</u>				
79	323100		Crushed stone - 12" thick	5,970	cy	32.00	191,040
80	323100		Gravel base - assumed 8" thick	4,000	cy	34.00	136,000
81	323100		Synthetic turf	161,200	sf	7.00	1,128,400
82	323100		Football goals	2	ea	3,500.00	7,000
83	323100		Scoreboard	1	ea	32,000.00	32,000
84	323100		Line markings - Allowance	2	ls	2,000.00	4,000
85	323100		Soccer goals (movable) - Allowance	2	loc	10,000.00	20,000
86	323100		Backstop; Softball	1	loc	30,000.00	30,000
87	323100		20' sports netting	1	ls	50,000.00	50,000
88	323100		Concrete turf edger	1,120	lf	22.00	24,640
89	323100		Bleachers and storage at parking headhouse	1	loc	150,000.00	150,000
90	323100		Ticket booth	1	loc	12,000.00	12,000
91	323100		Allowance for concessions building				NIC
92			SUBTOTAL				4,834,617
93							
94			<u>Landscaping</u>				
95	329000		Topsoil - Import new topsoil; minimum 6"	1,944	cy	42.00	81,648
96	329000		Lawn - loam & seed	105,000	sf	0.25	26,250
97	329000		Trees - 50% of existing	25	ea	1,500.00	37,500
98	329000		Planting allowance	1	ls	75,000.00	75,000
99			SUBTOTAL				220,398
100							
101			G30 CIVIL MECHANICAL UTILITIES				
102			<u>Water supply; Pricing includes E&B and bedding</u>				
103	330000		Backflow preventor	1	ls	5,000.00	5,000
104	330000		Water supply	700	lf	55.00	38,500
105	330000		Drinking fountains	3	ea	5,000.00	15,000
106	330000		<u>Sanitary; Pricing includes E&B and bedding</u>				
107	330000		Sanitary to concession	1	ls	30,000.00	NIC
108	330000		<u>Storm water; Pricing includes E&B and bedding</u>				

OPTIONAL PROJECT - Cypress Park Field & Playground - Option 2



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
SITework CYPRESS OPTION 2								
109	New 18" HDPE piping	350	lf	60.00	21,000			
110	New underground infiltration system	20,000	sf	35.00	700,000			
111	Allowance to modify existing drainage systems	1	ls	100,000.00	100,000			
112	330000 <u>Gas service</u>							
113	330000 E&B trench for new gas pipe - install by plumbing				NIC			
114	SUBTOTAL					879,500		
115								
116	G40 ELECTRICAL UTILITIES							
117	Electrical requirements for events	1	ls	50,000.00	50,000			
118	<u>Site Lighting</u>							
119	260000 Site lighting (allow)	1	ls	100,000.00	100,000			
120	<u>Football/Soccer/Track Field</u>							
121	Football/Soccer field lighting, bases and circuitry	1	ls	400,000.00	400,000			
122	Remote lighting control system	1	ls	50,000.00	50,000			
123	SUBTOTAL					600,000		
124								
125	SUBTOTAL - CYPRESS SITEWORK OPTION 2						\$7,272,777	
126								
127								
128	MARKUPS	54%					\$3,927,300	
129								
130	TOTAL - CYPRESS SITEWORK OPTION 2						\$11,200,077	

CYPRESS FIELD RENOVATION - Preliminary Design Costs & Budget Review



Brookline High School - Brookline MA
 PRELIMINARY Design Options - CYPRESS PARK - Field and Playground
 Feasibility Estimate

13-Apr-17
 DRAFT

LEGEND
 P&OS = Parks & Open Space scope
 Not in Quote (per P&OS)
 Further review items
 Additional P&OS items and Review Items
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P&OS N.I.Q	ITEM no.	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	P&OS SUB-TOTAL	Notes / Comments P&OS and HMFH Cost Review
	SITENWORK CYPRESS OPTION 1									
	G SITEMWORK									
	G10 SITE PREPARATION & DEMOLITION									
	5	Site construction fence/barricades	2,500	lf	12.00	30,000			30,000	Reduce was \$42,000; P&OS=2000; HMFH=2500; PM&C=3000 lin.ft
	6	Site construction fence gates	2	ea	5,000.00	10,000			10,000	P&OS= 2@\$1500; agree budget 10K
	7	Stabilized construction entrance	1,450	sf	6.00	8,700			8,700	
N.I.Q	8	Pavement/curbing removal, crush and re-use for sub-base; demolish paving at Tappan, Davis and Greenough Streets	100,000	sf	1.25	125,000				
	9	Tree protection	1	ls	4,500.00	4,500			4,500	Use P&OS = \$4,500; PM&C was \$2,500, HDP Ldscp= \$15,500
	10	Walkways	1	ls	30,000.00	30,000			30,000	PO&S assumes inside park area not sidewalks
N.I.Q	11	Remove existing 8" sewer	325	lf	50.00	16,250				
	12	Remove existing drainage piping	425	lf	40.00	17,000				
	13	Miscellaneous demolition	1	ls	25,000.00	25,000			25,000	P&OS = \$40,000
	Site Earthwork									
N.I.Q	15	Strip Topsoil and remove; 6" thick	6,481	cy	12.00	77,772				Required/assume include as prep for Turf Field
	16	Fine grading	400,000	sf	0.20	80,000				Devotion item- 15 at \$21cy = \$316,101 and item-17 \$28cy=\$829,640
	17	Cut and Fill; assumed AV 2ft; balanced site	29,630	cy	8.00	237,040				
	18	Silt fence/erosion control, wash bays, stock piles	2,500	lf	8.00	20,000			20,000	Brookline doesn't require wash bays , reduce from \$12 to \$8
	19	Silt fence maintenance and monitoring	1	ls	40,000.00	40,000			40,000	P&OS= 2000 lin.ft and items 18+19= \$15,000 HDP Landscape Tree Removal & Trimming= \$8,000
	Hazardous Waste Remediation									
	21	Remove existing underground fuel storage tanks				NIC				
	22	Dispose/treat contaminated soils				NIC				
	23	SUBTOTAL					721,262		168,200	P&OS SUB-TOTAL
	G20 SITE IMPROVEMENTS									
	Asphalt Paving; rebuild roadways at Tappan, Davis, 103,320 and Greenough Streets									
N.I.Q	27	gravel base; 12" thick	3,827	cy	39.00	149,253				
	28	asphalt; 4" thick	11,480	sy	25.00	287,000				
	29	VGC	4,300	lf	34.00	146,200				
	30	Crosswalks	8	loc	5,000.00	40,000				
	31	Other road markings	1	ls	7,500.00	7,500				
	32	HC curb cuts	20	loc	900.00	18,000				
	33	Signage	1	ls	20,000.00	20,000				

CYPRESS FIELD RENOVATION - Preliminary Design Costs & Budget Review



Brookline High School - Brookline MA
PRELIMINARY Design Options - CYPRESS PARK - Field and Playground
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P&OS N.I.Q	ITEM no.	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	P&OS SUB-TOTAL	Notes / Comments P&OS and HMFH Cost Review
SITENWORK CYPRESS OPTION 1										
G SITEWORK										
G10 SITE PREPARATION & DEMOLITION										
	2	Site construction fence/barricades	2,500	lf	12.00	30,000			30,000	
	3	Site construction fence gates	2	ea	5,000.00	10,000			10,000	
	4	Stabilized construction entrance	1,450	sf	6.00	8,700			8,700	
N.I.Q	8	Pavement/curbing removal, crush and re-use for sub-base; demolish paving at Tappan, Davis and Greenough Streets	100,000	sf	1.25	125,000				Reduce was \$42,000; P&OS=2000; HMFH=2500; PM&C=3000 lin.ft P&OS= 2 @ \$1500; agree budget 10K
	9	Tree protection	1	ls	4,500.00	4,500			4,500	
	10	Walkways	1	ls	30,000.00	30,000			30,000	
N.I.Q	11	Remove existing 8" sewer	325	lf	50.00	16,250				Use P&OS = \$4,500; PM&C was \$2500. HDP Ldscp = \$15,500
	12	Remove existing drainage piping	425	lf	40.00	17,000				PO&S assumes inside park area not sidewalks
	13	Miscellaneous demolition	1	ls	25,000.00	25,000			25,000	
Site Earthwork										
N.I.Q	15	Strip Topsoil and remove; 6" thick	6,481	cy	12.00	77,772				Required/assume include as prep for Turf Field
	16	Fine grading	400,000	sf	0.20	80,000				Devotion item-15 at \$21 cy = \$136,101 and item-17 \$28cy=\$829,640
	17	Cut and Fill; assumed AV 2ft; balanced site	29,630	cy	8.00	237,040				
	18	Silt fence/erosion control, wash bays, stock piles	2,500	lf	8.00	20,000			20,000	Brookline doesn't require wash bays , reduce from \$12 to \$8
	19	Silt fence maintenance and monitoring	1	ls	40,000.00	40,000			40,000	P&OS= 2000 lin.ft and items 18+19= \$15,000
Hazardous Waste Remediation										
	20	Remove existing underground fuel storage tanks				NIC				HDP Landscape Tree Removal & Trimming=\$8,000
	21	Dispose/treat contaminated soils				NIC				
	22									
	23	SUBTOTAL					721,262		168,200	P&OS SUB-TOTAL
G20 SITE IMPROVEMENTS										
	24	Asphalt Paving; rebuild roadways at Tappan, Davis and Greenough Streets	103,320							
N.I.Q	27	gravel base; 12" thick	3,827	cy	39.00	149,253				
	28	asphalt; 4" thick	11,480	sy	25.00	287,000				
	29	VGC	4,300	lf	34.00	146,200				
	30	Crosswalks	8	loc	5,000.00	40,000				
	31	Other road markings	1	ls	7,500.00	7,500				
	32	HC curb cuts	20	loc	900.00	18,000				
	33	Signage	1	ls	20,000.00	20,000				

CYPRESS FIELD RENOVATION - Preliminary Design Costs & Budget Review

LEGEND

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Brookline High School - Brookline MA
 PRELIMINARY Design Options - CYPRESS PARK - Field and Playground
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P&OS N.I.Q	ITEM no.	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	P&OS SUB-TOTAL	Notes / Comments P&OS and HMFH Cost Review
SITENWORK CYPRESS OPTION 1										
G SITEMWORK										
G10 SITE PREPARATION & DEMOLITION										
	5	Site construction fence/barricades	2,500	lf	12.00	30,000			30,000	Reduce was \$42,000; P&OS=2000; HMFH=2500; PM&C=3000 lin.ft
	6	Site construction fence gates	2	ea	5,000.00	10,000			10,000	P&OS = 2@ \$1500; agree budget 10K
	7	Stabilized construction entrance	1,450	sf	6.00	8,700			8,700	
N.I.Q	8	Pavement/curbing removal, crush and re-use for sub-base; demolish paving at Tappan, Davis and Greenough Streets	100,000	sf	1.25	125,000				
	9	Tree protection	1	ls	4,500.00	4,500			4,500	
	10	Walkways	1	ls	30,000.00	30,000			30,000	Use P&OS = \$4500; PM&C was \$2500; HDP Ldscp = \$15,500 PO&S assumes inside park area not sidewalks
N.I.Q	11	Remove existing 8" sewer	325	lf	50.00	16,250				
	12	Remove existing drainage piping	425	lf	40.00	17,000				
	13	Miscellaneous demolition	1	ls	25,000.00	25,000			25,000	P&OS = \$40,000
	14	Site Earthwork								
N.I.Q	15	Strip Topsoil and remove; 6" thick	6,481	cy	12.00	77,772				Required/assume include as prep for Turf Field
	16	Fine grading	400,000	sf	0.20	80,000				Devotion item-15 at \$21cy = \$136,101 and item-17 \$28cy = \$829,640
	17	Cut and Fill; assumed AV 2ft; balanced site	29,630	cy	8.00	237,040				
	18	Silt fence/erosion control, wash bays, stock piles	2,500	lf	8.00	20,000			20,000	Brookline doesn't require wash bays, reduce from \$12 to \$8 P&OS = 2000 lin.ft and items 18+19 = \$15,000
	19	Silt fence maintenance and monitoring	1	ls	40,000.00	40,000			40,000	HDP Landscape Tree Removal & Trimming = \$6,000
	20	Hazardous Waste Remediation								
	21	Remove existing underground fuel storage tanks								
	22	Dispose/treat contaminated soils								
	23	SUBTOTAL					721,262		168,200	P&OS SUB-TOTAL
	24									
	25									
	26	G20 SITE IMPROVEMENTS								
	27	Asphalt Paving; rebuild roadways at Tappan, Davis and Greenough Streets	103,320							
N.I.Q	28	gravel base; 12" thick	3,827	cy	39.00	149,253				
	29	asphalt; 4" thick	11,480	sy	25.00	287,000				
	30	VGC	4,300	lf	34.00	146,200				
	31	Crosswalks	8	loc	5,000.00	40,000				
	32	Other road markings	1	ls	7,500.00	7,500				
	33	HC curb cuts	20	loc	900.00	18,000				
		Signage	1	ls	20,000.00	20,000				

CYPRESS FIELD RENOVATION - Preliminary Design Costs & Budget Review



Brookline High School - Brookline MA
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P&OS N.I.Q	ITEM no.	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	P&OS SUB-TOTAL	Notes / Comments P&OS and HMFH Cost Review
SITWORK CYPRESS OPTION 1										
G SITEWORK										
G10 SITE PREPARATION & DEMOLITION										
	5	Site construction fence/barricades	2,500	lf	12.00	30,000			30,000	Reduce was \$42,000; P&OS=2000; HMFH=2500; PM&C=3000 lin.ft
	6	Site construction fence gates	2	ea	5,000.00	10,000			10,000	P&OS= 2@ \$1500; agree budget 10K
	7	Stabilized construction entrance	1,450	sf	6.00	8,700			8,700	
N.I.Q	8	Pavement/curbing removal, crush and re-use for sub-base; demolish paving at Tappan, Davis and Greenough Streets	100,000	sf	1.25	125,000				
	9	Tree protection	1	ls	4,500.00	4,500			4,500	Use P&OS = \$4500; PM&C was \$2500; HDP Ldscp= \$15,500
	10	Walkways	1	ls	30,000.00	30,000			30,000	PO&S assumes inside park area not sidewalks
N.I.Q	11	Remove existing 8" sewer	325	lf	50.00	16,250				
	12	Remove existing drainage piping	425	lf	40.00	17,000				
	13	Miscellaneous demolition	1	ls	25,000.00	25,000			25,000	P&OS = \$40,000
	14	Site Earthwork								
N.I.Q	15	Strip Topsoil and remove; 6" thick	6,481	cy	12.00	77,772				Required/assume include as prep for Turf Field
	16	Fine grading	400,000	sf	0.20	80,000				Devotion item-15 at \$21cy = \$136,101 and item-17 \$28cy= \$829,640
	17	Cut and Fill; assumed AV 2ft; balanced site	29,630	cy	8.00	237,040				
	18	Silt fence/erosion control, wash bays, stock piles	2,500	lf	8.00	20,000			20,000	Brookline doesn't require wash bays, reduce from \$12 to \$8
	19	Silt fence maintenance and monitoring	1	ls	40,000.00	40,000			40,000	P&OS= 2000 lin.ft and items 18+19= \$15,000
	20	Hazardous Waste Remediation								HDP Landscape Tree Removal & Trimming= \$8,000
	21	Remove existing underground fuel storage tanks				NIC				
	22	Dispose/treat contaminated soils				NIC				
	23	SUBTOTAL					721,262		169,200	P&OS SUB-TOTAL
G20 SITE IMPROVEMENTS										
Asphalt Paving, rebuild roadways at Tappan, Davis, 103,320										
N.I.Q	27	gravel base; 12" thick	3,827	cy	39.00	149,253				
	28	asphalt; 4" thick	11,480	sy	25.00	287,000				
	29	VGC	4,300	lf	34.00	146,200				
	30	Crosswalks	8	loc	5,000.00	40,000				
	31	Other road markings	1	ls	7,500.00	7,500				
	32	HC curb cuts	20	loc	900.00	18,000				
	33	Signage	1	ls	20,000.00	20,000				

OPTIONAL PROJECT

Underground Parking Structure @ Cypress Field Summary

UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS	ADD	\$35,218,705
UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS	ADD	\$25,409,786
UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL	ADD	\$15,840,110

This Feasibility cost estimate was produced from drawings, narratives and other documentation prepared by HMFH Architects Inc. and their design team dated February 17, 2017. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, construction manager's overhead, fee and design contingency. Cost escalation assumes start dates indicated.

Bidding conditions are expected to be public bidding under Chapter 149a of the Massachusetts General Laws to pre-qualified construction managers, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

Items not included in this estimate are:

- Land acquisition, feasibility, and financing costs
- All professional fees and insurance
- Site or existing conditions surveys investigations costs, including to determine subsoil conditions
- All Furnishings, Fixtures and Equipment
- Items identified in the design as Not In Contract (NIC)
- Items identified in the design as by others
- Owner supplied and/or installed items as indicated in the estimate
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks, (except as noted in this estimate)
- Construction contingency (GMP Contingency is included)
- Contaminated soils removal



Brookline High School

Design Options

Brookline, MA

Feasibility Estimate

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OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 159,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS

GROSS FLOOR AREA CALCULATION

Parking level 1	53,000
Parking level 2	53,000
Parking level 3	53,000

TOTAL GROSS FLOOR AREA (GFA)	159,000 sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

033000 CONCRETE

Strip Footings	1,045	CY
Foundation Walls	2,462	CY
Spread Footings	453	CY
Piers	37	CY
Total Foundation Concrete	3,997	CY

Cantilevered footings

Formwork	3,837	sf	14.00	53,718
Re-bar	76,740	lbs.	1.32	101,297
Concrete material; 4,000 psi	1,045	cy	137.50	143,688
Placing concrete	1,045	cy	55.00	57,475

Retaining wall

Formwork	84,414	sf	19.00	1,603,866
Re-bar	211,035	lbs.	1.32	278,566
Concrete material; 4,000 psi	2,462	cy	137.50	338,525
Placing concrete	2,462	cy	55.00	135,410

Spread Footings

Formwork	5,858	sf	16.00	93,728
Re-bar	15,828	lbs.	1.32	20,893
Concrete material; 3,000 psi	453	cy	132.00	59,796
Placing concrete	453	cy	55.00	24,915
Set anchor bolts grout plates	70	ea	165.00	11,550

Piers/Pilasters

Formwork	1,261	sf	18.00	22,698
Re-bar	6,450	lbs	1.32	8,514
Concrete material; 4,000 psi	37	cy	132.00	4,884
Placing concrete	37	cy	55.00	2,035
Elevator pit, complete	1	ea	30,000.00	30,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Waterproofing retaining wall	44,765	sf	7.00	313,355
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072100 THERMAL INSULATION

Insulation	28,138	sf	3.00	NIC
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312000 EARTHWORK

Strip footings

Excavation	25,012	cy	15.00	375,180
Remove off site	25,012	cy	20.00	500,240
Backfill with imported material	21,505	cy	26.00	559,130

Spread footings

Excavation	1,598	cy	13.20	21,094
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OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS								
56	Remove off site	1,598	cy	20.00	31,960			
57	Backfill with imported material	1,145	cy	26.00	29,770			
58	<u>Miscellaneous</u>							
59	Gravel fill beneath footings, 12"	836	cy	26.00	21,736			
60	Perimeter drain	695	lf	18.00	12,510			
61	Allowance for dewatering for foundation work	1	ls	60,000.00	60,000			
62	SUBTOTAL					4,916,533		
63								
64	A1020 SPECIAL FOUNDATIONS							
65	Sheeting and Shoring allowance	42,207	sf	55.00	2,321,385			
66	SUBTOTAL					2,321,385		
67								
68	A1030 LOWEST FLOOR CONSTRUCTION							
69								
70	033000 CONCRETE							
71	Slab on grade	53,000	sf		-			
72	Vapor barrier, heavy duty, 15 mil	53,000	sf	1.00	53,000			
73	WWF reinforcement, epoxy coated	60,950	sf	1.20	73,140			
74	Reinforcement, 6 psf @ ramp	6,000	lbs	1.32	7,920			
75	Concrete - 4" thick; 4,000 psi	686	cy	137.50	94,325			
76	Concrete - 8" thick; 4,000 psi, ramp	245	cy	137.50	33,688			
77	Placing concrete	686	cy	49.50	33,957			
78	Finishing and curing concrete	53,000	sf	2.50	132,500			
79	Sawcut full depth control joints	53,000	sf	0.22	11,660			
80	Premium for concrete at ramp	5,000	sf	5.00	25,000			
81	<u>Miscellaneous</u>							
82	Moisture mitigation					NIC		
83								
84	072100 THERMAL INSULATION							
85	Insulation, 3" foamed	53,000	sf	3.25	NIC			
86								
87	312000 EARTHWORK							
88	Slab on grade							
89	Crushed stone, 12"	1,963	cy	36.00	70,668			
90	Compact sub-grade	53,000	sf	0.55	29,150			
91	Underslab drainage	53,000	sf	3.30	174,900			
92	Striping	120	spc	50.00	6,000			
93	SUBTOTAL					745,908		
94								
95	TOTAL - FOUNDATIONS						\$7,983,826	
96								
97								
98	A20 BASEMENT CONSTRUCTION							
99								
100	A2010 BASEMENT EXCAVATION							
101								
102	312000 EARTHWORK							
103	Excavation for parking garage	71,974	cy	12.00	863,688			
104	Export off site	71,974	cy	20.00	1,439,480			
105	Temporary for sheeting and shoring					See above		
106	SUBTOTAL					2,303,168		
107								
108	A2020 BASEMENT WALLS							

OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 159,000

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UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS

109	See foundations above						
110	SUBTOTAL					-	

TOTAL - BASEMENT CONSTRUCTION						\$2,303,168
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

118	033000 CONCRETE						
119	WWF reinforcement	121,900	sf	0.80	97,520		
120	Concrete topping slab; 3" Normal Weight	1,080	cy	135.00	145,800		
121	Place and finish concrete	106,000	sf	3.00	318,000		
122	<u>Floor Structure - Precast Concrete</u>						
123	10ft wide x 36" deep precast concrete double T's clear spanning 60 feet; including columns	106,000	sf	35.00	3,710,000		
124	Premium for ramps	10,000	sf	45.00	450,000		
125	SUBTOTAL					4,721,320	

B1020 ROOF CONSTRUCTION

129	033000 CONCRETE						
130	WWF reinforcement	60,950	sf	0.80	48,760		
131	Concrete topping slab; 3" Normal Weight	540	cy	135.00	72,900		
132	Place and finish concrete	53,000	sf	3.00	159,000		
133	<u>Floor Structure - Precast Concrete</u>						
134	10ft wide x 36" deep precast concrete double T's clear spanning 60 feet; including columns	53,000	sf	35.00	1,855,000		
135	SUBTOTAL					2,135,660	

TOTAL - SUPERSTRUCTURE						\$6,856,980
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

144	Allowance for stair/elevator headhouses	2	loc	100,000.00	200,000		
145	SUBTOTAL					200,000	

B2020 WINDOWS

149	No work assumed						
150	SUBTOTAL					-	

B2030 EXTERIOR DOORS

153	083300 OVERHEAD DOORS						
155	Allowance for garage overhead entrance/exit door	1	loc	10,000.00	10,000		
157	SUBTOTAL					10,000	

TOTAL - EXTERIOR CLOSURE						\$210,000
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OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



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Brookline, MA

13-Mar-17

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UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS

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B30 ROOFING

B3010 ROOF COVERINGS								
	Waterproofing to roof under playing surface; protection board, 45 mil duraskim, drainage board, drainage fabric etc.	53,000	sf	11.00	583,000			
	Turf athletic field, stone base layer and synthetic turf system	53,000	sf	7.00	By Others			
	SUBTOTAL					583,000		
B3020 ROOF OPENINGS								
	No Work in this section							
	SUBTOTAL					-		
TOTAL - ROOFING							\$583,000	

C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS								
042000 MASONRY								
	CMU walls	4,950	sf	24.00	118,800			
	Elevator shaft; CMU	1,320	sf	28.00	36,960			
	SUBTOTAL					155,760		
C1020 INTERIOR DOORS								
081110 HOLLOW METAL DOOR FRAMES								
	Frames, single	6	ea	450.00	2,700			
	Frames, double	6	pr	600.00	3,600			
	HM door	18	ea	460.00	8,280			
087100 DOOR HARDWARE								
	Hardware	18	leaf	800.00	14,400			
090007 PAINTING								
	Finish doors and frames	18	ea	200.00	3,600			
	SUBTOTAL					32,580		
C1030 SPECIALTIES / MILLWORK								
	Signage	159,000	gfa	0.15	23,850			
	SUBTOTAL					23,850		
TOTAL - INTERIOR CONSTRUCTION							\$212,190	

C20 STAIRCASES

C2010 STAIR CONSTRUCTION							
	New precast stairs with galvanized steel guardrails and handrails	6	ft	16,000.00	96,000		
	SUBTOTAL					96,000	
C2020 STAIR FINISHES							

OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 159,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS

214	No Work in this section						
215	SUBTOTAL					-	
216	TOTAL - STAIRCASES						\$96,000
217	C30 INTERIOR FINISHES						
218	C3010 WALL FINISHES						
219	Paint to CMU walls	11,220	sf	1.25	14,025		
220	SUBTOTAL					14,025	
221	C3020 FLOOR FINISHES						
222	Sealer to concrete slab	159,000	sf	1.50	238,500		
223	SUBTOTAL					238,500	
224	C3030 CEILING FINISHES						
225	No Work in this section						
226	SUBTOTAL					-	
227	TOTAL - INTERIOR FINISHES						\$252,525
228	D10 CONVEYING SYSTEMS						
229	D1010 ELEVATOR						
230	New holeless hydraulic elevator; 4 stop; front and rear opening	1	ea	180,000.00	180,000		
231	SUBTOTAL					180,000	
232	TOTAL - CONVEYING SYSTEMS						\$180,000
233	D20 PLUMBING						
234	D20 PLUMBING, GENERALLY						
235	Plumbing equipment; oil/water separator	159,000	sf	0.55	87,450		
236	<u>Storm Drainage, Hubless Cast Iron Pipe</u>						
237	Storm water pipe with fittings & hangers	159,000	sf	4.25	675,750		
238	<u>Miscellaneous</u>						
239	Coordination & BIM	1	ls	5,000.00	5,000		
240	Fees & permits	1	ls	4,000.00	4,000		
241	SUBTOTAL					772,200	
242	TOTAL - PLUMBING						\$772,200
243	D30 HVAC						
244	D30 HVAC, GENERALLY						
245	HVAC equipment	159,000	sf	4.00	636,000		
246	<u>Air distribution</u>						
247	Air distribution equipment	159,000	sf	5.00	795,000		
248	<u>Sheet metal & Accessories</u>						
249	Sheet metal & accessories	159,000	sf	1.50	238,500		
250	<u>Automatic Temperature Controls</u>						
251	Automatic temperature controls DDC	159,000	sf	1.50	238,500		
252	Balancing						
253	System testing & balancing	159,000	sf	0.35	55,650		
254	<u>Miscellaneous</u>						
255	Coordination & BIM	1	ls	10,000.00	10,000		

OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



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CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS								
274	Commissioning support	1	ls	7,000.00	7,000			
275	Coring, sleeves & fire stopping	1	ls	5,000.00	5,000			
276	Equipment start-up and inspection	1	ls	1,000.00	1,000			
277	Rigging & equipment rental	1	ls	5,000.00	5,000			
278	SUBTOTAL					1,991,650		
279	TOTAL - HVAC							\$1,991,650
280								
281								
282								
283	D40 FIRE PROTECTION							
284								
285	D40 FIRE PROTECTION, GENERALLY							
286	Sprinkler system	159,000	gsf	3.50	556,500			
287	SUBTOTAL					556,500		
288	TOTAL - FIRE PROTECTION							\$556,500
289								
290								
291								
292	D50 ELECTRICAL							
293								
294	D5010 SERVICE & DISTRIBUTION							
295	Service and distribution	159,000	gsf	0.50	79,500			
296	Equipment wiring	159,000	gsf	0.25	39,750			
297	Lighting and branch	159,000	gsf	2.50	397,500			
298	Fire alarm	159,000	gsf	1.00	159,000			
299	Security	159,000	gsf	1.00	159,000			
300	Coordination & BIM	1	ls	3,000.00	3,000			
301	Permit and fees	1	ls	3,500.00	3,500			
302	SUBTOTAL					841,250		
303	TOTAL - ELECTRICAL							\$841,250
304								
305								
306								
307	E10 EQUIPMENT							
308								
309	E10 EQUIPMENT, GENERALLY							
310	Parking loop/detection/barriers	1	ls	30,000.00	30,000			
311	SUBTOTAL					30,000		
312	TOTAL - EQUIPMENT							\$30,000
313								
314								
315								
316	E20 FURNISHINGS							
317								
318	E2010 FIXED FURNISHINGS							
319	No Work in this section							
320	SUBTOTAL					-		
321								
322	E2020 MOVABLE FURNISHINGS							
323	All movable furnishings to be provided and installed by owner							
324	SUBTOTAL					NIC		
325	TOTAL - FURNISHINGS							
326								
327								
328								

OPTIONAL PROJECT - Underground Parking 3-Levels @ Cypress Field



Brookline High School
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Feasibility Estimate

GFA

159,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD THREE LEVELS

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F10 SPECIAL CONSTRUCTION

F10 SPECIAL CONSTRUCTION

No items in this section

SUBTOTAL

TOTAL - SPECIAL CONSTRUCTION

F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

No items in this section

SUBTOTAL

F2020 HAZARDOUS COMPONENTS ABATEMENT

See main summary for HazMat allowance

See Summary

SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION

SUBTOTAL THREE LEVEL UNDERGROUND PARKING \$22,869,289

MARKUPS 54% \$12,349,416

TOTAL THREE LEVEL UNDERGROUND PARKING \$35,218,705

OPTIONAL PROJECT - Underground Parking 2-Levels @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA

106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS							
GROSS FLOOR AREA CALCULATION							
	Parking level 1			53,000			
	Parking level 2			53,000			
TOTAL GROSS FLOOR AREA (GFA)					106,000	sf	
A10 FOUNDATIONS							
A1010 STANDARD FOUNDATIONS							
033000	CONCRETE						
	Strip Footings	1,045	CY				
	Foundation Walls	1,641	CY				
	Spread Footings	453	CY				
	Piers	37	CY				
	Total Foundation Concrete	3,176	CY				
<u>Cantilevered footings</u>							
	Formwork	3,837	sf	14.00	53,718		
	Re-bar	76,740	lbs.	1.32	101,297		
	Concrete material; 4,000 psi	1,045	cy	137.50	143,688		
	Placing concrete	1,045	cy	55.00	57,475		
<u>Retaining wall</u>							
	Formwork	56,276	sf	19.00	1,069,244		
	Re-bar	140,690	lbs.	1.32	185,711		
	Concrete material; 4,000 psi	1,641	cy	137.50	225,638		
	Placing concrete	1,641	cy	55.00	90,255		
<u>Spread Footings</u>							
	Formwork	5,858	sf	16.00	93,728		
	Re-bar	15,828	lbs.	1.32	20,893		
	Concrete material; 3,000 psi	453	cy	132.00	59,796		
	Placing concrete	453	cy	55.00	24,915		
	Set anchor bolts grout plates	70	ea	165.00	11,550		
<u>Piers/Pilasters</u>							
	Formwork	1,261	sf	18.00	22,698		
	Re-bar	6,450	lbs	1.32	8,514		
	Concrete material; 4,000 psi	37	cy	132.00	4,884		
	Placing concrete	37	cy	55.00	2,035		
	Elevator pit, complete	1	ea	30,000.00	30,000		
070001	WATERPROOFING, DAMPPROOFING AND CAULKING						
	Waterproofing retaining wall	30,696	sf	7.00	214,872		
072100	THERMAL INSULATION						
	Insulation	28,138	sf	3.00	NIC		
312000	EARTHWORK						
<u>Strip footings</u>							
	Excavation	25,012	cy	15.00	375,180		
	Remove off site	25,012	cy	20.00	500,240		
	Backfill with imported material	22,326	cy	26.00	580,476		
<u>Spread footings</u>							
	Excavation	1,598	cy	13.20	21,094		
	Remove off site	1,598	cy	20.00	31,960		

OPTIONAL PROJECT - Underground Parking 2-Levles @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA

106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS

56	Backfill with imported material	1,145	cy	26.00	29,770			
57	<u>Miscellaneous</u>							
58	Gravel fill beneath footings, 12"	836	cy	26.00	21,736			
59	Perimeter drain	695	lf	18.00	12,510			
60	Allowance for dewatering for foundation work	1	ls	60,000.00	60,000			
61	SUBTOTAL					4,053,877		
62								
63	A1020 SPECIAL FOUNDATIONS							
64	Sheeting and Shoring allowance	28,138	sf	55.00	1,547,590			
65	SUBTOTAL					1,547,590		
66								
67	A1030 LOWEST FLOOR CONSTRUCTION							
68								
69	033000 CONCRETE							
70	<u>Slab on grade</u>	53,000	sf		-			
71	Vapor barrier, heavy duty, 15 mil	53,000	sf	1.00	53,000			
72	WWF reinforcement, epoxy coated	60,950	sf	1.20	73,140			
73	Reinforcement, 6 psf @ ramp	6,000	lbs	1.32	7,920			
74	Concrete - 4" thick; 4,000 psi	686	cy	137.50	94,325			
75	Concrete - 8" thick; 4,000 psi, ramp	245	cy	137.50	33,688			
76	Placing concrete	686	cy	49.50	33,957			
77	Finishing and curing concrete	53,000	sf	2.50	132,500			
78	Sawcut full depth control joints	53,000	sf	0.22	11,660			
79	Premium for concrete at ramp	5,000	sf	5.00	25,000			
80	<u>Miscellaneous</u>							
81	Moisture mitigation					NIC		
82								
83	072100 THERMAL INSULATION							
84	Insulation, 3" foamed	53,000	sf	3.25	NIC			
85								
86	312000 EARTHWORK							
87	<u>Slab on grade</u>							
88	Crushed stone, 12"	1,963	cy	36.00	70,668			
89	Compact sub-grade	53,000	sf	0.55	29,150			
90	Underslab drainage	53,000	sf	3.30	174,900			
91	Striping	120	spc	50.00	6,000			
92	SUBTOTAL					745,908		
93								
94	TOTAL - FOUNDATIONS						\$6,347,375	
95								
96								
97	A20 BASEMENT CONSTRUCTION							
98								
99	A2010 BASEMENT EXCAVATION							
100								
101	312000 EARTHWORK							
102	Excavation for parking garage	47,983	cy	12.00	575,796			
103	Export off site	47,983	cy	20.00	959,660			
104	Temporary for sheeting and shoring				See above			
105	SUBTOTAL					1,535,456		
106								
107	A2020 BASEMENT WALLS							
108	See foundations above							

OPTIONAL PROJECT - Underground Parking 2-Levels @ Cypress Field



Brookline High School
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Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS								
109	SUBTOTAL					-		
111	TOTAL - BASEMENT CONSTRUCTION							\$1,535,456
114	B10 SUPERSTRUCTURE							
116	B1010 FLOOR CONSTRUCTION							
117	033000 CONCRETE							
118	WWF reinforcement	60,950	sf	0.80	48,760			
119	Concrete topping slab; 3" Normal Weight	540	cy	135.00	72,900			
120	Place and finish concrete	53,000	sf	3.00	159,000			
121	<u>Floor Structure - Precast Concrete</u>							
122	10ft wide x 36" deep precast concrete double T's clear spanning 60 feet; including columns	53,000	sf	35.00	1,855,000			
123	Premium for ramps	5,000	sf	45.00	225,000			
124	SUBTOTAL					2,360,660		
126	B1020 ROOF CONSTRUCTION							
128	033000 CONCRETE							
129	WWF reinforcement	60,950	sf	0.80	48,760			
130	Concrete topping slab; 3" Normal Weight	540	cy	135.00	72,900			
131	Place and finish concrete	53,000	sf	3.00	159,000			
132	<u>Floor Structure - Precast Concrete</u>							
133	10ft wide x 36" deep precast concrete double T's clear spanning 60 feet; including columns	53,000	sf	35.00	1,855,000			
134	SUBTOTAL					2,135,660		
136	TOTAL - SUPERSTRUCTURE							\$4,496,320
139	B20 EXTERIOR CLOSURE							
141	B2010 EXTERIOR WALLS							
143	Allowance for stair/elevator headhouses	2	loc	100,000.00	200,000			
144	SUBTOTAL					200,000		
146	B2020 WINDOWS							
148	No work assumed							
149	SUBTOTAL					-		
151	B2030 EXTERIOR DOORS							
153	083300 OVERHEAD DOORS							
154	Allowance for garage overhead entrance/exit door	1	loc	10,000.00	10,000			
156	SUBTOTAL					10,000		
158	TOTAL - EXTERIOR CLOSURE							\$210,000

OPTIONAL PROJECT - Underground Parking 2-Levels @ Cypress Field



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Feasibility Estimate

GFA 106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS

B30 ROOFING

B3010 ROOF COVERINGS

Waterproofing to roof under playing surface; protection board, 45 mil duraskim, drainage board, drainage fabric etc. **53,000** sf 11.00 583,000

Turf athletic field, stone base layer and synthetic turf system **53,000** sf 7.00 By Others

SUBTOTAL 583,000

B3020 ROOF OPENINGS

No Work in this section

SUBTOTAL -

TOTAL - ROOFING						\$583,000
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C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

042000 MASONRY

CMU walls **3,300** sf 24.00 79,200

Elevator shaft; CMU **880** sf 28.00 24,640

SUBTOTAL 103,840

C1020 INTERIOR DOORS

081110 HOLLOW METAL DOOR FRAMES

Frames, single **4** ea 450.00 1,800

Frames, double **4** pr 600.00 2,400

HM door **12** ea 460.00 5,520

087100 DOOR HARDWARE

Hardware **12** leaf 800.00 9,600

090007 PAINTING

Finish doors and frames **12** ea 200.00 2,400

SUBTOTAL 21,720

C1030 SPECIALTIES / MILLWORK

Signage **106,000** gfa 0.15 15,900

SUBTOTAL 15,900

TOTAL - INTERIOR CONSTRUCTION						\$141,460
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C20 STAIRCASES

C2010 STAIR CONSTRUCTION

New precast stairs with galvanized steel guardrails and handrails **4** flt 16,000.00 64,000

SUBTOTAL 64,000

C2020 STAIR FINISHES

No Work in this section

OPTIONAL PROJECT - Underground Parking 2-Levels @ Cypress Field



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GFA 106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST	
UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS								
214	SUBTOTAL					-		
216	TOTAL - STAIRCASES						\$64,000	
218	C30 INTERIOR FINISHES							
221	C3010 WALL FINISHES							
222	Paint to CMU walls	7,480	sf	1.25	9,350			
223	SUBTOTAL					9,350		
225	C3020 FLOOR FINISHES							
226	Sealer to concrete slab	106,000	sf	1.50	159,000			
227	SUBTOTAL					159,000		
229	C3030 CEILING FINISHES							
230	No Work in this section							
231	SUBTOTAL					-		
233	TOTAL - INTERIOR FINISHES						\$168,350	
236	D10 CONVEYING SYSTEMS							
238	D1010 ELEVATOR							
239	New holeless hydraulic elevator; 3 stop; front and rear opening	1	ea	135,000.00	135,000			
240	SUBTOTAL					135,000		
242	TOTAL - CONVEYING SYSTEMS						\$135,000	
245	D20 PLUMBING							
247	D20 PLUMBING, GENERALLY							
248	Plumbing equipment; oil/water separator	106,000	sf	0.55	58,300			
249	<u>Storm Drainage. Hubless Cast Iron Pipe</u>							
250	Storm water pipe with fittings & hangers	106,000	sf	4.25	450,500			
251	<u>Miscellaneous</u>							
252	Coordination & BIM	1	ls	5,000.00	5,000			
253	Fees & permits	1	ls	4,000.00	4,000			
254	SUBTOTAL					517,800		
256	TOTAL - PLUMBING						\$517,800	
259	D30 HVAC							
261	D30 HVAC, GENERALLY							
262	HVAC equipment	106,000	sf	4.00	424,000			
263	<u>Air distribution</u>							
264	Air distribution equipment	106,000	sf	5.00	530,000			
265	<u>Sheet metal & Accessories</u>							
266	Sheet metal & accessories	106,000	sf	1.50	159,000			
267	<u>Automatic Temperature Controls</u>							
268	Automatic temperature controls DDC	106,000	sf	1.50	159,000			
269	Balancing							
270	System testing & balancing	106,000	sf	0.35	37,100			
271	<u>Miscellaneous</u>							
272	Coordination & BIM	1	ls	10,000.00	10,000			
273	Commissioning support	1	ls	7,000.00	7,000			

OPTIONAL PROJECT - Underground Parking 2-Levels @ Cypress Field



Brookline High School
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13-Mar-17

Feasibility Estimate

GFA 106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS

274	Coring, sleeves & fire stopping	1	ls	5,000.00	5,000			
275	Equipment start-up and inspection	1	ls	1,000.00	1,000			
276	Rigging & equipment rental	1	ls	5,000.00	5,000			
277	SUBTOTAL					1,337,100		
278	TOTAL - HVAC						\$1,337,100	

282	D40 FIRE PROTECTION							
284	D40 FIRE PROTECTION, GENERALLY							
285	Sprinkler system	106,000	gsf	3.50	371,000			
286	SUBTOTAL					371,000		
288	TOTAL - FIRE PROTECTION						\$371,000	

291	D50 ELECTRICAL							
293	D5010 SERVICE & DISTRIBUTION							
294	Service and distribution	106,000	gsf	0.50	53,000			
295	Equipment wiring	106,000	gsf	0.25	26,500			
296	Lighting and branch	106,000	gsf	2.50	265,000			
297	Fire alarm	106,000	gsf	1.00	106,000			
298	Security	106,000	gsf	1.00	106,000			
299	Coordination & BIM	1	ls	3,000.00	3,000			
300	Permit and fees	1	ls	3,500.00	3,500			
301	SUBTOTAL					563,000		
303	TOTAL - ELECTRICAL						\$563,000	

306	E10 EQUIPMENT							
308	E10 EQUIPMENT, GENERALLY							
309	Parking loop/detection/barriers	1	ls	30,000.00	30,000			
310	SUBTOTAL					30,000		
312	TOTAL - EQUIPMENT						\$30,000	

315	E20 FURNISHINGS							
317	E2010 FIXED FURNISHINGS							
318	No Work in this section							
319	SUBTOTAL					-		
321	E2020 MOVABLE FURNISHINGS							
322	All movable furnishings to be provided and installed by owner							
323	SUBTOTAL					NIC		
325	TOTAL - FURNISHINGS							

328	F10 SPECIAL CONSTRUCTION						
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OPTIONAL PROJECT - Underground Parking 2-Levels @ Cypress Field



Brookline High School
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Brookline, MA

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Feasibility Estimate

GFA

106,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD TWO LEVELS

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F10 SPECIAL CONSTRUCTION

No items in this section

SUBTOTAL

TOTAL - SPECIAL CONSTRUCTION							
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F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

No items in this section

SUBTOTAL

F2020 HAZARDOUS COMPONENTS ABATEMENT

See main summary for HazMat allowance

See Summary

SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION							
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SUBTOTAL TWO LEVEL UNDERGROUND PARKING **\$16,499,861**

MARKUPS 54% **\$8,909,925**

TOTAL TWO LEVEL UNDERGROUND PARKING							\$25,409,786
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OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA

53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL

GROSS FLOOR AREA CALCULATION

Parking level 1 53,000

TOTAL GROSS FLOOR AREA (GFA)						53,000	sf
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A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

033000 CONCRETE

Strip Footings	1,045	CY		
Foundation Walls	821	CY		
Spread Footings	453	CY		
Piers	37	CY		

Total Foundation Concrete 2,356 CY

Cantilevered footings

Formwork	3,837	sf	14.00	53,718
Re-bar	76,740	lbs.	1.32	101,297
Concrete material; 4,000 psi	1,045	cy	137.50	143,688
Placing concrete	1,045	cy	55.00	57,475

Retaining wall

Formwork	28,138	sf	19.00	534,622
Re-bar	70,345	lbs.	1.32	92,855
Concrete material; 4,000 psi	821	cy	137.50	112,888
Placing concrete	821	cy	55.00	45,155

Spread Footings

Formwork	5,858	sf	16.00	93,728
Re-bar	15,828	lbs.	1.32	20,893
Concrete material; 3,000 psi	453	cy	132.00	59,796
Placing concrete	453	cy	55.00	24,915
Set anchor bolts grout plates	70	ea	165.00	11,550

Piers/Pilasters

Formwork	1,261	sf	18.00	22,698
Re-bar	6,450	lbs.	1.32	8,514
Concrete material; 4,000 psi	37	cy	132.00	4,884
Placing concrete	37	cy	55.00	2,035
Elevator pit, complete	1	ea	30,000.00	30,000

070001 WATERPROOFING, DAMPPROOFING AND CAULKING

Waterproofing retaining wall	16,627	sf	7.00	116,389
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072100 THERMAL INSULATION

Insulation	28,138	sf	3.00	NIC
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312000 EARTHWORK

Strip footings

Excavation	25,012	cy	15.00	375,180
Remove off site	25,012	cy	20.00	500,240
Backfill with imported material	23,146	cy	26.00	601,796

Spread footings

Excavation	1,598	cy	13.20	21,094
Remove off site	1,598	cy	20.00	31,960
Backfill with imported material	1,145	cy	26.00	29,770

OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL

56	<u>Miscellaneous</u>							
57	Gravel fill beneath footings, 12"	836	cy	26.00	21,736			
58	Perimeter drain	695	lf	18.00	12,510			
59	Allowance for dewatering for foundation work	1	ls	60,000.00	60,000			
60	SUBTOTAL					3,191,386		
61								
62	A1020 SPECIAL FOUNDATIONS							
63	Sheeting and Shoring allowance	14,069	sf	55.00	773,795			
64	SUBTOTAL					773,795		
65								
66	A1030 LOWEST FLOOR CONSTRUCTION							
67								
68	033000 CONCRETE							
69	<u>Slab on grade</u>	53,000	sf		-			
70	Vapor barrier, heavy duty, 15 mil	53,000	sf	1.00	53,000			
71	WWF reinforcement, epoxy coated	60,950	sf	1.20	73,140			
72	Reinforcement, 6 psf @ ramp	6,000	lbs	1.32	7,920			
73	Concrete - 4" thick; 4,000 psi	686	cy	137.50	94,325			
74	Concrete - 8" thick; 4,000 psi, ramp	245	cy	137.50	33,688			
75	Placing concrete	686	cy	49.50	33,957			
76	Finishing and curing concrete	53,000	sf	2.50	132,500			
77	Sawcut full depth control joints	53,000	sf	0.22	11,660			
78	Premium for concrete at ramp	5,000	sf	5.00	25,000			
79	<u>Miscellaneous</u>							
80	Moisture mitigation					NIC		
81								
82	072100 THERMAL INSULATION							
83	Insulation, 3" foamed	53,000	sf	3.25	NIC			
84								
85	312000 EARTHWORK							
86	<u>Slab on grade</u>							
87	Crushed stone, 12"	1,963	cy	36.00	70,668			
88	Compact sub-grade	53,000	sf	0.55	29,150			
89	Underslab drainage	53,000	sf	3.30	174,900			
90	Striping	120	spc	50.00	6,000			
91	SUBTOTAL					745,908		
92								
93	TOTAL - FOUNDATIONS						\$4,711,089	
94								
95								
96	A20 BASEMENT CONSTRUCTION							
97								
98	A2010 BASEMENT EXCAVATION							
99								
100	312000 EARTHWORK							
101	Excavation for parking garage	23,991	cy	12.00	287,892			
102	Export off site	23,991	cy	20.00	479,820			
103	Temporary for sheeting and shoring					See above		
104	SUBTOTAL					767,712		
105								
106	A2020 BASEMENT WALLS							
107	See foundations above							
108	SUBTOTAL					-		

OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA

53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL

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TOTAL - BASEMENT CONSTRUCTION						\$767,712
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B10 SUPERSTRUCTURE

B1010 FLOOR CONSTRUCTION

Premium for ramps	5,000	sf	45.00	225,000	
SUBTOTAL					225,000

B1020 ROOF CONSTRUCTION

033000 CONCRETE

WWF reinforcement	60,950	sf	0.80	48,760	
Concrete topping slab; 3" Normal Weight	540	cy	135.00	72,900	
Place and finish concrete	53,000	sf	3.00	159,000	
<u>Floor Structure - Precast Concrete</u>					
10ft wide x 36" deep precast concrete double T's clear spanning 60 feet; including columns	53,000	sf	35.00	1,855,000	
SUBTOTAL					2,135,660

TOTAL - SUPERSTRUCTURE						\$2,360,660
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B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Allowance for stair/elevator headhouses	2	loc	100,000.00	200,000	
SUBTOTAL					200,000

B2020 WINDOWS

No work assumed					-
SUBTOTAL					-

B2030 EXTERIOR DOORS

083300 OVERHEAD DOORS

Allowance for garage overhead entrance/exit door	1	loc	10,000.00	10,000	
SUBTOTAL					10,000

TOTAL - EXTERIOR CLOSURE						\$210,000
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B30 ROOFING

B3010 ROOF COVERINGS

Waterproofing to roof under playing surface; protection board, 45 mil duraskim, drainage board, drainage fabric etc.	53,000	sf	11.00	583,000	
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OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL							
159	Turf athletic field, stone base layer and synthetic turf system	53,000	sf	7.00	By Others		
160	SUBTOTAL					583,000	
161	B3020 ROOF OPENINGS						
162	No Work in this section						
163	SUBTOTAL					-	
164	TOTAL - ROOFING						
165							\$583,000
166	C10 INTERIOR CONSTRUCTION						
167	C1010 PARTITIONS						
168	042000 MASONRY						
169	CMU walls	1,650	sf	24.00	39,600		
170	Elevator shaft; CMU	880	sf	28.00	24,640		
171	SUBTOTAL					64,240	
172	C1020 INTERIOR DOORS						
173	081110 HOLLOW METAL DOOR FRAMES						
174	Frames, single	2	ea	450.00	900		
175	Frames, double	2	pr	600.00	1,200		
176	HM door	6	ea	460.00	2,760		
177	087100 DOOR HARDWARE						
178	Hardware	6	leaf	800.00	4,800		
179	090007 PAINTING						
180	Finish doors and frames	6	ea	200.00	1,200		
181	SUBTOTAL					10,860	
182	C1030 SPECIALTIES / MILLWORK						
183	Signage	50,000	gfa	0.15	7,500		
184	SUBTOTAL					7,500	
185	TOTAL - INTERIOR CONSTRUCTION						
186							\$82,600
187	C20 STAIRCASES						
188	C2010 STAIR CONSTRUCTION						
189	New precast stairs with galvanized steel guardrails and handrails	2	flt	16,000.00	32,000		
190	SUBTOTAL					32,000	
191	C2020 STAIR FINISHES						
192	No Work in this section						
193	SUBTOTAL					-	
194	TOTAL - STAIRCASES						
195							\$32,000
196	C30 INTERIOR FINISHES						
197	C3010 WALL FINISHES						

OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA

53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL							
16	Paint to CMU walls	4,180	sf	1.25	5,225		
17	SUBTOTAL					5,225	
19	C3020 FLOOR FINISHES						
20	Sealer to concrete slab	50,000	sf	1.50	75,000		
21	SUBTOTAL					75,000	
23	C3030 CEILING FINISHES						
24	No Work in this section						
25	SUBTOTAL					-	
TOTAL - INTERIOR FINISHES							\$80,225
D10 CONVEYING SYSTEMS							
32	D1010 ELEVATOR						
33	New holeless hydraulic elevator; 2 stop; front and rear opening	1	ea	90,000.00	90,000		
34	SUBTOTAL					90,000	
TOTAL - CONVEYING SYSTEMS							\$90,000
D20 PLUMBING							
41	D20 PLUMBING, GENERALLY						
42	Plumbing equipment; oil/water separator	50,000	sf	0.55	27,500		
43	Storm Drainage, Hubless Cast Iron Pipe						
44	Storm water pipe with fittings & hangers	50,000	sf	4.25	212,500		
45	Miscellaneous						
46	Coordination & BIM	1	ls	5,000.00	5,000		
47	Fees & permits	1	ls	4,000.00	4,000		
48	SUBTOTAL					249,000	
TOTAL - PLUMBING							\$249,000
D30 HVAC							
55	D30 HVAC, GENERALLY						
56	HVAC equipment	50,000	sf	4.00	200,000		
57	Air distribution						
58	Air distribution equipment	50,000	sf	5.00	250,000		
59	Sheet metal & Accessories						
60	Sheet metal & accessories	50,000	sf	1.50	75,000		
61	Automatic Temperature Controls						
62	Automatic temperature controls DDC	50,000	sf	1.50	75,000		
63	Balancing						
64	System testing & balancing	50,000	sf	0.35	17,500		
65	Miscellaneous						
66	Coordination & BIM	1	ls	10,000.00	10,000		
67	Commissioning support	1	ls	7,000.00	7,000		
68	Coring, sleeves & fire stopping	1	ls	5,000.00	5,000		
69	Equipment start-up and inspection	1	ls	1,000.00	1,000		
70	Rigging & equipment rental	1	ls	5,000.00	5,000		
71	SUBTOTAL					645,500	
TOTAL - HVAC							\$645,500

OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA 53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL							
D40 FIRE PROTECTION							
D40	FIRE PROTECTION, GENERALLY						
	Sprinkler system	50,000	gsf	3.50	175,000		
	SUBTOTAL					175,000	
TOTAL - FIRE PROTECTION							\$175,000
D50 ELECTRICAL							
D5010	SERVICE & DISTRIBUTION						
	Service and distribution	50,000	gsf	0.50	25,000		
	Equipment wiring	50,000	gsf	0.25	12,500		
	Lighting and branch	50,000	gsf	2.50	125,000		
	Fire alarm	50,000	gsf	1.00	50,000		
	Security	50,000	gsf	1.00	50,000		
	Coordination & BIM	1	ls	3,000.00	3,000		
	Permit and fees	1	ls	3,500.00	3,500		
	SUBTOTAL					269,000	
TOTAL - ELECTRICAL							\$269,000
E10 EQUIPMENT							
E10	EQUIPMENT, GENERALLY						
	Parking loop/detection/barriers	1	ls	30,000.00	30,000		
	SUBTOTAL					30,000	
TOTAL - EQUIPMENT							\$30,000
E20 FURNISHINGS							
E2010	FIXED FURNISHINGS						
	No Work in this section						
	SUBTOTAL					-	
E2020	MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner						
	SUBTOTAL					NIC	
TOTAL - FURNISHINGS							
F10 SPECIAL CONSTRUCTION							
F10	SPECIAL CONSTRUCTION						
	No items in this section						
	SUBTOTAL						
TOTAL - SPECIAL CONSTRUCTION							

OPTIONAL PROJECT - Underground Parking 1-Level @ Cypress Field



Brookline High School
Design Options
Brookline, MA

13-Mar-17

Feasibility Estimate

GFA

53,000

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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UNDERGROUND PARKING CYPRESS FIELD ONE LEVEL

331
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F20 SELECTIVE BUILDING DEMOLITION

F2010 BUILDING ELEMENTS DEMOLITION

No items in this section

SUBTOTAL

F2020 HAZARDOUS COMPONENTS ABATEMENT

See main summary for HazMat allowance

See Summary

SUBTOTAL

TOTAL - SELECTIVE BUILDING DEMOLITION

SUBTOTAL TWO LEVEL UNDERGROUND PARKING \$10,285,786

MARKUPS 54% \$5,554,324

TOTAL ONE LEVEL UNDERGROUND PARKING \$15,840,110

OPTIONAL PROJECT

Underground Parking Structure @ OPTION 4D: Cypress Building



Brookline High School

Design Options

Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
OPTION 4D	Sep-18			
UNDERGROUND PARKING - 132 spaces				\$9,957,948
PLUS				
ESCALATION TO MID-POINT				
DESIGN AND PRICING CONTINGENCY				
GENERAL CONDITIONS AND REQUIREMENTS				
BONDS, INSURANCE, PERMITS				
CM FEE AND CM/GMP CONTINGENCY				
TOTAL OF ALL CONSTRUCTION (3-LEVEL UNDERGROUND PARKING AT OPTION 4D CYPRESS BUILDING)				
			ADDS	\$14,755,312
			CONSTRUCTION COSTS	

OPTIONAL PROJECT - BHS Exterior Window Renovation



Brookline High School
 Design Options
 Brookline, MA

18-May-17

Feasibility Estimate - Option 4

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
BHS EXTERIOR WINDOW REPLACEMENT			ADD	\$5,624,388

BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - South Elevation @ Greenough Street



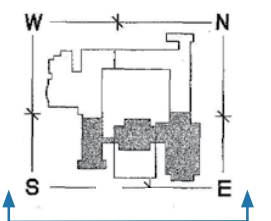
Part B - Rogers Wing - South Elevation

Part J - South Elevation

Part A - Greenough Building - South Elevation

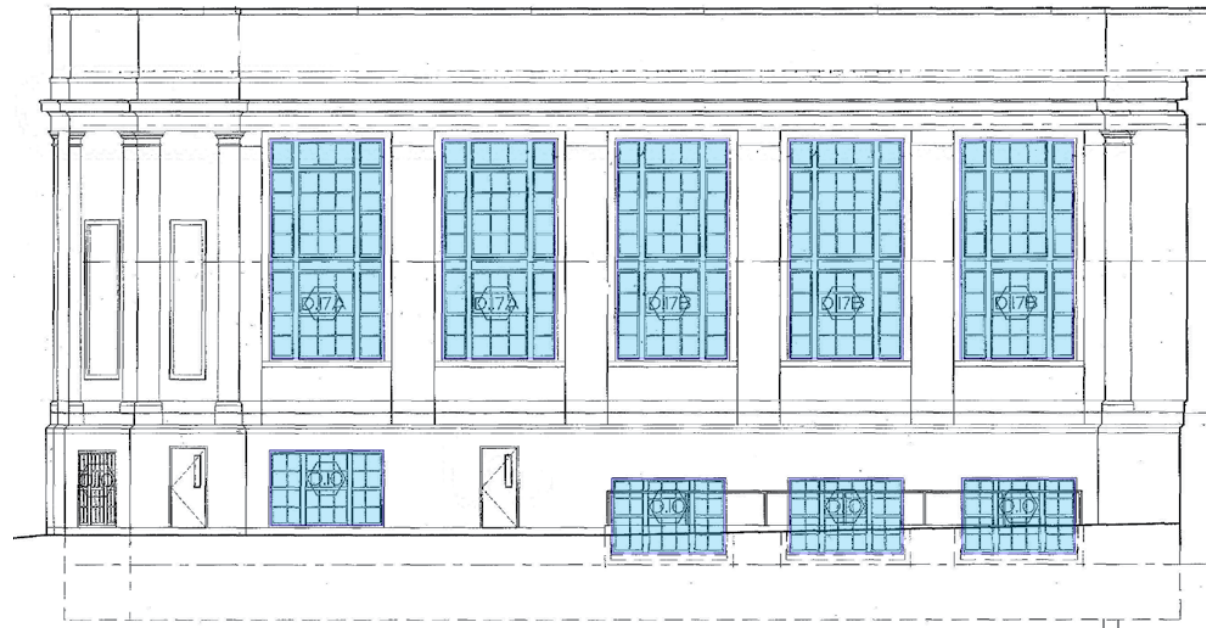
Part B - Rogers Wing - Window Replacement exclude/coordinate with Options 4B

matchline, see Part H Schluntz Gym



BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - South Elevation @ Greenough Street



Part C - Cafeteria / Auditorium - South Elevation

matchline, at Part B Rogers Wing



Part H - Schluntz Gym - South Elevation

matchline, see Part A Greenough Bldg.



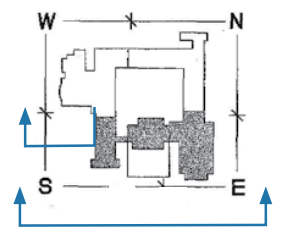
Part C - Cafeteria / Auditorium - South Elevation



Part J - South Elevation



Part H - Schluntz Gym - South Elevation



BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

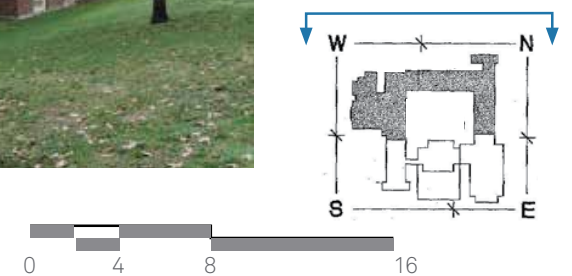
BHS Existing - North Elevation @ Welland Road



Part E - Welland Wing - North Elevation



Part E - Welland Wing - North Elevation

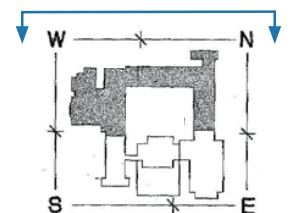


BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - North Elevation @ Welland Road

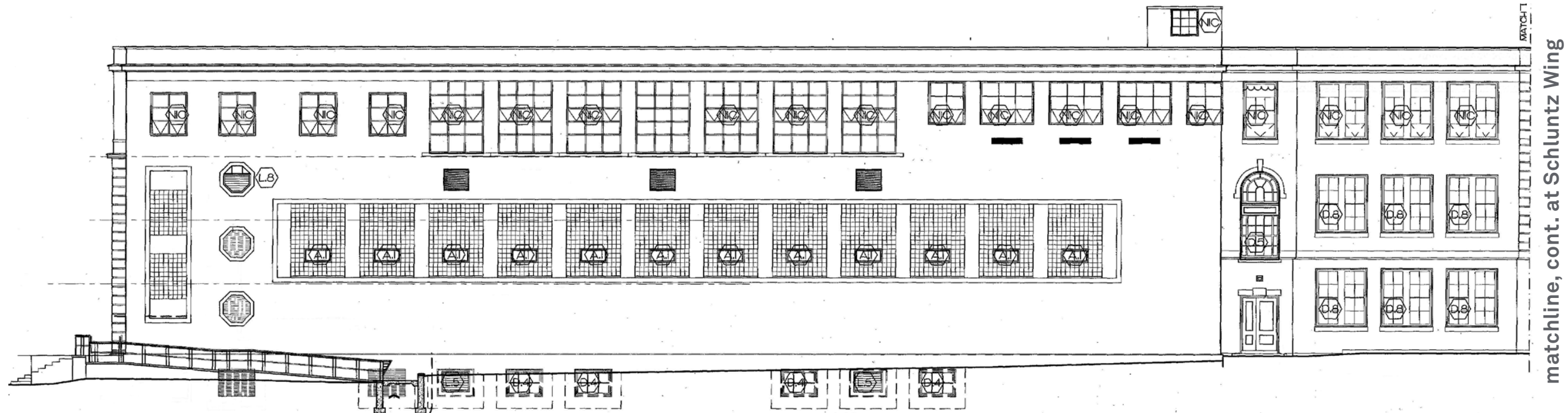


Part D - Cafeteria / Auditorium Addition - North Elevation



BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

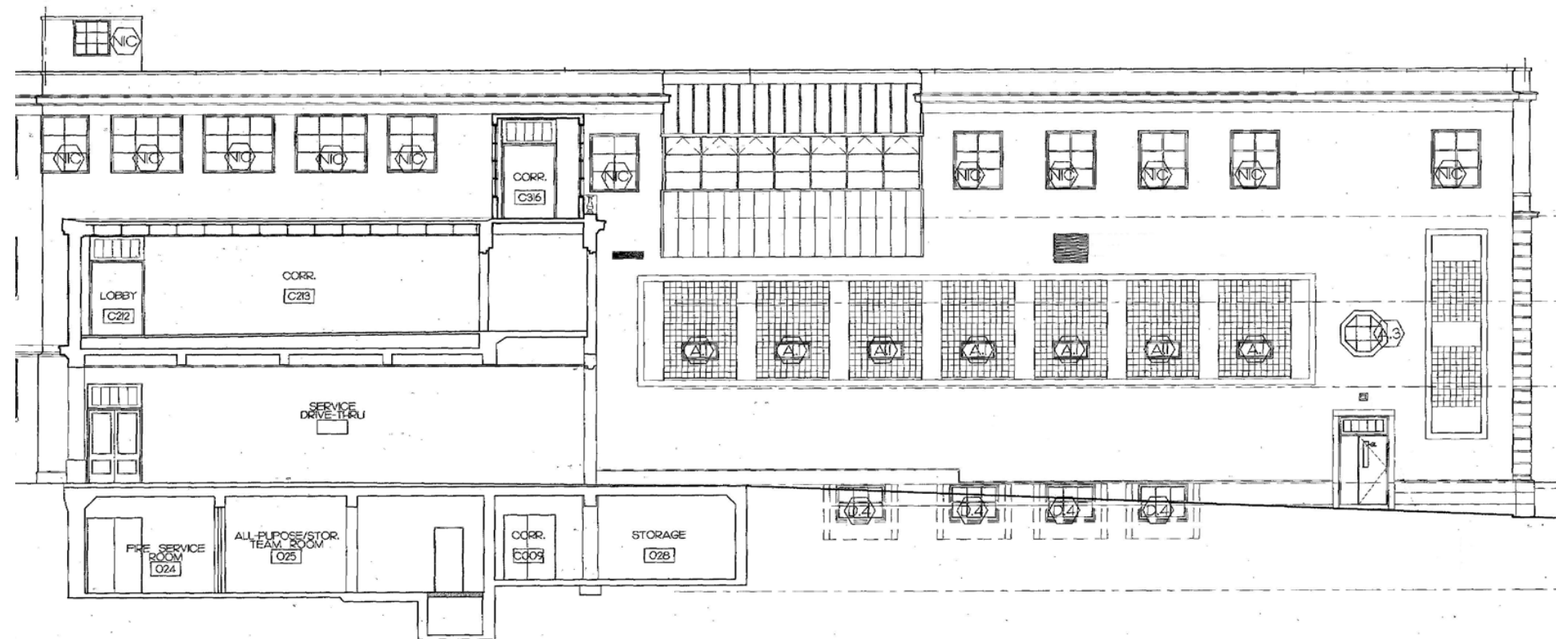
BHS Existing - East Elevation @ Lowell Rd. & West Elevation - Schluntz Gym



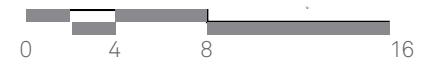
Part H - Schluntz Gym - East Elevation



Part H - Schluntz Gym - East Elevation



Part H - Schluntz Gym - West Elevation



BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - East Elevation @ Lowell Rd.



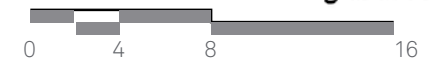
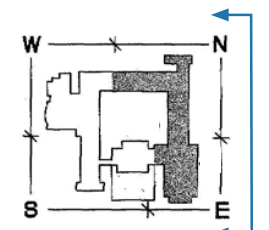
Part G - Schluntz Wing - East Elevation



Part G - Schluntz Wing - East Elevation



Part G - Schluntz Wing - East Elevation

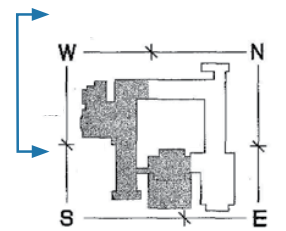


BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - West Elevation @ Tappan St.



Part C - Cafeteria / Auditorium - West Elevation



0 4 8 16

Part C - Cafeteria / Auditorium - West Elevation

BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

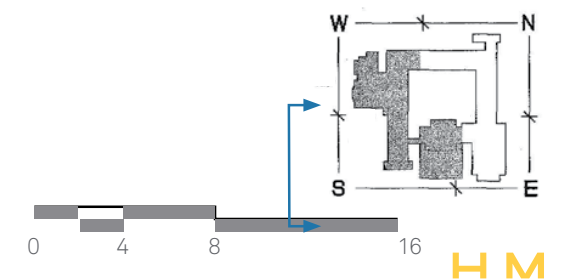
BHS Existing - West Elevation @ Tappan St.



**Part B
Rogers Wing
Window
Replacement
exclude/coordinate
with Options 4B**



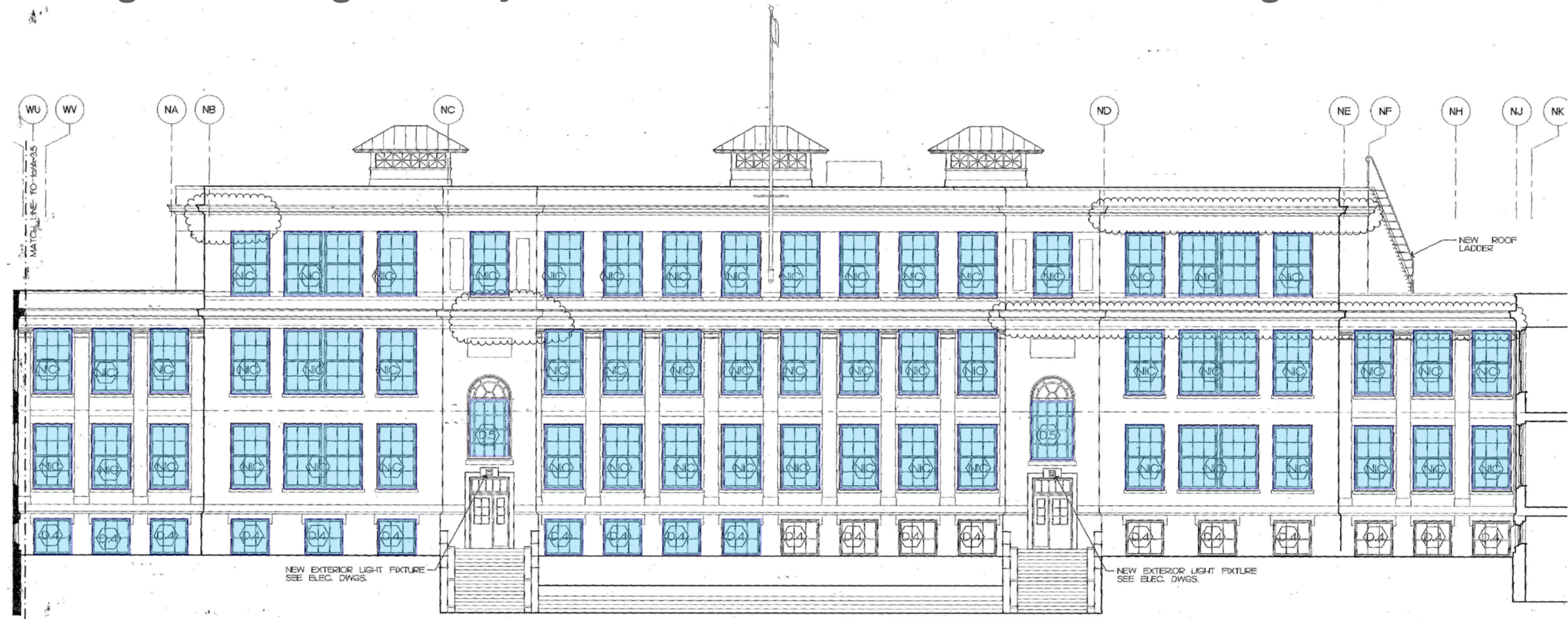
Part B - Rogers Wing - West Elevation



HM

BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

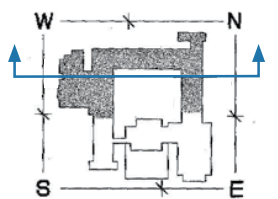
BHS Existing - Quadrangle Courtyard North - South Elevation Welland Wing



Part E - Welland Wing - South Elevation

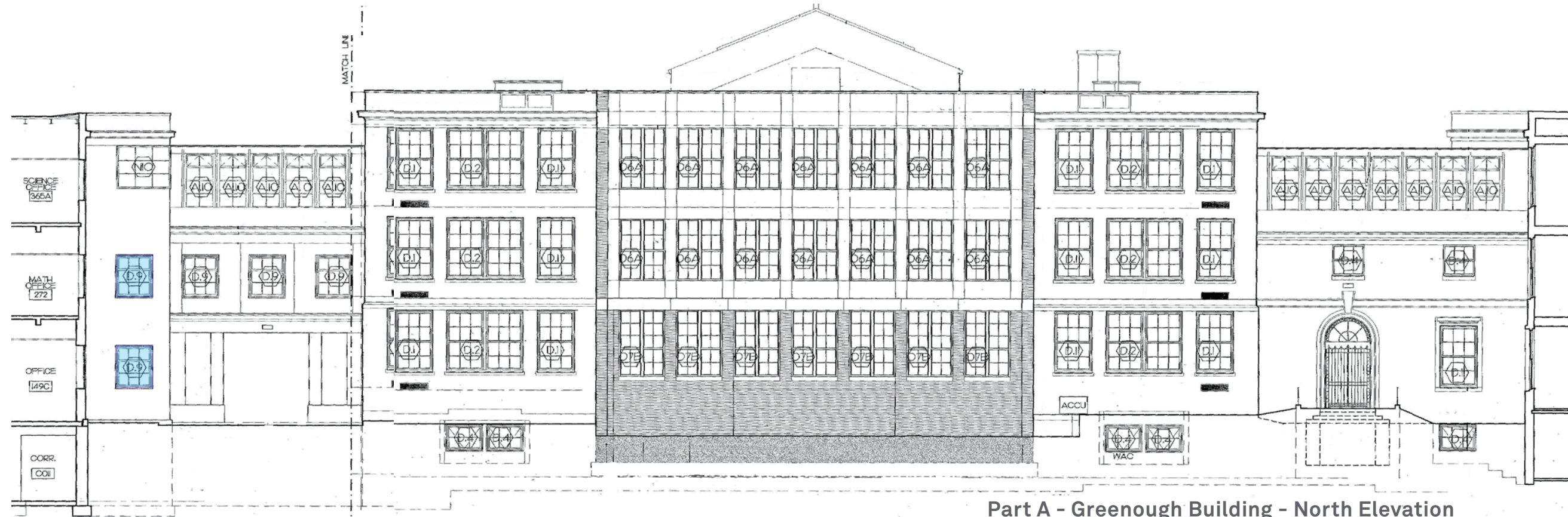


Part E - Welland Wing - South Elevation



BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - Quadrangle Courtyard South - North Elevation Greenough Building

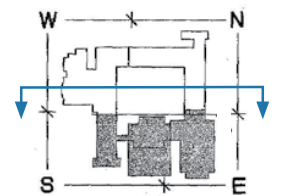


Part A - Greenough Building - North Elevation



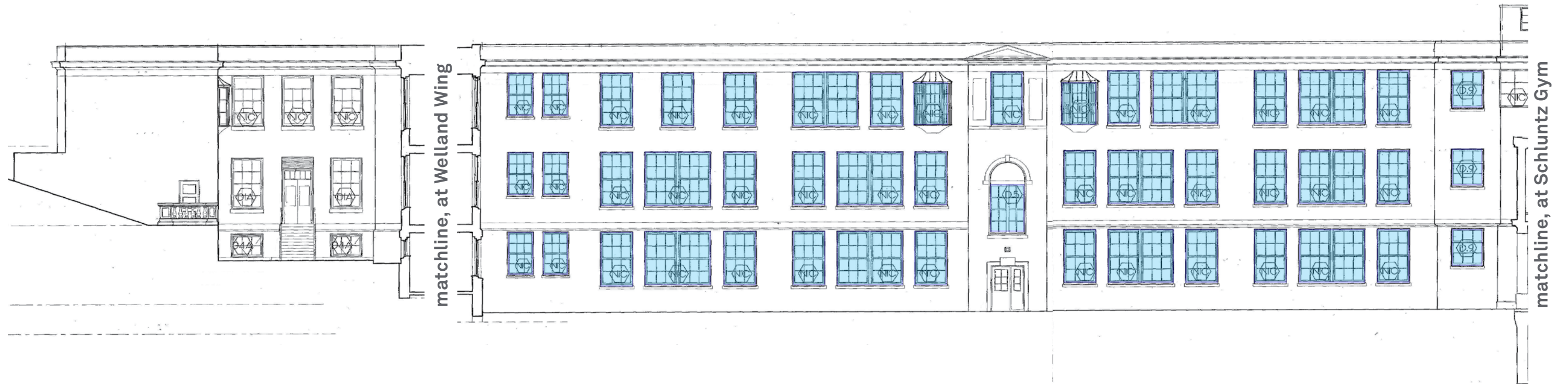
Part A - Greenough Building - North Elevation

0 4 8 16

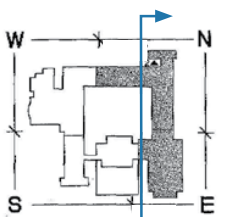


BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - Quadrangle Courtyard East - West Elevation Schluntz Wing & Gym



Part G - Schluntz Wing - West Elevation



BHS RENOVATION - BHS Exterior Window Renovation Scope Diagrams

BHS Existing - Quadrangle Courtyard West - East Elevation at Cafeteria/Auditorium & Rogers Wing



Part A - Greenough Building - North Elevation



Part B - Rogers Wing - Window Replacement
exclude/coordinate with Options 4B

