

APPENDIX 6

4.6 Construction Estimate

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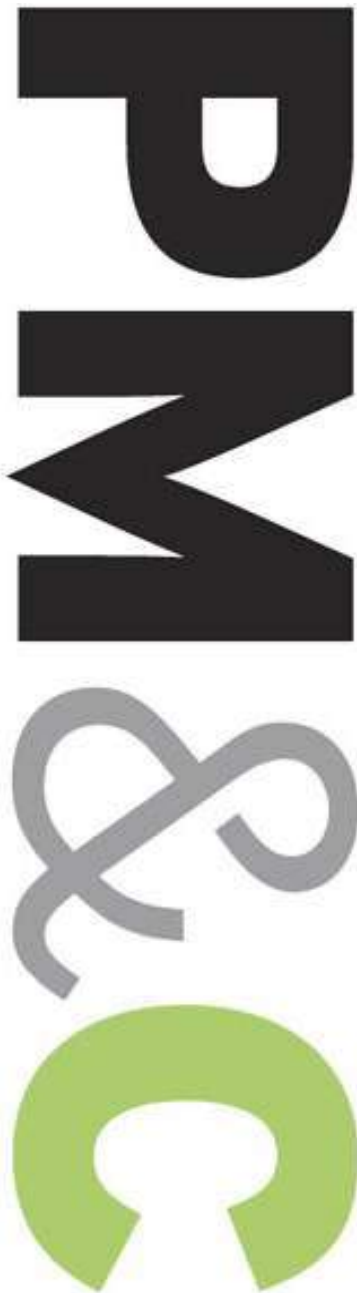
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& APPROVALS
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APPENDIX
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PSR Estimate

**Florence Roche Elementary School
Construction Options**
Groton, MA

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Prepared for:

Studio G

April 22, 2020

PSR Estimate

MAIN CONSTRUCTION COST SUMMARY

	Construction Start	Gross Floor Area	\$/sf	Estimated Construction Cost
NEW CONSTRUCTION OPTION				
New Building	Apr-22	109,855	\$335.69	\$36,877,338
Demolish Existing Building		69,468	\$8.00	\$555,744
HazMat removals at existing building				\$1,249,360
Sitework - Trade Costs				\$4,368,522
SUBTOTAL TRADE COSTS BUILDING and SITEWORK		109,855	\$391.89	\$43,050,964
Design and Estimating Contingency	12.0%			\$5,166,116
Escalation Allowance	7.0%			\$3,013,567
Phasing and Logistics				NR
SUBTOTAL with CONTINGENCIES				\$51,230,647
General Conditions	24	Mths	\$130,000	\$3,120,000
General Requirements	3.0%			\$1,536,919
Insurances	2.5%			\$1,280,766
Bond	1.00%			\$512,306
Fee	2.5%			\$1,442,016
GMP Contingency	2.5%			\$1,442,016
TOTAL ESTIMATED CONSTRUCTION COST		109,855	\$551.31	\$60,564,670

PSR Estimate

This PSR estimate was produced from outlines drawings dated April 10, 2020 as well as narratives and other documentation prepared by Studio G and their design team.

This estimate includes all direct construction costs, construction manager's overhead and profit 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:

- All professional fees and insurance
- Building Permit costs
- Land acquisition, feasibility, and financing costs
- 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 (e.g. draperies, furniture and equipment)
- Utility company back charges, including work required off-site
- Work to City streets and sidewalks including new signals, (except as noted in this estimate)
- Construction or occupancy phasing or off hours' work, (except as noted in this estimate)

Florence Roche Elementary School
Groton, MA

PSR Estimate

GFA

109,855

CONSTRUCTION COST SUMMARY

<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>
SUMMARY NEW OPTION			
A10 FOUNDATIONS		\$2,221,780	
A1010 Standard Foundations	\$1,503,237		\$13.68
A1020 Special Foundations	\$0		\$0.00
A1030 Lowest Floor	\$718,543		\$6.54
A20 BASEMENT CONSTRUCTION		\$0	
A2010 Basement Excavation	\$0		\$0.00
A2020 Basement Walls	\$0		\$0.00
B10 SUPERSTRUCTURE		\$4,405,150	
B1010 Upper Floor	\$1,949,473		\$17.75
B1020 Roof Construction	\$2,455,677		\$22.35
B20 EXTERIOR CLOSURE		\$6,822,184	
B2010 Exterior Walls	\$4,862,157		\$44.26
B2020 Windows	\$1,841,884		\$16.77
B2030 Exterior Doors	\$118,143		\$1.08
B30 ROOFING		\$1,586,821	
B3010 Roof Coverings	\$1,536,821		\$13.99
B3020 Roof Openings	\$50,000		\$0.46
C10 INTERIOR CONSTRUCTION		\$4,375,727	
C1010 Partitions	\$2,679,259		\$24.39
C1020 Interior Doors	\$615,910		\$5.61
C1030 Specialties/Millwork	\$1,080,558		\$9.84
C20 STAIRCASES		\$319,092	
C2010 Stair Construction	\$280,500		\$2.55
C2020 Stair Finishes	\$38,592		\$0.35
C30 INTERIOR FINISHES		\$3,020,905	
C3010 Wall Finishes	\$932,064		\$8.48
C3020 Floor Finishes	\$1,046,615		\$9.53
C3030 Ceiling Finishes	\$1,042,226		\$9.49
D10 CONVEYING SYSTEMS		\$135,000	
D1010 Elevator	\$135,000		\$1.23
D20 PLUMBING		\$1,812,608	
D20 Plumbing	\$1,812,608		\$16.50
D30 HVAC		\$6,178,970	
D30 HVAC	\$6,178,970		\$56.25
D40 FIRE PROTECTION		\$604,203	

Florence Roche Elementary School
Groton, MA

PSR Estimate

GFA

109,855

CONSTRUCTION COST SUMMARY

<i>BUILDING SYSTEM</i>	<i>SUB-TOTAL</i>	<i>TOTAL</i>	<i>\$/SF</i>
SUMMARY NEW OPTION			
D40 Fire Protection	\$604,203		\$5.50
D50 ELECTRICAL		\$3,625,215	
D5040 Electrical Systems	\$3,625,215		\$33.00
E10 EQUIPMENT		\$565,000	
E10 Equipment	\$565,000		\$5.14
E20 FURNISHINGS		\$1,204,683	
E2010 Fixed Furnishings	\$1,204,683		\$10.97
F20 HAZMAT REMOVALS		\$0	
F2010 Interior Demo	\$0		\$0.00
TOTAL DIRECT COST (Trade Costs)		\$36,877,338	\$335.69

PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

GROSS FLOOR AREA CALCULATION

1							
2	First Floor	64,611					
3	Second Floor	45,244					
4							
5	TOTAL GROSS FLOOR AREA (GFA)					109,855	sf

A10 FOUNDATIONS

A1010 STANDARD FOUNDATIONS

Strip footings: 2'-4" x 1'-0"

11							
12	Excavation	1,993	cy	12.00	23,916		
13	Store on site for reuse	1,993	cy	8.00	15,944		
14	Backfill with selected material	1,839	cy	9.00	16,551		
15	Formwork	15,844	sf	14.00	221,816		
16	Re-bar	17,000	lbs	1.50	25,500		
17	Concrete material; 3,000 psi	154	cy	135.00	20,790		
18	Placing concrete	154	cy	120.00	18,480		
19							
20	<u>Foundation wall: 18" thick</u>						
21	Formwork	13,600	sf	18.00	244,800		
22	Re-bar	27,200	lbs	1.50	40,800		
23	Concrete material; 3,000 psi	397	cy	135.00	53,595		
24	Placing concrete	397	cy	120.00	47,640		
25	Dampproofing foundation wall and footing	10,200	sf	1.85	NR		
26	Insulation to foundation walls; 2" thick; both sides	13,600	sf	2.50	34,000		
27	Form shelf	1,700	lf	6.00	10,200		
28							
29	<u>Column footings - 9' x 9' x 2'-0" interior footing</u>						
30	Excavation	1,878	cy	14.00	26,292		
31	Store on site for reuse	1,878	cy	8.00	15,024		
32	Backfill with selected material	1,405	cy	12.00	16,860		
33	Formwork	5,400	sf	16.00	86,400		
34	Re-bar	56,250	lbs	1.50	84,375		
35	Concrete material; 3,000 psi	473	cy	135.00	63,855		
36	Placing concrete	473	cy	150.00	70,950		
37							
38	<u>Column footings - 8'-0" x 8'-0" x 2'-0" exterior footing</u>						
39	Excavation	693	cy	14.00	9,702		
40	Store on site for reuse	693	cy	8.00	5,544		
41	Backfill with selected material	369	cy	12.00	4,428		
42	Formwork	4,160	sf	16.00	66,560		
43	Re-bar	22,750	lbs	1.50	34,125		
44	Concrete material; 3,000 psi	324	cy	135.00	43,740		
45	Placing concrete	324	cy	150.00	48,600		
46							
47	<u>Miscellaneous</u>						
48	Rock removal allowance	1	ls		NR		
49	Foundation drain	1,700	lf	22.00	37,400		
50	Piers/pilasters	83	cy	750.00	62,250		
51	Set anchor bolts grout plates	140	ea	165.00	23,100		
52	Dewatering allowance	1	ls	30,000.00	30,000		
53	SUBTOTAL						1,503,237

A1020 SPECIAL FOUNDATIONS

No Work in this section

SUBTOTAL

A1030 LOWEST FLOOR CONSTRUCTION

New Slab on grade, 5" thick

54							
55	Rough and fine grade	64,611	sf	0.50	32,306		
56	Base course; 8" thick; compacted	1,603	cy	40.00	64,120		
57	Mesh Re-bar 15% lap	74,303	sf	1.15	85,448		
58	Concrete -5" thick; 4,000 psi	1,030	cy	145.00	149,350		
59	Place & finish including control joints	64,611	sf	2.50	161,528		



PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

62	Moisture Mitigation; admixture	1,030	cy	60.00	NR		
63	Vapor barrier under slab on grade	64,611	sf	1.00	64,611		
64	Rigid insulation beneath slab on grade; 2" thick	64,611	sf	2.50	NR		
65	Remove and replace unsuitable material; allowance for 8"	1,603	cy	60.00	96,180		
66	<u>Miscellaneous</u>						
67	Underslab drainage	64,611	sf	3.00	NR		
67	Equipment pads	1	ls	5,000.00	5,000		
68	Loading dock	1	ls	25,000.00	25,000		
69	New elevator pit	1	ls	35,000.00	35,000		
70	SUBTOTAL					718,543	

TOTAL - FOUNDATIONS						\$2,221,780
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A20 BASEMENT CONSTRUCTION

A2010 BASEMENT EXCAVATION

No Work in this section
SUBTOTAL

A2020 BASEMENT WALLS

No Work in this section
SUBTOTAL

TOTAL - BASEMENT CONSTRUCTION					
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B10 SUPERSTRUCTURE

766 tns
13.95 lbs/sf

B1010 FLOOR CONSTRUCTION

Floor Structure - Steel:

92	Structure at Typical floors; 14 PSF	317	tns	3,900.00	1,236,300		
93	Premium for HSS steel	79	tns	400.00	31,600		
94	Shear studs	5,656	ea	6.00	33,936		
95	Platform/ stage framing	996	sf	15.00	14,940		
96	<u>Decking</u>						
97	Metal floor decking; 2", 18 gage	45,244	sf	4.00	180,976		
98	Mesh reinforcement in concrete topping	52,031	sf	1.10	57,234		
99	Concrete topping to metal decking, 4 1/2" thick; Light weight	660	cy	170.00	112,200		
100	Placing concrete topping	45,244	sf	3.00	135,732		
101	Moisture Mitigation; admixture	660	cy	60.00	NR		
102	<u>Miscellaneous</u>						
103	Rebar at slab edges	11,311	lbs	1.50	16,967		
104	Firestopping at floor penetrations	109,855	gsf	0.15	16,478		
105	Spray-applied fireproofing to beams and columns only	45,244	sf	2.50	113,110		
106	SUBTOTAL					1,949,473	

B1020 ROOF CONSTRUCTION

Roof Structure - Steel:

110	Structure at roof	449	tns	3,900.00	1,751,100		
111	Premium for HSS steel	112	tns	400.00	44,800		
112	<u>Decking</u>						
113	Metal roof decking; 3"	64,611	sf	4.00	258,444		
114	Premium for acoustic deck at Gymnasium	6,000	sf	5.00	30,000		
115	Concrete slab for roof top equipment - allow	5,000	sf	10.00	50,000		
116	<u>Miscellaneous</u>						
117	Support framing to roof screen	15	tns	4,500.00	67,500		
118	Canopy framing - allowance	2,000	sf	30.00	60,000		
119	Spray-applied fireproofing to beams and deck	64,611	sf	3.00	193,833		
120	SUBTOTAL					2,455,677	

TOTAL - SUPERSTRUCTURE						\$4,405,150
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PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

B20 EXTERIOR CLOSURE

B2010 EXTERIOR WALLS

Interior skin

6" metal stud back-up	41,456	sf	10.00	414,560
4" GF CMU to 14' in Gymnasium	1,190	sf	32.00	38,080
GWB to inside of exterior wall	41,456	sf	3.50	145,096
Gypsum densglass sheathing board	41,456	sf	2.90	120,222
Air/Vapor barrier to exterior walls, peel + stick	41,456	sf	7.50	310,920
Batt insulation, 6" in cavity	41,456	sf	4.00	165,824
Rigid insulation, 2" on face of sheathing	41,456	sf	2.75	114,004
Soffit framing including backup at projections & canopy	5,160	sf	23.15	119,454

Exterior skin

Face brick	20,728	sf	39.00	808,392
Composite aluminum panel rainscreen system; Phenolic or similar; 50% of exterior wall	20,728	sf	80.00	1,658,240
Composite aluminum panel to underside of canopy and building overhangs	5,160	sf	80.00	412,800
Granite sills	1,727	lf	45.00	77,715
Roof screen	3,000	sf	65.00	195,000
Exterior signage - allowance	1	ls	10,000.00	10,000
Miscellaneous sealants & flashings at closure	55,275	sf	1.00	55,275
Allowance for miscellaneous closure steel & angles; Relieving angles & loose lintels	1,450	lf	35.00	50,750
Scaffold to exterior walls	55,275	sf	3.00	165,825
SUBTOTAL				4,862,157

B2020 WINDOWS

Aluminum windows; double glazed	13,819	sf	100.00	967,300
Curtainwall w/ spandrel panels; double glazed (30%)	9,673	sf	125.00	518,250
Horizontal shades & vertical screen sunshades; East & West facing Classroom windows - allow	4,146	sf	200.00	200,000
Louvers - allow	1,000	lf	200.00	200,000
Louvers - allow	100	sf	55.00	5,500
Air/Vapor barrier at window & louver openings	5,113	lf	6.50	33,235
Backer rod & sealant at window & louver openings	5,113	lf	9.00	46,017
Wood blocking at window openings	5,113	lf	14.00	71,582
SUBTOTAL				1,841,884

B2030 EXTERIOR DOORS

Exterior Doors - Aluminum

6'-0" x 7'-0"	10	pr	9,000.00	90,000
3'-0" x 7'-0"	2	ea	5,000.00	10,000
<u>FRP doors, frames and HW</u>				
Single leaf - allow	1	ea	1,600.00	1,600
Double leaf - allow	3	pr	2,500.00	7,500
Overhead door	1	al	5,000.00	5,000
<u>Miscellaneous</u>				
Backer rod & sealant to exterior doors	311	lf	9.00	2,799
Wood blocking at door openings	311	lf	4.00	1,244
SUBTOTAL				118,143

TOTAL - EXTERIOR CLOSURE

\$6,822,184

B30 ROOFING

B3010 ROOF COVERINGS

PVC roof membrane mechanically fastened with 7" insulation and vapor barrier	64,611	sf	18.50	1,195,304
12" wide Factory fabricated pre-finished aluminum fascia trim/roof edge	1,700	lf	50.00	85,000

PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

179	Membrane roof walkway pads	1	ls	10,000.00	10,000		
180	Exterior soffit; pre-finished aluminum at projections	300	sf	50.00	15,000		
181	Canopy - allowance for PVC roofing	2,000	sf	14.00	28,000		
182	Miscellaneous sealants & flashings at roof	64,611	sf	1.50	96,917		
183	Roof blocking	10,200	lf	8.00	81,600		
184	Allowance for miscellaneous roof accessories; hatches, ladders etc.	1	ls	25,000.00	25,000		
185	SUBTOTAL					1,536,821	

B3020 ROOF OPENINGS

188	Aluminum skylight - allow	1	ls	50,000.00	50,000		
189	SUBTOTAL					50,000	

TOTAL - ROOFING							\$1,586,821
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C10 INTERIOR CONSTRUCTION

C1010 PARTITIONS

195	CMU at gymnasium	5,025	sf	32.00	160,800		
195	CMU at elevator shaft	1,200	sf	35.00	42,000		
196	CMU at kitchen, mech rooms, receiving	3,855	sf	26.00	100,230		
196	Interior GWB partitions at corridor	41,130	sf	19.50	802,035		
197	Interior GWB partitions at classroom demising walls	28,800	sf	20.50	590,400		
197	Plumbing partition	4,260	sf	21.50	91,590		
196	Typical partition	13,365	sf	15.50	207,158		
196	Additional partitions in admin area not shown	3,771	sf	20.00	75,420		
196	Premium for 2HR rating	5,685	sf	4.00	22,740		
197	Nana walls; allowance	500	sf	200.00	100,000		
198	Glazed walls/borrowed lights; 5% of walls	5,380	sf	80.00	430,400		
199	Sealants & caulking at partitions	112,971	gsf	0.50	56,486		
200	SUBTOTAL					2,679,259	

C1020 INTERIOR DOORS

201	Single doors	120	ea	2,100.00	252,000		
201	Double doors	11	pr	4,200.00	46,200		
202	Double doors; glazed	10	pr	8,000.00	80,000		
203	<u>Vestibule Doors - Aluminum</u>						
204	6'-0" x 7'-0"	2	pr	9,000.00	18,000		
205	Allowance for sidelights and premium doors	109,855	gsf	2.00	219,710		
206	SUBTOTAL					615,910	

C1030 SPECIALTIES / MILLWORK

209	Toilet compartments	21	ea	2,000.00	42,000		
210	Toilet accessories; single	25	rms	860.00	21,500		
211	Toilet accessories; gang	7	rms	3,000.00	21,000		
212	Janitor closets	2	ea	500.00	1,000		
213	Tack boards/Marker Boards	109,855	gsf	1.00	109,855		
214	Stage ramp	156	sf	35.00	5,460		
215	IWB						FF&E
215	Guardrail at seating stair; glass	57	lf	500.00	28,500		
216	Fire extinguisher cabinets	31	ea	350.00	10,850		
217	Allowance for millwork	109,855	gsf	2.00	219,710		
218	Metal corridor lockers; single tier	109,855	gsf	1.50	164,783		
219	Signage/ graphics	109,855	gsf	0.90	98,870		
220	Misc. blocking	109,855	gsf	0.50	54,928		
221	Misc. metals	109,855	gsf	1.50	164,783		
222	Misc. sealants	109,855	gsf	1.25	137,319		
223	SUBTOTAL					1,080,558	

TOTAL - INTERIOR CONSTRUCTION							\$4,375,727
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PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

C20 STAIRCASES

C2010 STAIR CONSTRUCTION

Egress stair	3	flt	30,000.00	90,000		
Lobby area seating stair; complete	1	ls	180,000.00	180,000		
Concrete fill to stairs	3	flt	3,500.00	10,500		
SUBTOTAL						280,500

C2020 STAIR FINISHES

Precast treads and risers	1	ls	10,000.00	10,000		
Rubber tile at egress stairs - landings	180	sf	14.00	2,520		
Rubber tile at egress stairs - treads & risers	776	lft	22.00	17,072		
High performance coating to stairs including all railings etc.	3	flt	3,000.00	9,000		
SUBTOTAL						38,592

TOTAL - STAIRCASES

\$319,092

C30 INTERIOR FINISHES

C3010 WALL FINISHES

Paint to partitions	178,560	sf	1.00	178,560		
4'-6" high Porcelain tile wainscot in corridors	12,339	sf	24.00	296,136		
Ceramic wall tile in bathrooms, full height	11,384	sf	22.00	250,448		
Acoustic panels in Gymnasium - 14' to deck	5,120	sf	16.00	81,920		
GRG interior column covers - allowance	1	ls	25,000.00	25,000		
Proscenium opening; maple veneer surround w/ porcelain tile accent	1	ls	100,000.00	100,000		
SUBTOTAL						932,064

C3020 FLOOR FINISHES

Linoleum in Cafeteria, Corridors, Classrooms etc.	76,006	sf	6.50	494,039		
Porcelain tile in lobby and connector	6,807	sf	24.00	163,368		
QT in kitchen	1,947	sf	26.00	50,622		
Carpet in Library and Admin spaces	7,228	sf	6.00	43,368		
Wood athletic flooring in Gym	6,000	sf	18.00	108,000		
Ceramic tile in bathrooms, mudset on WP membrane	4,378	sf	24.00	105,072		
Stage - wood dance flooring system	996	sf	22.00	21,912		
Stage risers	160	lf	50.00	8,000		
Sealed concrete at Mech/Elec/ Receiving/ Storage	1,000	sf	2.00	2,000		
Allowance for bases throughout	1	ls	50,234.20	50,234		
SUBTOTAL						1,046,615

C3030 CEILING FINISHES

2x2 ACT in Media center	3,579	sf	8.00	28,632		
2x2 ACT in Corridors;	6,807	sf	10.00	68,070		
2x2 ACT in typical Classrooms, Teacher Prep, Admin areas; Armstrong Ultima	92,469	sf	6.00	554,814		
Premium for decorative ceilings	5,000	sf	30.00	150,000		
Paint to exposed ceiling in Gymnasium & BOH	7,000	sf	3.00	21,000		
Allowance for gwb soffits throughout	109,855	gsf	2.00	219,710		
SUBTOTAL						1,042,226

TOTAL - INTERIOR FINISHES

\$3,020,905

D10 CONVEYING SYSTEMS

PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

D1010 ELEVATOR

281	Elevator pit ladder & sills	1	ls	5,000.00	5,000		
282	Passenger elevator, 2 stop	1	ea	130,000.00	130,000		
283						135,000	
284	SUBTOTAL						

TOTAL - CONVEYING SYSTEMS

\$135,000

D20 PLUMBING

D20 PLUMBING, GENERALLY

291	New plumbing; Complete	109,855	gsf	16.50	1,812,608		
292	SUBTOTAL					1,812,608	

TOTAL - PLUMBING

\$1,812,608

D30 HVAC

D30 HVAC, GENERALLY

HVAC Option 1 - C+ HW Heating plant & VAV

301	High Efficiency HW condensing boilers; 2500 MBH	3	ea	62,500.00	187,500		
302	VFD Pumps; 400 gpm; 25 hp	2	loc	18,000.00	36,000		
303	Expansion tank	2	ea	3,000.00	6,000		
304	Air separator	2	ea	2,000.00	4,000		
305	Boiler flues	1	ls	20,000.00	20,000		
306	Chiller; air cooled; high efficiency; 320 T	1	ls	225,000.00	225,000		
307	VFD Pumps; 515 gpm; 30 hp	2	loc	25,000.00	50,000		
308	Glycol system	1	ls	20,000.00	20,000		
309	Radiant ceiling panels	2,380	lf	100.00	238,000		
310	Minisplits; 2T	1	ls	12,000.00	12,000		
311	HVAC equipment; ie fine tube; CUH etc.	109,855	gsf	0.50	54,928		
312	AHU - 1; 15,000 cfm	1	ea	150,000.00	150,000		
313	AHU - 2; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
314	AHU - 3 ; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
315	AHU - 4 ; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
316	AHU - 5; 8,000 cfm	1	ea	80,000.00	80,000		
317	AHU - 6 ; 9,000 cfm with ERW	1	ea	135,000.00	135,000		
318	Kitchen MUA; 4000 cfm	1	ea	12,000.00	12,000		
319	VAV box with heating coil	70	ea	950.00	66,500		
320	Fan coil unit	5	ea	2,000.00	10,000		
321	Kitchen EF and welded ductwork	1	ls	35,000.00	35,000		
322	Exhaust fans	109,855	sf	0.20	21,971		
323	Ductwork & accessories	109,855	lbs	15.00	1,647,825		
324	Ductwork insulation	65,913	sf	5.00	329,565		
325	RGD	109,855	sf	0.50	54,928		
326	Hot water piping	109,855	gsf	3.50	384,493		
327	CW piping	109,855	gsf	2.00	219,710		
328	Condensate drain piping	109,855	gsf	0.25	27,464		
329	Pipe insulation	109,855	gsf	2.00	219,710		
330	Automatic temperature control DDC; Co2 Monitoring	109,855	gsf	6.00	659,130		
331	Testing & balancing	109,855	gsf	0.75	82,391		
332	Miscellaneous - Fees, Permits, Coordination	109,855	gsf	1.00	109,855		
333	SUBTOTAL					6,178,970	

TOTAL - HVAC

\$6,178,970

D40 FIRE PROTECTION

D40 FIRE PROTECTION, GENERALLY

334	Fire protection	109,855	gsf	5.50	604,203		
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PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

335	SUBTOTAL					604,203	
337	TOTAL - FIRE PROTECTION						\$604,203

D50 ELECTRICAL

342	Electrical requirements including 2500A gear and distribution, sub-metering, equipment wiring and connections, 200kW Em Gen diesel roof mounted and associated gear and distribution, load bank, lighting, light controls, branch devices and associated wiring. Fire alarm system, BDA, Mass notification system, lightning protection system, sound systems at Gym, PV system infrastructure only and lightning protection system	109,855	gsf	25.00	2,746,375		
343	Telecommunications including devices, cabling master clock, PA and Security system (assumes Network switches/PBX and AV equipment and cabling is by other FF&E)	109,855	gsf	8.00	878,840		
344	SUBTOTAL					3,625,215	
346	TOTAL - ELECTRICAL						\$3,625,215

E10 EQUIPMENT

E10 EQUIPMENT, GENERALLY

352	Residential appliances						
353	Refrigerator/ Freezer	1	ea	2,000.00	2,000		
354	U/C Refrigerator	1	ea	1,000.00	1,000		
355	Dishwasher	3	ea	1,200.00	3,600		
356	Microwave	3	ea	200.00	600		
357	U/C Ice maker	1	ea	1,000.00	1,000		
358	Kitchen Equipment	1,947	sf	200.00	389,400		
359	Cafeteria Platform Curtains & Rigging	1	ls	10,000.00	10,000		
360	Electrically operated projection screen at Cafeteria stage; 12'-8" x 8'	1	ea	10,000.00	10,000		
362	116600 ATHLETIC EQUIPMENT						
363	Scoreboard and shot clock	1	ea	15,000.00	15,000		
364	Volleyball sleeves	1	ls	3,000.00	3,000		
365	Gym wall pads	1,650	sf	16.00	26,400		
366	Basketball backstops; retractable	6	ea	10,500.00	63,000		
367	Gymnasium dividing net	1,100	sf	20.00	22,000		
368	Motorized assisted telescoping gymnasium bleacher seating w/ custom painted graphics on bleacher risers 100 seats	1	ls	18,000.00	18,000		
369	SUBTOTAL					565,000	
371	TOTAL - EQUIPMENT						\$565,000

E20 FURNISHINGS

E2010 FIXED FURNISHINGS

377	Casework allowance (solid surface tops at all locations)	109,855	gsf	10.00	1,098,550		
378	Recessed entry mats - allow	200	sf	32.00	6,400		
379	Walk off mats - allow	200	sf	15.00	3,000		
380	Window treatments	13,819	sf	7.00	96,733		
381	SUBTOTAL					1,204,683	

E2020 MOVABLE FURNISHINGS

384	All movable furnishings to be provided and installed by owner						
385	SUBTOTAL					NIC	
387	TOTAL - FURNISHINGS						\$1,204,683



PSR Estimate

GFA 109,855

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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NEW BUILDING OPTION

390	F10	SPECIAL CONSTRUCTION					
391							
392	F10	SPECIAL CONSTRUCTION					
393		No items in this section					
394		SUBTOTAL					
395							
396		TOTAL - SPECIAL CONSTRUCTION					
397							
398							
399	F20	SELECTIVE BUILDING DEMOLITION					
400							
401	F2010	BUILDING ELEMENTS DEMOLITION					
402		No items in this section					
403		SUBTOTAL					
404							
405	F2020	HAZARDOUS COMPONENTS ABATEMENT					
406		Removal of Asbestos Containing Materials in existing building - Included in Summary					
407		SUBTOTAL					
408							
409		TOTAL - SELECTIVE BUILDING DEMOLITION					



PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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SITework NEW OPTION

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G SITEWORK

350,000 sf -

G10 SITE PREPARATION & DEMOLITION

Site Demolitions and Relocations

Clear and grub allowance	1	ls	50,000.00	50,000	
Site construction fence/barricades					See phasing below
Remove sidewalk	1	ls	20,000.00	20,000	
Remove and dispose Bituminous Paving	47,000	sf	1.50	70,500	
Remove and dispose track	35,000	sf	1.50	52,500	
Remove and dispose athletic field	96,000	sf	0.50	48,000	
Protect and maintain utilities	1	ls	25,000.00	25,000	
Remove existing utilities + structures	1	ls	30,000.00	30,000	
Site construction fence/barricades	2,800	lf	18.00	50,400	

Site Earthwork

Strip topsoil, store on site	5,556	cy	16.00	88,896	
Remove excess topsoil					NO COST
Cut + fills	12,963	cy	15.00	194,445	
Fine grading	38,889	sy	2.00	77,778	
Construction entrance	1	ls	20,000.00	20,000	
Silt fence/erosion control	2,800	lf	11.00	30,800	
Erosion control maintenance	1	ls	25,000.00	25,000	

Hazardous Waste Remediation

SUBTOTAL

783,319

G20 SITE IMPROVEMENTS

Roadways and Parking Lots

Bituminous concrete paving	50,000	sf		-	
gravel base 12"	1,852	cy	40.00	74,080	
bituminous concrete 4"	5,556	sy	28.00	155,568	
Vertical granite curbs	3,060	lf	42.00	128,520	
Other road markings	1	ls	10,000.00	10,000	
HC curb cuts	3	loc	350.00	1,050	
New traffic signs	1	ls	5,000.00	5,000	

Roadways: pervious

Bituminous concrete paving	7,800	sf		-	
gravel base 36"	867	cy	40.00	34,680	
bituminous concrete 4"	867	sy	35.00	30,345	
Bituminous curbs	1,600	lf	38.00	60,800	

Pedestrian paving

Concrete paving					
gravel base; 8" thick	434	cy	40.00	17,360	
concrete paving; 4" thick	17,500	sf	9.00	157,500	
concrete paving; plaza	12,000	sf	15.00	180,000	
Maker space outdoor patio	1,400	sf	25.00	35,000	

Play surface

gravel base; 8" thick	199	cy	40.00	7,960	
Poured in place rubber safety surface	8,000	sf	26.00	208,000	
Play equipment	1	loc	250,000.00	250,000	
5' Ornamental fence	401	lf	180.00	72,180	

Site Improvements: allowances

Outdoor classroom/rain garden	15,000	sf	15.00	225,000	
Entrance sign	1	ea	15,000.00	15,000	



PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	ESTD COST	SUB TOTAL	TOTAL COST	
SITework NEW OPTION								
55	Allowance for other site improvements; site steps, walls, benches, fencing	1	ls	200,000.00	200,000			
56	<u>Landscaping & Plantings:</u>							
57	Spread existing amended topsoil, 6" @ seeded areas	5,556	cy	35.00	194,460			
58	Lawn - loam and seed	175,000	sf	0.35	61,250			
59	<u>Landscaping & Plantings:</u>							
60	Allowance	1	ls	200,000.00	200,000			
61	SUBTOTAL					2,323,753		
62								
63	G30 CIVIL MECHANICAL UTILITIES							
64	<u>Water supply</u>							
65	8" CLDI	700	lf	90.00	63,000			
66	6" DI	700	lf	70.00	49,000			
67	Connect to existing	2	loc	5,000.00	10,000			
68	Fire hydrants	2	loc	2,600.00	5,200			
69	FD connection	1	ea	2,000.00	2,000			
70	Valves	4	ea	750.00	3,000			
71	<u>Sanitary sewer</u>							
72	8" PVC	500	lf	60.00	30,000			
73	New SMH	2	loc	3,500.00	7,000			
74	Grease trap	1	ls	12,000.00	12,000			
75	Connect to existing SMH	1	ea	2,000.00	2,000			
76	<u>Storm Sewer</u>							
77	Allowance for complete system; piping, drainage structures, rain gardens and infiltration systems - pricing based on site hard surface area	75,500	sf	10.00	755,000			
78	SUBTOTAL					938,200		
79								
80	G40 ELECTRICAL UTILITIES							
81	<u>Power</u>							
82	Utility company charges (allow)	1	ls	20,000.00	20,000	By Owner		
83	Riser	1	ea	1,000.00	1,000			
84	Primary ductbank 2-5" PVC conduits, empty, concrete encased	700	lf	95.00	66,500			
85	Transformer by utility company					By Others		
86	Transformer pad	1	ea	2,500.00	2,500			
87	Secondary ductbank 4-4" PVC conduits, 1200A service, concrete encased	50	lf	270.00	13,500			
88	Generator ductbank EE 5-4" PVC conduits, 600A & 100A service & control wiring, concrete encased	50	lf	175.00	8,750			
89	<u>Communications</u>							
90	Riser	1	ls	1,000.00	1,000			
91	Telecom ductbank DD 4-4" PVC conduits, empty, concrete encased	700	lf	150.00	105,000			
92	<u>Site Lighting</u>							
93	Lighting including circuitry	50,000	sf	2.50	125,000			
94	SUBTOTAL					323,250		
95								
96	TOTAL - SITE DEVELOPMENT						\$4,368,522	

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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HVAC ALTERNATES

D30 HVAC, GENERALLY

HVAC Option 1 - C+ HW Heating plant & VAV

High Efficiency HW condensing boilers; 2500 MBH	3	ea	62,500.00	187,500		
VFD Pumps; 400 gpm; 25 hp	2	loc	18,000.00	36,000		
Expansion tank	2	ea	3,000.00	6,000		
Air separator	2	ea	2,000.00	4,000		
Boiler flues	1	ls	20,000.00	20,000		
Chiller; air cooled; high efficiency; 320 T	1	ls	225,000.00	225,000		
VFD Pumps; 515 gpm; 30 hp	2	loc	25,000.00	50,000		
Glycol system	1	ls	20,000.00	20,000		
Radiant ceiling panels	2,380	lf	100.00	238,000		
Minisplits; 2T	1	ls	12,000.00	12,000		
HVAC equipment; ie fine tube; CUH etc.	109,855	gsf	0.50	54,928		
AHU - 1; 15,000 cfm	1	ea	150,000.00	150,000		
AHU - 2; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
AHU - 3; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
AHU - 4; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
AHU - 5; 8,000 cfm	1	ea	80,000.00	80,000		
AHU - 6; 9,000 cfm with ERW	1	ea	135,000.00	135,000		
Kitchen MUA; 4000 cfm	1	ea	12,000.00	12,000		
VAV box with heating coil	70	ea	950.00	66,500		
Fan coil unit	5	ea	2,000.00	10,000		
Kitchen EF and welded ductwork	1	ls	35,000.00	35,000		
Exhaust fans	109,855	sf	0.20	21,971		
Ductwork & accessories	110,000	lbs	15.00	1,650,000		
Ductwork insulation	66,000	sf	5.00	330,000		
RGD	109,855	sf	0.50	54,928		
Hot water piping	109,855	gsf	3.50	384,493		
CW piping	109,855	gsf	2.00	219,710		
Condensate drain piping	109,855	gsf	0.25	27,464		
Pipe insulation	109,855	gsf	2.00	219,710		
Automatic temperature control DDC; Co2 Monitoring	109,855	gsf	6.00	659,130		
Testing & balancing	109,855	gsf	0.75	82,391		
Miscellaneous - Fees, Permits, Coordination	109,855	gsf	1.00	109,855		
SUBTOTAL						6,181,580

TOTAL - HVAC	\$6,181,580
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COST PER GSF

\$56.27

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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HVAC ALTERNATES

D30 HVAC, GENERALLY

HVAC Option 2 - C+ HW Heating plant Standard VAV AHU

High Efficiency HW condensing boilers; 2500 MBH	3	ea	62,500.00	187,500		
VFD Pumps; 400 gpm; 25 hp	2	loc	18,000.00	36,000		
Expansion tank	2	ea	3,000.00	6,000		
Air separator	2	ea	2,000.00	4,000		
Boiler flues	1	ls	20,000.00	20,000		
Chiller; air cooled; high efficiency; 320 T	1	ls	225,000.00	225,000		
VFD Pumps; 515 gpm; 30 hp	2	loc	25,000.00	50,000		
Glycol system	1	ls	20,000.00	20,000		
Radiant ceiling panels	2,380	lf	100.00	238,000		
Minisplits; 2T	1	ls	12,000.00	12,000		
HVAC equipment; ie fine tube; CUH etc.	109,855	gsf	0.50	54,928		
AHU - 1; 15,000 cfm	1	ea	150,000.00	150,000		
AHU - 2; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
AHU - 3 ; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
AHU - 4 ; 24,000 cfm with ERW	1	ea	360,000.00	360,000		
AHU - 5; 8,000 cfm	1	ea	80,000.00	80,000		
AHU - 6 ; 8,000 cfm with ERW	1	ea	120,000.00	120,000		
Kitchen MUA; 4000 cfm	1	ea	12,000.00	12,000		
VAV box with heating coil	70	ea	950.00	66,500		
Fan coil unit	5	ea	2,000.00	10,000		
Kitchen EF and welded ductwork	1	ls	35,000.00	35,000		
Exhaust fans	109,855	sf	0.20	21,971		
Ductwork & accessories	110,000	lbs	15.00	1,650,000		
Ductwork insulation	66,000	sf	5.00	330,000		
RGD	109,855	sf	0.50	54,928		
Hot water piping	109,855	gsf	3.50	384,493		
CW piping	109,855	gsf	2.00	219,710		
Condensate drain piping	109,855	gsf	0.25	27,464		
Pipe insulation	109,855	gsf	2.00	219,710		
Automatic temperature control DDC; Co2 Monitoring	109,855	gsf	6.00	659,130		
Testing & balancing	109,855	gsf	0.75	82,391		
Miscellaneous - Fees, Permits, Coordination	109,855	gsf	1.00	109,855		
SUBTOTAL						6,166,580

TOTAL - HVAC	\$6,166,580
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COST PER GSF

\$56.13



PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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HVAC ALTERNATES

D30 HVAC, GENERALLY

HVAC Option 3 - C+ HW Heating plant with active chilled beams

High Efficiency HW condensing boilers; 2500 MBH	3	ea	62,500.00	187,500		
VFD Pumps; 400 gpm; 25 hp	2	loc	18,000.00	36,000		
Expansion tank	2	ea	3,000.00	6,000		
Air separator	2	ea	2,000.00	4,000		
Boiler flues	1	ls	20,000.00	20,000		
Chiller; air cooled; high efficiency; 320 T	1	ls	225,000.00	225,000		
VFD Pumps; 515 gpm; 30 hp	2	loc	25,000.00	50,000		
Glycol system	1	ls	20,000.00	20,000		
Chilled beam system; 2-pipe active chilled beams	109,855	gsf	6.00	659,130		
Minisplits; 2T	1	ls	12,000.00	12,000		
HVAC equipment; ie fine tube; CUH etc.	109,855	gsf	2.00	219,710		
AHU - 1; 8,000 cfm with ERW cafeteria	1	ea	120,000.00	120,000		
AHU - 2; 8,000 cfm with ERW gymnasium	1	ea	120,000.00	120,000		
DOAS - 8,000 cfm	1	ea	144,000.00	144,000		
DOAS - 3,000 cfm	1	ea	54,000.00	54,000		
Kitchen MUA; 4000 cfm	1	ea	12,000.00	12,000		
Fan coil unit	5	ea	2,000.00	10,000		
Kitchen EF and welded ductwork	1	ls	35,000.00	35,000		
Exhaust fans	109,855	sf	0.20	21,971		
Ductwork & accessories	110,000	lbs	15.00	1,650,000		
Ductwork insulation	66,000	sf	5.00	330,000		
RGD	109,855	sf	0.50	54,928		
Hot water piping	109,855	gsf	5.50	604,203		
CW piping including secondary loop	109,855	gsf	4.50	494,348		
Condensate drain piping	109,855	gsf	0.50	54,928		
Pipe insulation	109,855	gsf	3.50	384,493		
Automatic temperature control DDC; Co2 Monitoring	109,855	gsf	6.50	714,058		
Testing & balancing	109,855	gsf	1.00	109,855		
Miscellaneous - Fees, Permits, Coordination	109,855	gsf	1.50	164,783		
SUBTOTAL						6,517,907

TOTAL - HVAC	\$6,517,907
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COST PER GSF

\$59.33

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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HVAC ALTERNATES

D30 HVAC, GENERALLY

HVAC Option 4 - C+ HW Heating plant with hybrid displacement ventilation and active chilled beams

High Efficiency HW condensing boilers; 2500 MBH	3	ea	62,500.00	187,500		
VFD Pumps; 400 gpm; 25 hp	2	loc	18,000.00	36,000		
Expansion tank	2	ea	3,000.00	6,000		
Air separator	2	ea	2,000.00	4,000		
Boiler flues	1	ls	20,000.00	20,000		
Chiller; air cooled; high efficiency; 320 T	1	ls	225,000.00	225,000		
VFD Pumps; 515 gpm; 30 hp	2	loc	25,000.00	50,000		
Glycol system	1	ls	20,000.00	20,000		
Chilled beam system; 4-pipe displacement ventilation chilled beams in classrooms; 2-pipe ACB admin spaces	109,855	gsf	6.00	659,130		
Minisplits; 2T	1	ls	12,000.00	12,000		
HVAC equipment; ie fine tube; CUH etc.	109,855	gsf	2.00	219,710		
AHU - 1; 8,000 cfm with ERW cafeteria	1	ea	120,000.00	120,000		
AHU - 2; 8,000 cfm with ERW gymnasium	1	ea	120,000.00	120,000		
DOAS - 8,000 cfm	1	ea	144,000.00	144,000		
DOAS - 3,000 cfm	1	ea	54,000.00	54,000		
Kitchen MUA; 4000 cfm	1	ea	12,000.00	12,000		
Fan coil unit	5	ea	2,000.00	10,000		
Kitchen EF and welded ductwork	1	ls	35,000.00	35,000		
Exhaust fans	109,855	sf	0.20	21,971		
Ductwork & accessories	110,000	lbs	15.00	1,650,000		
Ductwork insulation	66,000	sf	5.00	330,000		
RGD	109,855	sf	0.50	54,928		
Hot water piping	109,855	gsf	6.00	659,130		
CW piping including secondary loop	109,855	gsf	5.00	549,275		
Condensate drain piping	109,855	gsf	0.50	54,928		
Pipe insulation	109,855	gsf	4.00	439,420		
Automatic temperature control DDC; Co2 Monitoring	109,855	gsf	7.00	768,985		
Testing & balancing	109,855	gsf	1.00	109,855		
Miscellaneous - Fees, Permits, Coordination	109,855	gsf	1.50	164,783		
SUBTOTAL						6,737,615

TOTAL - HVAC	\$6,737,615
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COST PER GSF

\$61.33

PSR Estimate

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
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HVAC ALTERNATES

D30 HVAC, GENERALLY

HVAC Option 5 - VRF System

VRV Condensers	320	tn	2,000.00	640,000		
Branch controller, allow	6	ea	5,500.00	33,000		
Minisplits; 2T	1	ls	12,000.00	12,000		
HVAC equipment; ie fine tube; CUH etc.	109,855	gsf	1.00	109,855		
AHU - 1; 8,000 cfm	1	ea	80,000.00	80,000		
AHU - 2; 8,000 cfm with ERW	1	ea	120,000.00	120,000		
DOAS - 8,000 cfm	1	ea	144,000.00	144,000		
DOAS - 3,000 cfm	1	ea	54,000.00	54,000		
Kitchen MUA; 4000 cfm	1	ea	12,000.00	12,000		
VRV FCU	75	ea	3,200.00	240,000		
Kitchen EF and welded ductwork	1	ls	35,000.00	35,000		
Exhaust fans	109,855	sf	0.20	21,971		
Ductwork & accessories	90,000	lbs	15.00	1,350,000		
Ductwork insulation	54,000	sf	5.00	270,000		
RGD	109,855	sf	0.50	54,928		
Refrigerant piping	109,855	gsf	7.00	768,985		
Condensate drain piping	109,855	gsf	2.00	219,710		
Pipe insulation	109,855	gsf	3.75	411,956		
Automatic temperature control DDC; Co2 Monitoring	109,855	gsf	5.00	549,275		
Testing & balancing	109,855	gsf	0.60	65,913		
Miscellaneous - Fees, Permits, Coordination	109,855	gsf	1.50	164,783		
SUBTOTAL						5,357,376

TOTAL - HVAC	\$5,357,376
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COST PER GSF

\$48.77

