



COST ESTIMATE

ESTIMATE TYPE: RFP Estimate
CLIENT/OWNER: Bethel Public Schools
CONTRACT DESCRIPTION: **Bethel High School
HVAC Upgrade**
CONTRACT No.:
LOCATION: 300 Whittlesey Drive, Bethel, CT 06801
ESTIMATE DATE: 12/4/2023 Rev. #: 0
Rev. Date: NA



STV Incorporated
225 Park Ave South, New York, NY 10003 212-777-4400

<i>COST ESTIMATE</i>	Bethel Public Schools Bethel High School HVAC Upgrade
Contract No:	
Location: 300 Whittlesey Drive, Bethel, CT 06801	

Basis of Estimate

Alternate No. 1 - Air Conditioning to Math and English Wing Classrooms

Furnish and install DOAS-1, ACCU-2, ACCU-3, and all associated indoor VRF units serving the second and third floors. Install all associated ductwork, piping, controls, structure, and components necessary for a fully functioning system. Cap DOAS-1 duct mains in first floor ceiling for future connection. Valve and cap DOAS-2 hot water mains in the first floor ceiling for future connection. Perform unit ventilator demolition work and replacement with finned tube radiation in rooms being served by DOAS-1 on second and third floors.

Alternate No. 3 - Air Conditioning to World Language Wing Classrooms

Furnish and install DOAS-2, ACCU-4, and all associated indoor VRF units serving the associated rooms on the third floor install DOAS-2 ductwork distribution to rooms on second and third floor as indicated. Cap DOAS-2 duct mains in first floor ceiling for future connection. Install all associated piping, controls, structure and components necessary for a fully functioning system. Perform unit ventilator demolition work and replacement with finned tube radiation in rooms being served by DOAS-2.

COST ESTIMATE SUMMARY			Bethel Public Schools Bethel High School HVAC Upgrade		
Contract No:					
Location: 300 Whittlesey Drive, Bethel, CT 06801					
ESTIMATE SUMMARY					
Item No.	Description		Alt-1 - Air Conditioning to Math & English Classrooms	Alt-3 - Air Conditioning to World Language Classrooms	TOTAL
1	General Requirements	7.5%	\$140,801	\$68,119	\$208,921
2	Structural		\$54,720	\$43,506	\$98,226
3	Architectural		\$361,535	\$179,827	\$541,362
4	HVAC		\$1,304,687	\$655,497	\$1,960,185
5	Electrical		\$156,411	\$29,429	\$185,839
	Subtotal Trade Cost		\$2,018,154	\$976,379	\$2,994,533
	General Conditions	6%	\$121,089	\$58,583	\$179,672
	Subtotal		\$2,139,244	\$1,034,962	\$3,174,205
	Phasing	5%	\$106,962	\$51,748	\$158,710
	Subtotal		\$2,246,206	\$1,086,710	\$3,332,916
	GC Overhead & Profit	10%	\$94,152	\$43,121	\$137,273
	Subtotal		\$2,340,358	\$1,129,831	\$3,470,189
	Bond	1.5%	\$35,105	\$16,947	\$52,053
	Subtotal		\$2,375,463	\$1,146,779	\$3,522,242
	Escalation to Midpoint	4.2%	\$98,714	\$47,655	\$146,370
	Subtotal		\$2,474,177	\$1,194,434	\$3,668,611
	Contingency	10.0%	\$247,418	\$119,443	\$366,861
			\$2,721,595	\$1,313,877	\$4,035,473
	Project Management & Commissioning				\$144,534
	TOTAL				\$4,180,007

COST ESTIMATE			Bethel Public Schools Bethel High School HVAC Upgrade Structural - Alt-1 - Air Conditioning to Math & English Classrooms							Made by:	JS	DATE :	12/4/2023
Contract No.:										Check by:	KB		
Location: 300 Whittlesey Drive, Bethel, CT 06801										Rev No.	0	DATE :	NA
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	Structural												
2	Dunnage												
3	New/Add to Existing Dunnage	1.31	TON	\$ 8,541.55	\$11,153	\$12.00	\$1,128	\$5,400.00	\$7,051	\$0.00	\$0	\$14,805.55	\$19,332
4	Total Dunnage				\$11,153		\$1,128		\$7,051		\$0		\$19,332
5	Stairs & Railings												
6	Support steel & toe plates	0.29	TON	\$ 8,541.55	\$2,518	\$12.00	\$255	\$5,400.00	\$1,592	\$0.00	\$0	\$14,805.55	\$4,365
7	Treads & Gratings	65	SF	\$ 14.60	\$949	\$0.00	\$0	\$45.60	\$2,964	\$0.00	\$0	\$60.20	\$3,913
8	1.5" Posts & Rails	80	LF	\$ 71.18	\$5,694	\$0.00	\$0	\$120.00	\$9,600	\$0.00	\$0	\$191.18	\$15,294
9	Total Stairs & Railings				\$9,161		\$255		\$14,156		\$0		\$23,572
10	Misc Metals												
11	Framing for Enlarged/New Duct Openings	8	EA	\$ 949.06	\$7,592	\$6.00	\$384	\$480.00	\$3,840	\$0.00	\$0	\$1,477.06	\$11,816
12	Total Misc Metals				\$7,592		\$384		\$3,840		\$0		\$11,816
TOTAL STRUCTURAL					\$27,907		\$1,767		\$25,047		\$0		\$54,720

COST ESTIMATE		Bethel Public Schools Bethel High School HVAC Upgrade								Made by:	JS	DATE :	12/4/2023
Contract No.:		Architectural - Alt-1 - Air Conditioning to Math & English Classrooms								Check by:	KB		
Location: 300 Whittlesey Drive, Bethel, CT 06801										Rev No.	0	DATE :	NA
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	Architectural												
2	Walls & Partitions												
3	Wall Type 1 - 5/8" GWB w/metal studs 16" OC	376	SF	\$ 9.48	\$3,566	\$6.00	\$226	\$9.00	\$3,384	\$0.00	\$0	\$19.08	\$7,175
4	Wall Type 2 - 8" CMU reinforced and vapor barrier	160	SF	\$ 32.88	\$5,260	\$6.00	\$288	\$11.46	\$1,834	\$0.00	\$0	\$46.14	\$7,382
5	Wall Type 2 - Exterior face brick	160	SF	\$ 32.88	\$5,260	\$6.00	\$288	\$12.60	\$2,016	\$0.00	\$0	\$47.28	\$7,564
6	Double sided insulated painted aluminum panel	302	SF	\$ 12.47	\$3,767	\$6.00	\$181	\$36.00	\$10,872	\$0.00	\$0	\$49.07	\$14,820
7	Total Walls & Partitions				\$17,853		\$983		\$18,106		\$0		\$36,942
8	Ceilings												
9	Remove & replace ACT ceiling for ductwork access	14,000	SF	\$ 11.38	\$159,316	\$6.00	\$10,080	\$9.00	\$126,000	\$0.00	\$0	\$21.10	\$295,396
10	Roof Curbs & Penetrations	8	EA	\$ 2,916.00	\$23,328	\$6.00	\$1,152	\$360.00	\$2,880	\$0.00	\$0	\$3,420.00	\$27,360
11	Total Ceilings				\$182,644		\$11,232		\$128,880		\$0		\$322,756
12	Painting												
13	Painting Walls 3 coats	536	SF	\$ 3.04	\$1,628	\$6.00	\$80	\$0.24	\$129	\$0.00	\$0	\$3.43	\$1,837
14	Total Painting				\$1,628		\$80		\$129		\$0		\$1,837
TOTAL ARCHITECTURAL					\$202,125		\$12,295		\$147,114		\$0		\$361,535

COST ESTIMATE			Bethel Public Schools Bethel High School HVAC Upgrade							Make by:	JS	DATE :	12/4/2023
Contract No.:										Check by:	KB		
Location: 300 Whittlesey Drive, Bethel, CT 06801			HVAC - Alt-1 - Air Conditioning to Math & English Classrooms							Rev No.:	0	DATE :	NA
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	HVAC												
2	Equipment												
3	Remove unit ventilators	14	EA	\$ 498.93	\$6,985	\$6.00	\$336	\$0.00	\$0	\$0.00	\$0	\$522.93	\$7,321
4	Remove existing air in/outlets	12	EA	\$ 3.74	\$45	\$6.00	\$2	\$0.00	\$0	\$0.00	\$0	\$3.92	\$47
5	Remove fin tube radiation enclosures	48	LF	\$ 4.99	\$239	\$6.00	\$12	\$0.00	\$0	\$0.00	\$0	\$5.23	\$251
6	F & I New Equipment Rooftop DOAS-1	1	EA	\$ 3,991.42	\$3,991	\$30.00	\$960	\$132,000.00	\$132,000	\$0.00	\$0	\$136,951.42	\$136,951
7	F & I New Equipment Rooftop ACCU-2 & 3	2	EA	\$ 2,993.57	\$5,987	\$30.00	\$1,440	\$48,600.00	\$97,200	\$0.00	\$0	\$52,313.57	\$104,627
8	F & I New Equipment Indoor ACCU-2-2, 2-2, 3-1 & 3-2	4	EA	\$ 1,995.71	\$7,983	\$30.00	\$1,920	\$10,560.00	\$42,240	\$0.00	\$0	\$13,035.71	\$52,143
9	F & I New Equipment VRF Units	16	EA	\$ 249.46	\$3,991	\$30.00	\$960	\$4,632.00	\$74,112	\$0.00	\$0	\$4,941.46	\$79,063
10	F & I New Equipment fin tube radiation	173	LF	\$ 24.95	\$4,316	\$6.00	\$208	\$21.60	\$3,737	\$0.00	\$0	\$47.75	\$8,260
11	BMS Controls I/O Points	173	EA	\$ 873.12	\$151,050	\$6.00	\$7,266	\$390.00	\$67,470	\$0.00	\$0	\$1,305.12	\$225,786
12	Foreman Supervision (10% of Labor hours)	1	LS	\$ 19,357.85	\$19,358	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$19,357.85	\$19,358
13	Total Equipment				\$203,946		\$13,103		\$416,759		\$0		\$633,808
14	Ductwork												
15	Cut & Cap Duct	10	EA	\$ 249.46	\$2,495	\$6.00	\$120	\$60.00	\$600	\$0.00	\$0	\$321.46	\$3,215
16	Remove existing ductwork	350	LBS	\$ 3.74	\$1,310	\$6.00	\$63	\$0.00	\$0	\$0.00	\$0	\$3.92	\$1,373
17	Galvanized ductwork std SMACNA gauge	13,000	LBS	\$ 8.73	\$113,506	\$6.00	\$5,460	\$3.90	\$50,700	\$0.00	\$0	\$13.05	\$169,666
18	Acoustic lining	700	SF	\$ 3.74	\$2,619	\$6.00	\$126	\$4.20	\$2,940	\$0.00	\$0	\$8.12	\$5,685
19	Ductwrap insulation	7,850	SF	\$ 3.49	\$27,417	\$6.00	\$1,413	\$1.02	\$8,007	\$0.00	\$0	\$4.69	\$36,837
20	Rigid board insulation w/weatherproof finish	3,200	SF	\$ 13.97	\$44,706	\$6.00	\$2,304	\$6.30	\$20,160	\$0.00	\$0	\$20.99	\$67,170
21	Air in/outlets	43	EA	\$ 155.91	\$6,704	\$6.00	\$323	\$216.00	\$9,288	\$0.00	\$0	\$379.41	\$16,315
22	Volume dampers	172	SF	\$ 31.18	\$5,363	\$6.00	\$258	\$42.00	\$7,224	\$0.00	\$0	\$74.68	\$12,845
23	Smoke dampers	24	SF	\$ 99.79	\$2,395	\$6.00	\$115	\$150.00	\$3,600	\$0.00	\$0	\$254.59	\$6,110
24	Fire dampers	8	SF	\$ 43.66	\$349	\$6.00	\$17	\$78.00	\$624	\$0.00	\$0	\$123.76	\$990
25	Access doors	8	EA	\$ 37.42	\$299	\$6.00	\$14	\$72.00	\$576	\$0.00	\$0	\$111.22	\$890
26	Expansion Joints	4	EA	\$ 997.86	\$3,991	\$6.00	\$192	\$420.00	\$1,680	\$0.00	\$0	\$1,465.86	\$5,863
27	Connections to equipment	4	EA	\$ 997.86	\$3,991	\$6.00	\$192	\$240.00	\$960	\$0.00	\$0	\$1,285.86	\$5,143
28	Testing & Balancing	1	LS	\$ 9,978.55	\$9,979	\$6.00	\$480	\$0.00	\$0	\$0.00	\$0	\$10,458.55	\$10,459
29	Foreman Supervision (10% of Labor hours)	1	LS	\$ 24,148.92	\$24,149	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$24,148.92	\$24,149
30	Total Ductwork				\$249,274		\$11,077		\$106,359		\$0		\$366,710
31	Piping & Fittings												
32	1.5"-2" Hot Water piping	110	LF	\$ 55.61	\$6,117	\$6.00	\$297	\$16.80	\$1,848	\$0.00	\$0	\$75.11	\$8,262
33	New Refrigerant piping w/insulation	3,000	LF	\$ 49.43	\$148,293	\$6.00	\$7,200	\$12.00	\$36,000	\$0.00	\$0	\$63.83	\$191,493
34	Condensate drain piping	920	LF	\$ 49.43	\$45,477	\$6.00	\$2,208	\$12.00	\$11,040	\$0.00	\$0	\$63.83	\$58,725
35	Tie-ins to existing pipe	6	EA	\$ 247.16	\$1,483	\$6.00	\$72	\$36.00	\$216	\$0.00	\$0	\$295.16	\$1,771
36	Connections to equipment	22	EA	\$ 370.73	\$8,156	\$6.00	\$396	\$90.00	\$1,980	\$0.00	\$0	\$478.73	\$10,532
37	30% Glycol Solution for HW System		LS	\$ 988.62	\$0	\$6.00	\$0	\$1,200.00	\$0	\$0.00	\$0	\$0	\$0
38	Testing & Balancing & Commissioning	1	LS	\$ 9,886.21	\$9,886	\$6.00	\$480	\$0.00	\$0	\$0.00	\$0	\$10,366.21	\$10,366
39	Foreman Supervision (10% of Labor hours)	1	LS	\$ 23,019.83	\$23,020	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$23,019.83	\$23,020
40	Total Piping & Fittings				\$242,432		\$10,653		\$51,084		\$0		\$304,169
TOTAL HVAC					\$695,652		\$34,833		\$574,202		\$0		\$1,304,687

COST ESTIMATE			Bethel Public Schools Bethel High School HVAC Upgrade							Made by:	DR	DATE :	12/4/2023
Contract No.:										Check by:	KB		
Location: 300 Whittlesey Drive, Bethel, CT 06801			Electrical - Alt-1 - Air Conditioning to Math & English Classrooms							Rev No.:	0	DATE :	NA
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	Electrical												
2	Demolition												
3	Disconnect/Remove Ex. Panelboard	1	EA	\$ 3.00	\$3,567	\$1.80	\$58	\$0.00	\$0	\$0.00	\$0	\$3,624.84	\$3,625
4	Disconnect/Remove ex. Mechanical Equipment feeders	14	EA	\$ 3.00	\$1,561	\$1.80	\$25	\$0.00	\$0	\$0.00	\$0	\$113.28	\$1,586
5	Disconnect/Remove ex. MCC	1	EA	\$ 3.00	\$3,567	\$1.80	\$58	\$0.00	\$0	\$0.00	\$0	\$3,624.84	\$3,625
7	Total Demolition				\$8,695		\$140		\$0		\$0		\$8,836
8	Power Equipment												
9	Panel 225A	1	EA	\$ 3.00	\$3,121	\$1.80	\$50	\$3,000.00	\$3,000	\$0.00	\$0	\$6,171.74	\$6,172
10	Panel 100A	1	EA	\$ 3.00	\$2,452	\$1.80	\$40	\$1,560.00	\$1,560	\$0.00	\$0	\$4,052.08	\$4,052
11	2" EMT	20	LF	\$ 3.00	\$223	\$1.80	\$4	\$5.66	\$113	\$0.00	\$0	\$16.99	\$340
12	1 1/4" EMT	20	LF	\$ 3.00	\$178	\$1.80	\$3	\$3.98	\$80	\$0.00	\$0	\$13.05	\$261
13	#3/0 THHN	64	LF	\$ 3.00	\$228	\$1.80	\$4	\$3.53	\$226	\$0.00	\$0	\$7.15	\$458
14	#3 THHN	64	LF	\$ 3.00	\$114	\$1.80	\$2	\$1.28	\$82	\$0.00	\$0	\$3.10	\$198
15	#6 THHN	48	LF	\$ 3.00	\$66	\$1.80	\$1	\$0.65	\$31	\$0.00	\$0	\$2.04	\$98
16	Disconnect/Extend/Reconnect MCC ex. branch circuits	6	EA	\$ 3.00	\$2,675	\$1.80	\$43	\$360.00	\$2,160	\$0.00	\$0	\$813.11	\$4,879
17	Extend branch circuiting to new panelboard (*RP6)	1	EA	\$ 3.00	\$7,803	\$1.80	\$126	\$9,600.00	\$9,600	\$0.00	\$0	\$17,529.34	\$17,529
18	Total Power Equipment				\$16,862		\$272		\$16,852		\$0		\$33,986
19	Lighting Fixtures												
20	Relocate ex. Light fixture	3	EA	\$ 3.00	\$669	\$1.80	\$11	\$0.00	\$0	\$0.00	\$0	\$226.55	\$680
21	Relocate ex. Sensor	1	EA	\$ 3.00	\$167	\$1.80	\$3	\$0.00	\$0	\$0.00	\$0	\$169.91	\$170
22	3/4" EMT	45	LF	\$ 3.00	\$311	\$1.80	\$5	\$2.40	\$108	\$0.00	\$0	\$9.42	\$424
23	#10 THHN	144	LF	\$ 3.00	\$128	\$1.80	\$2	\$0.37	\$54	\$0.00	\$0	\$1.28	\$184
24	Total Lighting Fixtures				\$1,276		\$21		\$162		\$0		\$1,458
25	Wiring Devices												
26	Relocate Surface Raceway	5	EA	\$ 3.00	\$1,672	\$1.80	\$27	\$360.00	\$1,800	\$0.00	\$0	\$699.83	\$3,499
27	GFI Duplex Receptacles	2	EA	\$ 3.00	\$80	\$1.80	\$1	\$30.00	\$60	\$0.00	\$0	\$70.78	\$142
28	WP Junction Box	2	EA	\$ 3.00	\$56	\$1.80	\$1	\$18.00	\$36	\$0.00	\$0	\$46.32	\$93
29	3/4" RGS	100	LF	\$ 3.00	\$33,443	\$1.80	\$540	\$4.12	\$412	\$0.00	\$0	\$343.94	\$34,394
30	#10 THHN	320	LF	\$ 3.00	\$285	\$1.80	\$5	\$0.37	\$119	\$0.00	\$0	\$1.28	\$409
31	Total Wiring Devices				\$35,536		\$574		\$2,427		\$0		\$38,537
32	Mechanical Equipment Connections												
33	Motor Connections 100A (*DOAS-1)	1	EA	\$ 3.00	\$334	\$1.80	\$5	\$48.00	\$48	\$0.00	\$0	\$387.83	\$388
34	Motor Connections 60A (8*ACCU-2)	2	EA	\$ 3.00	\$661	\$1.80	\$11	\$41.40	\$83	\$0.00	\$0	\$377.04	\$754
35	Motor Connections 30A (*ACCU-3)	2	EA	\$ 3.00	\$535	\$1.80	\$9	\$30.00	\$60	\$0.00	\$0	\$301.86	\$604
36	Motor Connections 20A (*VRF/BS-ACCU)	16	EA	\$ 3.00	\$2,609	\$1.80	\$42	\$12.00	\$192	\$0.00	\$0	\$177.72	\$2,844
37	WP D/S 100A		EA	\$ 3.00	\$0	\$1.80	\$0	\$480.00	\$0	\$0.00	\$0	\$0	\$0
38	WP D/S 60A	2	EA	\$ 3.00	\$775	\$1.80	\$13	\$360.00	\$720	\$0.00	\$0	\$753.97	\$1,508
39	WP D/S 30A	2	EA	\$ 3.00	\$557	\$1.80	\$9	\$300.00	\$600	\$0.00	\$0	\$583.19	\$1,166
40	Motor Starter	4	EA	\$ 3.00	\$446	\$1.80	\$7	\$90.00	\$360	\$0.00	\$0	\$203.28	\$813
41	1 1/4" RGS	100	LF	\$ 3.00	\$1,483	\$1.80	\$24	\$8.52	\$852	\$0.00	\$0	\$23.59	\$2,359
42	1" RGS	320	LF	\$ 3.00	\$4,388	\$1.80	\$71	\$5.93	\$1,897	\$0.00	\$0	\$19.86	\$6,356
43	3/4" RGS	320	LF	\$ 3.00	\$3,567	\$1.80	\$58	\$4.12	\$1,317	\$0.00	\$0	\$15.44	\$4,942
44	3/4" EMT	1,000	LF	\$ 3.00	\$6,912	\$1.80	\$112	\$2.40	\$2,400	\$0.00	\$0	\$9.42	\$9,423
45	# 3 THHN	320	LF	\$ 3.00	\$571	\$1.80	\$9	\$1.25	\$399	\$0.00	\$0	\$3.06	\$979
46	#6 THHN	1,848	LF	\$ 3.00	\$2,536	\$1.80	\$41	\$0.65	\$1,198	\$0.00	\$0	\$2.04	\$3,774
47	#10 THHN	5,224	LF	\$ 3.00	\$4,659	\$1.80	\$75	\$0.37	\$1,943	\$0.00	\$0	\$1.28	\$6,677
48	Startup Motors / Equipment / Testing / Commissioning	15	HRS	\$ 3.00	\$1,616	\$1.80	\$26	\$0.00	\$0	\$0.00	\$0	\$113.28	\$1,643
49	Total Mechanical Equipment Connections				\$31,649		\$511		\$12,069		\$0		\$44,229
50	Fire Alarm System												
51	Smoke Detector	2	EA	\$ 3.00	\$290	\$1.80	\$5	\$180.00	\$360	\$0.00	\$0	\$327.26	\$655
52	3/4" RGS	200	LF	\$ 3.00	\$2,230	\$1.80	\$36	\$4.12	\$823	\$0.00	\$0	\$15.44	\$3,089
53	FA Cable	240	LF	\$ 3.00	\$375	\$1.80	\$6	\$1.14	\$274	\$0.00	\$0	\$2.73	\$654

COST ESTIMATE		Bethel Public Schools Bethel High School HVAC Upgrade Electrical - Alt-1 - Air Conditioning to Math & English Classrooms								Made by:	DR	DATE :	12/4/2023		
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Location: 300 Whittlesey Drive, Bethel, CT 06801															
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL			
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST		
54	Testing/Programming	2	HRS	\$ 111.48	\$223	\$1.80	\$4	\$0.00	\$0	\$0.00	\$0	\$113.28	\$227		
55	Total Fire Alarm System				\$3,117		\$50		\$1,457		\$0		\$4,624		
56	Misc. Conditions														
57	Firestopping/Conduit Penetrations	1	LS	\$ -	\$0	\$1.80	\$0	\$3,000.00	\$3,000	\$0.00	\$0	\$3,000.00	\$3,000		
58	Temporary Power	1	ALLOW	\$ -	\$0	\$1.80	\$0	\$12,000.00	\$12,000	\$0.00	\$0	\$12,000.00	\$12,000		
59	Foreman Hours (10% Total MH)	86	HRS	\$ 111.48	\$9,586	\$1.80	\$155	\$0.00	\$0	\$0.00	\$0	\$113.28	\$9,741		
60	Total Misc. Conditions				\$9,586		\$155		\$15,000		\$0		\$24,741		
TOTAL ELECTRICAL					\$106,721		\$1,723		\$47,966		\$0		\$156,411		

COST ESTIMATE			Bethel Public Schools Bethel High School HVAC Upgrade						Made by:	JS	DATE :	12/4/2023	
Contract No.:			Structural - Alt-3 - Air Conditioning to World Language Classrooms						Check by:	KB			
Location: 300 Whittlesey Drive, Bethel, CT 06801									Rev No.	0	DATE :	NA	
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	Structural												
2	Dunnage												
3	New/Add to Existing Dunnage	1.08	TON	\$ 8,541.55	\$9,255	\$12.00	\$936	\$5,400.00	\$5,851	\$0.00	\$0	\$14,805.55	\$16,042
4	Total Dunnage				\$9,255		\$936		\$5,851		\$0		\$16,042
5	Stairs & Railings												
6	Support steel & toe plates	0.29	TON	\$ 8,541.55	\$2,518	\$12.00	\$255	\$5,400.00	\$1,592	\$0.00	\$0	\$14,805.55	\$4,365
7	Treads & Gratings	65	SF	\$ 14.60	\$949	\$0.00	\$0	\$45.60	\$2,964	\$0.00	\$0	\$60.20	\$3,913
8	1.5" Posts & Rails	80	LF	\$ 47.45	\$3,796	\$0.00	\$0	\$81.60	\$6,528	\$0.00	\$0	\$129.05	\$10,324
9	Total Stairs & Railings				\$7,263		\$255		\$11,084		\$0		\$18,602
10	Misc Metals												
11	Framing for Enlarged/New Duct Openings	6	EA	\$ 949.06	\$5,694	\$6.00	\$288	\$480.00	\$2,880	\$0.00	\$0	\$1,477.06	\$8,862
12	Total Misc Metals				\$5,694		\$288		\$2,880		\$0		\$8,862
TOTAL STRUCTURAL					\$22,212		\$1,479		\$19,815		\$0		\$43,506

COST ESTIMATE		Bethel Public Schools Bethel High School HVAC Upgrade								Made by:	JS	DATE :	12/4/2023
Contract No.:		Architectural - Alt-3 - Air Conditioning to World Language Classrooms								Check by:	KB		
Location: 300 Whittlesey Drive, Bethel, CT 06801										Rev No.	0	DATE :	NA
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	Architectural												
2	Walls & Partitions												
3	Wall Type 1 - 5/8" GWB w/metal studs 16" OC painted	244	SF	\$ 2.37	\$578	\$6.00	\$37	\$2.70	\$659	\$0.00	\$0	\$5.22	\$1,274
4	Wall Type 2 - 8" CMU reinforced and vapor barrier	46	SF	\$ 32.88	\$1,512	\$6.00	\$83	\$11.46	\$527	\$0.00	\$0	\$46.14	\$2,122
5	Wall Type 2 - Exterior face brick	46	SF	\$ 32.88	\$1,512	\$6.00	\$83	\$12.60	\$580	\$0.00	\$0	\$47.28	\$2,175
6	Double sided insulated painted aluminum panel	101	SF	\$ 12.47	\$1,260	\$6.00	\$61	\$36.00	\$3,636	\$0.00	\$0	\$49.07	\$4,956
7	Total Walls & Partitions				\$4,863		\$263		\$5,402		\$0		\$10,527
8	Ceilings												
9	Remove & replace ACT ceiling for ductwork access	6,680	SF	\$ 11.38	\$76,016	\$6.00	\$4,810	\$9.00	\$60,120	\$0.00	\$0	\$21.10	\$140,946
10	Roof Curbs & Penetrations	8	EA	\$ 2,916.00	\$23,328	\$6.00	\$1,152	\$360.00	\$2,880	\$0.00	\$0	\$3,420.00	\$27,360
11	Total Ceilings				\$99,344		\$5,962		\$63,000		\$0		\$168,306
12	Painting												
13	Painting Walls 3 coats	290	SF	\$ 3.04	\$881	\$6.00	\$44	\$0.24	\$70	\$0.00	\$0	\$3.43	\$994
14	Total Painting				\$881		\$44		\$70		\$0		\$994
TOTAL ARCHITECTURAL					\$105,088		\$6,268		\$68,471		\$0		\$179,827

COST ESTIMATE			Bethel Public Schools Bethel High School HVAC Upgrade							Made by: JS		DATE : 12/4/2023	
Contract No.:			HVAC - Alt-3 - Air Conditioning to World Language Classrooms							Check by: KB			
Location: 300 Whittlesey Drive, Bethel, CT 06801										Rev No. 0		DATE : NA	
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	HVAC												
2	Equipment												
3	Remove unit ventilators	5	EA	\$ 498.93	\$2,495	\$6.00	\$120	\$0.00	\$0	\$0.00	\$0	\$522.93	\$2,615
4	Remove existing air in/outlets	8	EA	\$ 3.74	\$30	\$6.00	\$1	\$0.00	\$0	\$0.00	\$0	\$3.92	\$31
5	Remove fin tube radiation enclosures		LF	\$ 4.99	\$0	\$6.00	\$0	\$0.00	\$0	\$0.00	\$0	\$0	\$0
6	F & I New Equipment Rooftop DOAS-2	1	EA	\$ 3,991.42	\$3,991	\$30.00	\$960	\$132,000.00	\$132,000	\$0.00	\$0	\$136,951.42	\$136,951
7	F & I New Equipment Rooftop ACCU-4	1	EA	\$ 2,993.57	\$2,994	\$30.00	\$720	\$48,600.00	\$48,600	\$0.00	\$0	\$52,313.57	\$52,314
8	F & I New Equipment Indoor ACCU-4	1	EA	\$ 1,995.71	\$1,996	\$30.00	\$480	\$10,560.00	\$10,560	\$0.00	\$0	\$13,035.71	\$13,036
9	F & I New Equipment VRF Units	6	EA	\$ 249.46	\$1,497	\$30.00	\$360	\$4,632.00	\$27,792	\$0.00	\$0	\$4,941.46	\$29,649
10	F & I New Equipment fin tube radiation	57	LF	\$ 24.95	\$1,422	\$6.00	\$68	\$21.60	\$1,231	\$0.00	\$0	\$47.75	\$2,722
11	BMS Controls I/O Points	83	EA	\$ 873.12	\$72,469	\$6.00	\$3,486	\$390.00	\$32,370	\$0.00	\$0	\$1,305.12	\$108,325
12	Foreman Supervision (10% of Labor hours)	1	LS	\$ 9,112.53	\$9,113	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$9,112.53	\$9,113
13	Total Equipment				\$96,006		\$6,196		\$252,553		\$0		\$354,755
14	Ductwork												
15	Cut & Cap Duct	14	EA	\$ 249.46	\$3,492	\$6.00	\$168	\$60.00	\$840	\$0.00	\$0	\$321.46	\$4,500
16	Remove existing ductwork	1,400	LBS	\$ 3.74	\$5,239	\$6.00	\$252	\$0.00	\$0	\$0.00	\$0	\$3.92	\$5,491
17	Galvanized ductwork std SMACNA gauge	6,500	LBS	\$ 8.73	\$56,753	\$6.00	\$2,730	\$3.90	\$25,350	\$0.00	\$0	\$13.05	\$84,833
18	Acoustic lining	400	SF	\$ 3.74	\$1,497	\$6.00	\$72	\$4.20	\$1,680	\$0.00	\$0	\$8.12	\$3,249
19	Ductwrap insulation	2,800	SF	\$ 3.49	\$9,779	\$6.00	\$504	\$1.02	\$2,856	\$0.00	\$0	\$4.69	\$13,139
20	Rigid board insulation w/weatherproof finish	1,650	SF	\$ 13.97	\$23,051	\$6.00	\$1,188	\$6.30	\$10,395	\$0.00	\$0	\$20.99	\$34,634
21	Air in/outlets	17	EA	\$ 155.91	\$2,651	\$6.00	\$128	\$216.00	\$3,672	\$0.00	\$0	\$379.41	\$6,450
22	Volume dampers	68	SF	\$ 31.18	\$2,120	\$6.00	\$102	\$42.00	\$2,856	\$0.00	\$0	\$74.68	\$5,078
23	Smoke dampers	8	SF	\$ 99.79	\$798	\$6.00	\$38	\$150.00	\$1,200	\$0.00	\$0	\$254.59	\$2,037
24	Fire dampers	16	SF	\$ 43.66	\$698	\$6.00	\$34	\$78.00	\$1,248	\$0.00	\$0	\$123.76	\$1,980
25	Access doors	6	EA	\$ 37.42	\$225	\$6.00	\$11	\$72.00	\$432	\$0.00	\$0	\$111.22	\$667
26	Expansion Joints	4	EA	\$ 997.86	\$3,991	\$6.00	\$192	\$420.00	\$1,680	\$0.00	\$0	\$1,465.86	\$5,863
27	Connections to equipment	2	EA	\$ 997.86	\$1,996	\$6.00	\$96	\$240.00	\$480	\$0.00	\$0	\$1,285.86	\$2,572
28	Testing & Balancing	1	LS	\$ 6,984.99	\$6,985	\$6.00	\$336	\$0.00	\$0	\$0.00	\$0	\$7,320.99	\$7,321
29	Foreman Supervision (10% of Labor hours)	1	LS	\$ 12,754.33	\$12,754	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$12,754.33	\$12,754
30	Total Ductwork				\$132,031		\$5,850		\$52,689		\$0		\$190,570
31	Piping & Fittings												
32	1.5"-2" Hot Water piping	60	LF	\$ 55.61	\$3,337	\$6.00	\$162	\$16.80	\$1,008	\$0.00	\$0	\$75.11	\$4,507
33	New Refrigerant piping w/insulation	1,050	LF	\$ 49.43	\$51,903	\$6.00	\$2,520	\$12.00	\$12,600	\$0.00	\$0	\$63.83	\$67,023
34	Condensate drain piping	300	LF	\$ 49.43	\$14,829	\$6.00	\$720	\$12.00	\$3,600	\$0.00	\$0	\$63.83	\$19,149
35	Tie-ins to existing pipe	2	EA	\$ 247.16	\$494	\$6.00	\$24	\$36.00	\$72	\$0.00	\$0	\$295.16	\$590
36	Connections to equipment	9	EA	\$ 370.73	\$3,337	\$6.00	\$162	\$90.00	\$810	\$0.00	\$0	\$478.73	\$4,309
37	30% Glycol Solution for HW System		LS	\$ 988.62	\$0	\$6.00	\$0	\$1,200.00	\$0	\$0.00	\$0	\$0	\$0
38	Testing & Balancing & Commissioning	1	LS	\$ 5,931.73	\$5,932	\$6.00	\$288	\$0.00	\$0	\$0.00	\$0	\$6,219.73	\$6,220
39	Foreman Supervision (10% of Labor hours)	1	LS	\$ 8,375.56	\$8,376	\$0.00	\$0	\$0.00	\$0	\$0.00	\$0	\$8,375.56	\$8,376
40	Total Piping & Fittings				\$88,207		\$3,876		\$18,090		\$0		\$110,173
TOTAL HVAC					\$316,243		\$15,922		\$323,332		\$0		\$655,497

COST ESTIMATE		Bethel Public Schools Bethel High School HVAC Upgrade								Made by:	DR	DATE :	12/4/2023
Contract No.:										Check by:	KB		
Location: 300 Whittlesey Drive, Bethel, CT 06801		Electrical - Alt-3 - Air Conditioning to World Language Classrooms								Rev No.	0	DATE :	NA
ITEM No.	DESCRIPTION	NET QTY		LABOR		EQUIPMENT		MATERIAL		OTHER		TOTAL	
		No. UNITS	UNIT MEAS.	UNIT LABOR	TOTAL LABOR	UNIT EQ/HR	TOTAL EQPMT	UNIT MATL	TOTAL MATL	UNIT OTHER	TOTAL OTHER	UNIT COST	TOTAL COST
1	Electrical												
2	Demolition												
3	Disconnect/Remove ex. Mechanical Equipment feeders	3	EA	\$ 3.00	\$334	\$1.80	\$5	\$0.00	\$0	\$0.00	\$0	\$113.28	\$340
5	Total Demolition				\$334		\$5		\$0		\$0		\$340
6	Wiring Devices												
7	GFI Duplex Receptacles	2	EA	\$ 3.00	\$80	\$1.80	\$1	\$30.00	\$60	\$0.00	\$0	\$70.78	\$142
8	WP Junction Box	2	EA	\$ 3.00	\$56	\$1.80	\$1	\$18.00	\$36	\$0.00	\$0	\$46.32	\$93
9	3/4" RGS	100	LF	\$ 3.00	\$1,115	\$1.80	\$18	\$4.12	\$412	\$0.00	\$0	\$15.44	\$1,544
10	#10 THHN	320	LF	\$ 3.00	\$285	\$1.80	\$5	\$0.37	\$119	\$0.00	\$0	\$1.28	\$409
11	Total Wiring Devices				\$1,536		\$25		\$627		\$0		\$2,188
12	Mechanical Equipment Connections												
13	Motor Connections 60A (*ACCU-4)(DOAS-2)	3	EA	\$ 3.00	\$991	\$1.80	\$16	\$41.40	\$124	\$0.00	\$0	\$377.04	\$1,131
14	Motor Connections 20A (*VRF/BS-ACCU)	7	EA	\$ 3.00	\$1,142	\$1.80	\$18	\$12.00	\$84	\$0.00	\$0	\$177.72	\$1,244
15	Motor Starter	1	EA	\$ 3.00	\$111	\$1.80	\$2	\$90.00	\$90	\$0.00	\$0	\$203.28	\$203
16	WP D/S 60A	3	EA	\$ 3.00	\$1,163	\$1.80	\$19	\$360.00	\$1,080	\$0.00	\$0	\$753.97	\$2,262
17	1" RGS	300	LF	\$ 3.00	\$4,113	\$1.80	\$66	\$5.93	\$1,778	\$0.00	\$0	\$19.86	\$5,958
18	3/4" EMT	350	LF	\$ 3.00	\$2,419	\$1.80	\$39	\$2.40	\$840	\$0.00	\$0	\$9.42	\$3,298
19	#6 THHN	960	LF	\$ 3.00	\$1,284	\$1.80	\$21	\$0.65	\$622	\$0.00	\$0	\$2.01	\$1,927
20	#10 THHN	1,120	LF	\$ 3.00	\$999	\$1.80	\$16	\$0.37	\$417	\$0.00	\$0	\$1.28	\$1,432
21	Startup Motors / Equipment / Testing / Commissioning	7	HRS	\$ 3.00	\$780	\$1.80	\$13	\$0.00	\$0	\$0.00	\$0	\$113.28	\$793
22	Total Mechanical Equipment Connections				\$13,003		\$210		\$5,035		\$0		\$18,248
23	Fire Alarm System												
24	Smoke Detector	2	EA	\$ 3.00	\$290	\$1.80	\$5	\$180.00	\$360	\$0.00	\$0	\$327.26	\$655
25	FA Junction Box	2	EA	\$ 3.00	\$56	\$1.80	\$1	\$18.00	\$36	\$0.00	\$0	\$46.32	\$93
26	3/4" RGS	100	LF	\$ 3.00	\$1,115	\$1.80	\$18	\$4.12	\$412	\$0.00	\$0	\$15.44	\$1,544
27	FA Cable	120	LF	\$ 3.00	\$187	\$1.80	\$3	\$1.14	\$137	\$0.00	\$0	\$2.73	\$327
28	Testing/Programming	2	HRS	\$ 111.48	\$223	\$1.80	\$4	\$0.00	\$0	\$0.00	\$0	\$113.28	\$227
29	Total Fire Alarm System				\$1,871		\$30		\$944		\$0		\$2,845
30	Misc. Conditions												
31	Firestopping/Conduit Penetrations	1	LS	\$ -	\$0	\$1.80	\$0	\$1,800.00	\$1,800	\$0.00	\$0	\$1,800.00	\$1,800
32	Temporary Power	1	ALLOW	\$ 709.46	\$709	\$1.80	\$7	\$600.00	\$600	\$0.00	\$0	\$1,316.66	\$1,317
33	Foreman Hours (10% Total MH)	15	HRS	\$ 177.37	\$2,664	\$1.80	\$27	\$0.00	\$0	\$0.00	\$0	\$179.17	\$2,691
34	Total Misc. Conditions				\$3,374		\$34		\$2,400		\$0		\$5,808
TOTAL ELECTRICAL					\$20,118		\$305		\$9,006		\$0		\$29,429

Escalation Analysis

Bethel High School HVAC Upgrade

Year as the Basis of Estimated Dollars		11/1/2023
Construction Start Date (NTP)		6/1/2024
Contract Duration	8 months	240
Completion of Construction		1/27/2025
Midpoint of Construction @	50%	9/29/2024
Year(s) from Basis of Estimate to Midpoint of Construction		0.9
Escalation Rate/Year		4.5%
Total Escalation for this Contract		4.2% <<==