STUDENT ACTIVITY CENTER

Asheville, North Carolina

HVAC Estimate

WBS	Major	Minor	ITEM DESCRIPTIONS	QNTY	UNIT MSR	UNIT $ MATERIAL	PRODUCTIVITY	UNIT/ TIME	CREW .	ADJ. $ HOURLY	UNIT $ LABOR	UNIT $ EQUIP	UNIT $ SUB-CON	UNIT $ OTHER	TOTAL MATERIAL	TOTAL.. MANHOURS	TOTAL LABOR	TOTAL EQUIPMENT	TOTAL SUB-CON	TOTAL OTHER	TOTAL COST*	UNIT PRICE	TOTAL AMOUNT
											-				-			-	-	-	-	-	-
											-				-		-	-	-	-	-	-	-
A			**GENERAL REQUIREMENTS**	**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
											-				-		-	-	-	-	-	-	-
			GENERAL REQUIREMENTS								-				-		-	-	-	-	-	-	-
			estimating/management services	1.00	ls						-		2,650.00		-		-	-	2,650.00	-	2,650.00	3,126.87	3,126.87
			subcontractor mobilization	1.00	ls						-		15,000.00		-		-	-	15,000.00	-	15,000.00	17,699.28	17,699.28
			shop drawings and submittals	1.00	ls						-			1,500.00	-		-	-	-	1,605.00	1,605.00	1,893.82	1,893.82
											-				-		-	-	-	-	-	-	-
			EQUIPMENT RENTAL								-				-		-	-	-	-	-	-	-
			small tools @ $2.00 p/mh (auto-calc. do not adjust)	16,757.00	ls						-	2.00			-		-	35,859.98	-	-	35,859.98	2.53	42,395.21
			crane rental	16.00	hr						-		1,275.00		-		-	-	20,400.00	-	20,400.00	1,504.44	24,071.04
											-				-		-	-	-	-	-	-	-
			DIRECT JOB EXPENSE								-				-		-	-	-	-	-	-	-
			job expense @ $2.50 p/man-hour (auto-calc. do not adjust)	17,073.25	mh						-	2.50			-		-	45,670.94	-	-	45,670.94	3.16	53,951.47
											-				-		-	-	-	-	-	-	-
B			**HVAC ESTIMATE**	**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
			PACKAGE ROOF-TOP UNITS								-				-		-	-	-	-	-	-	-
			rtu-1a 2400 cfm @ 1.79 hp	1.00	ea	6,000.00	22.000	MH/U			385.00				6,420.00	22.000	411.95	-	-	-	6,831.95	8,061.37	8,061.37
			rtu-2a 2400 cfm @ 1.79 hp	1.00	ea	6,000.00	22.000	MH/U			385.00				6,420.00	22.000	411.95	-	-	-	6,831.95	8,061.37	8,061.37
			rtu-3a 2200 cfm @ 2.03 hp	1.00	ea	5,500.00	22.000	MH/U			385.00				5,885.00	22.000	411.95	-	-	-	6,296.95	7,430.10	7,430.10
			rtu-4a 2550 cfm @ 2.70 hp	1.00	ea	6,375.00	22.000	MH/U			385.00				6,821.25	22.000	411.95	-	-	-	7,233.20	8,534.83	8,534.83
			rtu-1b 2040 cfm @ 1.70 hp	1.00	ea	5,100.00	22.000	MH/U			385.00				5,457.00	22.000	411.95	-	-	-	5,868.95	6,925.08	6,925.08
			rtu-2b 8810 cfm @ 7.30 hp	1.00	ea	22,000.00	28.000	MH/U			490.00				23,540.00	28.000	524.30	-	-	-	24,064.30	28,394.72	28,394.72
			rtu-3b 2700 cfm @ 1.35 hp	1.00	ea	6,750.00	22.000	MH/U			385.00				7,222.50	22.000	411.95	-	-	-	7,634.45	9,008.28	9,008.28
			rtu-1c 2400 cfm @ 1.79 hp	1.00	ea	6,000.00	22.000	MH/U			385.00				6,420.00	22.000	411.95	-	-	-	6,831.95	8,061.37	8,061.37
			rtu-2c 2400 cfm @ 1.79 hp	1.00	ea	6,000.00	22.000	MH/U			385.00				6,420.00	22.000	411.95	-	-	-	6,831.95	8,061.37	8,061.37
			rtu-3c 2200 cfm @ 2.03 hp	1.00	ea	5,500.00	22.000	MH/U			385.00				5,885.00	22.000	411.95	-	-	-	6,296.95	7,430.10	7,430.10
			rtu-4c 2550 cfm @ 2.70 hp	1.00	ea	6,375.00	22.000	MH/U			385.00				6,821.25	22.000	411.95	-	-	-	7,233.20	8,534.83	8,534.83
			mau-1b 1400 cfm @ .49 hp	1.00	ea	2,800.00	22.000	MH/U			385.00				2,996.00	22.000	411.95	-	-	-	3,407.95	4,021.22	4,021.22
			NOTE: PGK.RTU								-				-		-	-	-	-	-	-	-
			rtu w/14" curbs, elec.conv.outlet, smoke detectors, 5 year warranty								-				-		-	-	-	-	-	-	-
			economizer w/cntrls, disconnect switch and filters								-				-		-	-	-	-	-	-	-
			3-filter sets	12.00	ea	2,000.00	25.000				437.50				25,680.00	300.000	5,617.50	-	-	-	31,297.50	3,077.46	36,929.52
			filter gauges	12.00	ea	300.00	2.057				36.00				3,852.00	24.684	462.24	-	-	-	4,314.24	424.22	5,090.64
			red oil for gauges	1.00	qt	26.00					-				27.82		-	-	-	-	27.82	32.83	32.83
			CENTRIFUGAL ROOF EXHAUST FANS SMOKE								-				-		-	-	-	-	-	-	-
			sef-1a 2635 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-2a 2635 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-3a 2415 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-4a 2785 cfm @ 3/4 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-1c 2635 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-1a 2635 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-2c 2635 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-3c 2415 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-4c 2785 cfm @ 3/4 hp	1.00	ea	500.00	10.000				175.00				535.00	10.000	187.25	-	-	-	722.25	852.22	852.22
			sef-1b 2310 cfm @ 1.0 hp	1.00	ea	800.00	10.000				175.00				856.00	10.000	187.25	-	-	-	1,043.25	1,230.98	1,230.98
			sef-2b 9570 cfm @ 3.0 hp	1.00	ea	2,500.00	15.000				262.50				2,675.00	15.000	280.88	-	-	-	2,955.88	3,487.80	3,487.80
			sef-3b 2090 cfm @ 3/4 hp	1.00	ea	450.00	10.000				175.00				481.50	10.000	187.25	-	-	-	668.75	789.09	789.09
			CENTRIFUGAL ROOF EXHAUST FANS								-				-		-	-	-	-	-	-	-
			ef-1a 600 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-2a 225 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-1b 590 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-3b 650 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-4b 560 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-5b 355 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-6b 225 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			ef-7a 1029 cfm @ .16 hp	1.00	ea	450.00	10.000				175.00				481.50	10.000	187.25	-	-	-	668.75	789.09	789.09
			ef-8b 500 cfm @ .16 hp	1.00	ea	400.00	10.000				175.00				428.00	10.000	187.25	-	-	-	615.25	725.97	725.97
			ef-1c 600 cfm @ .16 hp	1.00	ea	400.00	10.000				175.00				428.00	10.000	187.25	-	-	-	615.25	725.97	725.97
			ef-2c 225 cfm @ .16 hp	1.00	ea	375.00	10.000				175.00				401.25	10.000	187.25	-	-	-	588.50	694.40	694.40
			SUPPLY FAN NOTE:								-				-		-	-	-	-	-	-	-
			fans w/curbs, disconnect switch, bird screen								-				-		-	-	-	-	-	-	-
			fans w/backdraft dampers								-				-		-	-	-	-	-	-	-
			SUPPLY FAN								-				-		-	-	-	-	-	-	-
			sf-1b 560 cfm @ 1.6 hp	1.00	ea	400.00	10.000				175.00				428.00	10.000	187.25	-	-	-	615.25	725.97	725.97
			motor starters	14.00	ea	345.00	4.000				70.00				5,168.10	56.000	1,048.60	-	-	-	6,216.70	523.96	7,335.44
											-				-		-	-	-	-	-	-	-
			INTAKE & RELIEF HOODS								-				-		-	-	-	-	-	-	-

STUDENT ACTIVITY CENTER

Asheville, North Carolina

HVAC Estimate

WBS	Major	Minor	ITEM DESCRIPTIONS	QNTY	UNIT MSR	UNIT $ MATERIAL	PRODUCTIVITY	UNIT/ TIME	CREW .	ADJ. $ HOURLY	UNIT $ LABOR	UNIT $ EQUIP	UNIT $ SUB-CON	UNIT $ OTHER	TOTAL MATERIAL	TOTAL.. MANHOURS	TOTAL LABOR	TOTAL EQUIPMENT	TOTAL SUB-CON	TOTAL OTHER	TOTAL COST*	UNIT PRICE	TOTAL AMOUNT
			1h-1b intake @ 14x14	1.00	ea	455.00	4.500				78.75				486.85	4.500	84.26	-	-	-	571.11	673.88	673.88
			1h-3b intake @ 14x14	1.00	ea	455.00	4.500				78.75				486.85	4.500	84.26	-	-	-	571.11	673.88	673.88
			rh-1b relief vent 14x14	1.00	ea	455.00	4.500				78.75				486.85	4.500	84.26	-	-	-	571.11	673.88	673.88
			NOTE: INTAKE UNITS								-				-		-	-	-	-	-	-	-
			units provided w/ w/curbs, bird screen, motorized dampers								-				-		-	-	-	-	-	-	-
											-				-		-	-	-	-	-	-	-
			TERMINAL BOX UNITS								-				-		-	-	-	-	-	-	-
			tb2b-1 865 cfm @ 1/2 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-2 380 cfm @ 1/6 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-3 200 cfm @ 1/6 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-4 165 cfm @ 1/13 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-5 230 cfm @ 1/13 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-6 175 cfm @ 1/13 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-7 305 cfm @ 1/13 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-8 840 cfm @ 1/2 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-9 1010 cfm @ 1/2 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-10 850 cfm @ 1/2 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-11 1320 cfm @ 3/4 hp	1.00	ea	1,000.00	9.000				157.50				1,070.00	9.000	168.52	-	-	-	1,238.52	1,461.39	1,461.39
			tb2b-12 150 cfm @ 1/13 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-13 940 cfm @ 1/2 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			tb2b-14 1575 cfm @ 21/2 hp	1.00	ea	800.00	9.000				157.50				856.00	9.000	168.52	-	-	-	1,024.52	1,208.88	1,208.88
			NOTE: TERMINAL BOX UNIT								-				-		-	-	-	-	-	-	-
			units provided w/vol. damper, 1" thk af., attenuator, hw heat coil								-				-		-	-	-	-	-	-	-
			factory disconnect, cntrl transformer, airflow switch, room sensor								-				-		-	-	-	-	-	-	-
			and remote reset								-				-		-	-	-	-	-	-	-
			AIR DISTRIBUTION								-				-		-	-	-	-	-	-	-
			"a" perforated supply 24x24	16.00	lf	68.00	1.250				21.88				1,164.16	20.000	374.59	-	-	-	1,538.75	113.48	1,815.68
			"b" perforated supply 24x24	18.00	lf	72.00	1.250				21.88				1,386.72	22.500	421.41	-	-	-	1,808.13	118.53	2,133.54
			"c" perforated supply 24x24	10.00	lf	78.00	1.250				21.88				834.60	12.500	234.12	-	-	-	1,068.72	126.10	1,261.00
			"d" perforated supply 24x24	29.00	lf	85.00	1.250				21.88				2,637.55	36.250	678.94	-	-	-	3,316.49	134.94	3,913.26
			"e" perforated return/exhaust 24x24	67.00	lf	75.00	1.250				21.88				5,376.75	83.750	1,568.58	-	-	-	6,945.33	122.32	8,195.44
			"f" security supply 12x12	14.00	lf	175.00	2.000				35.00				2,621.50	28.000	524.30	-	-	-	3,145.80	265.14	3,711.96
			"g" security supply 27x27	20.00	lf	225.00	2.500				43.75				4,815.00	50.000	936.25	-	-	-	5,751.25	339.31	6,786.20
			"h" return w/exhaust 12x12	20.00	lf	22.00	1.250				21.88				470.80	25.000	468.23	-	-	-	939.03	55.40	1,108.00
			"i" not in schedule		nic						-				-		-	-	-	-	-	-	-
			"j" security return/exhaust 12x12	10.00	lf	200.00	2.000				35.00				2,140.00	20.000	374.50	-	-	-	2,514.50	296.70	2,967.00
			"k" perforated supply 12x12	1.00	lf	85.00	1.250				21.88				90.95	1.250	23.41	-	-	-	114.36	134.94	134.94
			"l" sidewall supply 14x08	7.00	lf	25.00	1.250				21.88				187.25	8.750	163.88	-	-	-	351.13	59.19	414.33
			"m" sidewall supply 14x08	7.00	lf	25.00	1.250				21.88				187.25	8.750	163.88	-	-	-	351.13	59.19	414.33
			"n" sidewall supply 30x14	3.00	lf	85.00	1.250				21.88				272.85	3.750	70.23	-	-	-	343.08	134.94	404.82
			"o" not in schedule		nic						-				-		-	-	-	-	-	-	-
			"p" sidewall supply 50x20	1.00	lf	155.00	2.250				39.38				165.85	2.250	42.14	-	-	-	207.99	245.42	245.42
			"q" not in schedule		nic						-				-		-	-	-	-	-	-	-
			"r" security sidewall supply 14x08	32.00	lf	175.00	1.250				21.88				5,992.00	40.000	749.17	-	-	-	6,741.17	248.57	7,954.24
			"s" security sidewall return 14x08	32.00	lf	175.00	1.250				21.88				5,992.00	40.000	749.17	-	-	-	6,741.17	248.57	7,954.24
			"t" perforated return/exhaust 12x12	8.00	lf	85.00	1.250				21.88				727.60	10.000	187.29	-	-	-	914.89	134.94	1,079.52
			DUCTWORK								-				-		-	-	-	-	-	-	-
			galv. supply ductwork	8,140.00	lb	0.90	0.170				2.98				7,838.82	1383.800	25,955.20	-	-	-	33,794.02	4.90	39,886.00
			galv. return ductwork	4,940.00	lb	0.90	0.170				2.98				4,757.22	839.800	15,751.68	-	-	-	20,508.90	4.90	24,206.00
			galv. exhaust ductwork	2,500.00	lb	0.65	0.150				2.63				1,738.75	375.000	7,035.25	-	-	-	8,774.00	4.14	10,350.00
			duct line @ 1" thk	4,340.00	sf	1.25	0.175				3.06				5,804.75	759.500	14,210.03	-	-	-	20,014.78	5.44	23,609.60
			DUCTWORK INSULATION								-				-		-	-	-	-	-	-	-
			supply duct insulation	8,800.00	sqft'	1.40					-				13,182.40		-	-	-	-	13,182.40	1.77	15,576.00
			round supply duct insulation	5,640.00	sqft'	0.85					-				5,129.58		-	-	-	-	5,129.58	1.07	6,034.80
			ROUND DUCTWORK								-				-			-	-	-	-	-	-
			12" round ductwork	240.00	lf	4.00	0.286				5.01				1,027.20	68.640	1,286.57	-	-	-	2,313.77	11.38	2,731.20
			10" round ductwork	260.00	lf	3.45	0.229				4.01				959.79	59.540	1,115.58	-	-	-	2,075.37	9.42	2,449.20
			08" round ductwork	310.00	lf	2.85	0.229				4.01				945.35	70.990	1,330.12	-	-	-	2,275.47	8.66	2,684.60
			06" round ductwork	480.00	lf	2.00	0.171				2.99				1,027.20	82.080	1,535.66	-	-	-	2,562.86	6.30	3,024.00
			SPIRAL DUCTWORK								-				-		-	-	-	-	-	-	-
			14" spiral ductwork	10.00	lf	6.00	0.400				7.00				64.20	4.000	74.90	-	-	-	139.10	16.41	164.10
			12" spiral ductwork	20.00	lf	5.00	0.280				4.90				107.00	5.600	104.86	-	-	-	211.86	12.50	250.00
			10" spiral ductwork	90.00	lf	4.10	0.230				4.03				394.83	20.700	388.09	-	-	-	782.92	10.26	923.40
			08" spiral ductwork	60.00	lf	3.25	0.180				3.15				208.65	10.800	202.23	-	-	-	410.88	8.08	484.80
			06" spiral ductwork	40.00	lf	2.75	0.180				3.15				117.70	7.200	134.82	-	-	-	252.52	7.45	298.00
			ROUND DUCT FITTINGS								-				-		-	-	-	-	-	-	-
			12" round duct ftgs	45.00	ea	18.50	0.857				15.00				890.78	38.565	722.25	-	-	-	1,613.03	42.30	1,903.50
			10" round duct ftgs	409.00	ea	16.00	0.857				15.00				7,002.08	350.513	6,564.45	-	-	-	13,566.53	39.14	16,008.26

STUDENT ACTIVITY CENTER

Asheville, North Carolina

HVAC Estimate

WBS	Major	Minor	ITEM DESCRIPTIONS	QNTY	UNIT MSR	UNIT $ MATERIAL	PRODUCTIVITY	UNIT/ TIME	CREW .	ADJ. $ HOURLY	UNIT $ LABOR	UNIT $ EQUIP	UNIT $ SUB-CON	UNIT $ OTHER	TOTAL MATERIAL	TOTAL.. MANHOURS	TOTAL LABOR	TOTAL EQUIPMENT	TOTAL SUB-CON	TOTAL OTHER	TOTAL COST*	UNIT PRICE	TOTAL AMOUNT
			08" round duct ftgs	40.00	ea	9.00	0.857				15.00				385.20	34.280	642.00	-	-	-	1,027.20	30.30	1,212.00
			06" round duct ftgs	56.00	ea	7.00	0.686				12.01				419.44	38.416	719.64	-	-	-	1,139.08	24.00	1,344.00
			SPIRAL DUCT FITTINGS								-				-		-	-	-	-	-	-	-
			10" spiral duct ftgs	4.00	ea	22.50	0.943				16.50				96.30	3.772	70.62	-	-	-	166.92	49.24	196.96
			08" spiral duct ftgs	1.00	ea	12.00	0.857				15.00				12.84	0.857	16.05	-	-	-	28.89	34.09	34.09
			06" spiral duct ftgs	2.00	ea	9.50	0.857				15.00				20.33	1.714	32.10	-	-	-	52.43	30.93	61.86
			SPIRAL DUCT TAP-IN FITTINGS								-				-		-	-	-	-	-	-	-
			14" spiral duct tap-in ftgs	1.00	ea	76.00	6.400				112.00				81.32	6.400	119.84	-	-	-	201.16	237.36	237.36
			12" spiral duct tap-in ftgs	1.00	ea	58.00	4.300				75.25				62.06	4.300	80.52	-	-	-	142.58	168.24	168.24
			10" spiral duct tap-in ftgs	5.00	ea	28.00	2.300				40.25				149.80	11.500	215.34	-	-	-	365.14	86.17	430.85
			08" spiral duct tap-in ftgs	1.00	ea	16.00	1.150				20.13				17.12	1.150	21.54	-	-	-	38.66	45.62	45.62
			06" spiral duct tap-in ftgs	3.00	ea	14.00	1.150				20.13				44.94	3.450	64.62	-	-	-	109.56	43.09	129.27
			BALANCING DAMPERS								-				-		-	-	-	-	-	-	-
			20x12 balancing damper	4.00	ea	86.00	1.400				24.50				368.08	5.600	104.86	-	-	-	472.94	139.51	558.04
			48x14 balancing damper	1.00	ea	455.00	4.200				73.50				486.85	4.200	78.64	-	-	-	565.49	667.25	667.25
			14x14 balancing damper	2.00	ea	65.00	1.200				21.00				139.10	2.400	44.94	-	-	-	184.04	108.58	217.16
			14x12 balancing damper	2.00	ea	65.00	1.200				21.00				139.10	2.400	44.94	-	-	-	184.04	108.58	217.16
			12x12 balancing damper	3.00	ea	65.00	1.200				21.00				208.65	3.600	67.41	-	-	-	276.06	108.58	325.74
			12x06 balancing damper	4.00	ea	65.00	1.200				21.00				278.20	4.800	89.88	-	-	-	368.08	108.58	434.32
			08x12 balancing damper	1.00	ea	65.00	1.200				21.00				69.55	1.200	22.47	-	-	-	92.02	108.58	108.58
			08x08 balancing damper	4.00	ea	48.00	1.200				21.00				205.44	4.800	89.88	-	-	-	295.32	87.12	348.48
			06x08 balancing damper	19.00	ea	48.00	1.200				21.00				975.84	22.800	426.93	-	-	-	1,402.77	87.12	1,655.28
			06x12 balancing damper	32.00	ea	48.00	1.200				21.00				1,643.52	38.400	719.04	-	-	-	2,362.56	87.12	2,787.84
			06x06 balancing damper	33.00	ea	48.00	1.200				21.00				1,694.88	39.600	741.51	-	-	-	2,436.39	87.12	2,874.96
			ROUND BALANCING DAMPER								-				-		-	-	-	-	-	-	-
			12 round balancing damper	20.00	ea	33.00	1.600				28.00				706.20	32.000	599.20	-	-	-	1,305.40	77.02	1,540.40
			10 round balancing damper	34.00	ea	23.00	1.600				28.00				836.74	54.400	1,018.64	-	-	-	1,855.38	64.39	2,189.26
			08 round balancing damper	20.00	ea	20.00	1.000				17.50				428.00	20.000	374.50	-	-	-	802.50	47.35	947.00
			06 round balancing damper	24.00	ea	16.00	1.000				17.50				410.88	24.000	449.40	-	-	-	860.28	42.30	1,015.20
			10 round fire damper	1.00	ea	90.00	2.200				38.50				96.30	2.200	41.20	-	-	-	137.50	162.24	162.24
			MOTOR OP. SMOKE DAMPER								-				-		-	-	-	-	-	-	-
			equip. furn.by cntrl sub								-				-		-	-	-	-	-	-	-
			22x16 sq. x round (avg.size)	26.00	ea	30.00	1.400				24.50				834.60	36.400	681.59	-	-	-	1,516.19	68.81	1,789.06
			18x12 sq. x round (avg.size)	66.00	ea	30.00	1.200				21.00				2,118.60	79.200	1,483.02	-	-	-	3,601.62	64.39	4,249.74
			12x10 sq. x round (avg.size)	30.00	ea	15.00	1.200				21.00				481.50	36.000	674.10	-	-	-	1,155.60	45.45	1,363.50
			10x06 sq. x round (avg.size)	160.00	ea	15.00	1.200				21.00				2,568.00	192.000	3,595.20	-	-	-	6,163.20	45.45	7,272.00
			FLEX DUCT CONNECTION								-				-		-	-	-	-	-	-	-
			60x30 flex duct connection	1.00	ea	158.00	2.850				49.88				169.06	2.850	53.37	-	-	-	222.43	262.46	262.46
			56x18 flex duct connection	1.00	ea	158.00	2.850				49.88				169.06	2.850	53.37	-	-	-	222.43	262.46	262.46
			40x14 flex duct connection	1.00	ea	110.00	2.850				49.88				117.70	2.850	53.37	-	-	-	171.07	201.85	201.85
			36x18 flex duct connection	1.00	ea	100.00	2.850				49.88				107.00	2.850	53.37	-	-	-	160.37	189.23	189.23
			36x24 flex duct connection	4.00	ea	96.00	2.250				39.38				410.88	9.000	168.55	-	-	-	579.43	170.92	683.68
			30x18 flex duct connection	5.00	ea	86.00	2.250				39.38				460.10	11.250	210.68	-	-	-	670.78	158.30	791.50
			24x12 flex duct connection	5.00	ea	68.00	2.250				39.38				363.80	11.250	210.68	-	-	-	574.48	135.57	677.85
			18x16 flex duct connection	1.00	ea	65.00	2.250				39.38				69.55	2.250	42.14	-	-	-	111.69	131.79	131.79
			18x12 flex duct connection	5.00	ea	62.50	2.150				37.63				334.38	10.750	201.32	-	-	-	535.70	126.42	632.10
			16x14 flex duct connection	1.00	ea	60.00	2.150				37.63				64.20	2.150	40.26	-	-	-	104.46	123.26	123.26
			16x12 flex duct connection	1.00	ea	58.00	1.850				32.38				62.06	1.850	34.65	-	-	-	96.71	114.11	114.11
			14x14 flex duct connection	3.00	ea	55.00	1.850				32.38				176.55	5.550	103.94	-	-	-	280.49	110.32	330.96
			14x12 flex duct connection	1.00	ea	52.00	1.850				32.38				55.64	1.850	34.65	-	-	-	90.29	106.54	106.54
			10x10 flex duct connection	1.00	ea	50.00	1.450				25.38				53.50	1.450	27.16	-	-	-	80.66	95.17	95.17
			08x10 flex duct connection	1.00	ea	48.00	1.450				25.38				51.36	1.450	27.16	-	-	-	78.52	92.65	92.65
			06x10 flex duct connection	4.00	ea	46.00	1.450				25.38				196.88	5.800	108.63	-	-	-	305.51	90.12	360.48
			ROUND FLEX CONNECTION		ea						-				-		-	-	-	-	-	-	-
			14 round flex connection	1.00	ea	55.00	1.450				25.38				58.85	1.450	27.16	-	-	-	86.01	101.49	101.49
			12 round flex connection	1.00	ea	55.00	1.450				25.38				58.85	1.450	27.16	-	-	-	86.01	101.49	101.49
			10 round flex connection	5.00	ea	45.00	1.350				23.63				240.75	6.750	126.42	-	-	-	367.17	86.65	433.25
			08 round flex connection	2.00	ea	35.00	1.250				21.88				74.90	2.500	46.82	-	-	-	121.72	71.81	143.62
			06 round flex connection	4.00	ea	35.00	1.250				21.88				149.80	5.000	93.65	-	-	-	243.45	71.81	287.24
			DUCT ACCESS DOORS								-				-		-	-	-	-	-	-	-
			duct access doors	42.00	ea	34.00	2.000				35.00				1,527.96	84.000	1,572.90	-	-	-	3,100.86	87.12	3,659.04
			VIBRATION ISOLATORS								-				-		-	-	-	-	-	-	-
			vibration isolators	166.00	ea	25.00	0.600				10.50				4,440.50	99.600	1,865.01	-	-	-	6,305.51	44.82	7,440.12
			DUCT THERMOMETERS								-				-		-	-	-	-	-	-	-
			duct thermometers	12.00	ea	125.00	1.000				17.50				1,605.00	12.000	224.70	-	-	-	1,829.70	179.91	2,158.92
			SECURITY BARS (TOOL RESISTENT)								-				-		-	-	-	-	-	-	-
			1"- 2 ribbed bars	300.00	lf	5.00					-				1,605.00		-	-	-	-	1,605.00	6.31	1,893.00
			21/2" x 3/8" flat bar	160.00	lf	7.50					-				1,284.00		-	-	-	-	1,284.00	9.47	1,515.20

STUDENT ACTIVITY CENTER

Asheville, North Carolina

HVAC Estimate

WBS	Major	Minor	ITEM DESCRIPTIONS	QNTY	UNIT MSR	UNIT $ MATERIAL	PRODUCTIVITY	UNIT/ TIME	CREW .	ADJ. $ HOURLY	UNIT $ LABOR	UNIT $ EQUIP	UNIT $ SUB-CON	UNIT $ OTHER	TOTAL MATERIAL	TOTAL.. MANHOURS	TOTAL LABOR	TOTAL EQUIPMENT	TOTAL SUB-CON	TOTAL OTHER	TOTAL COST*	UNIT PRICE	TOTAL AMOUNT
			56x18	2.00	ea		25.000				437.50				-	50.000	936.25	-	-	-	936.25	552.37	1,104.74
			36x12	2.00	ea		25.000				437.50				-	50.000	936.25	-	-	-	936.25	552.37	1,104.74
			28x18	1.00	ea		18.000				315.00				-	18.000	337.05	-	-	-	337.05	397.70	397.70
			28x20	2.00	ea		18.000				315.00				-	36.000	674.10	-	-	-	674.10	397.70	795.40
			22x18	12.00	ea		18.000				315.00				-	216.000	4,044.60	-	-	-	4,044.60	397.70	4,772.40
			18x18	2.00	ea		18.000				315.00				-	36.000	674.10	-	-	-	674.10	397.70	795.40
			19x19	1.00	ea		18.000				315.00				-	18.000	337.05	-	-	-	337.05	397.70	397.70
			12x12	2.00	ea		16.000				280.00				-	32.000	599.20	-	-	-	599.20	353.51	707.02
			WALL SLEEVES @ 10 GA.								-				-		-	-	-	-	-	-	-
			30x22 wall sleeve	2.00	ea	60.00	2.300				40.25				128.40	4.600	86.14	-	-	-	214.54	126.57	253.14
			30x20 wall sleeve	1.00	ea	60.00	2.300				40.25				64.20	2.300	43.07	-	-	-	107.27	126.57	126.57
			18x18 wall sleeve	2.00	ea	40.00	2.300				40.25				85.60	4.600	86.14	-	-	-	171.74	101.32	202.64
			12x12 wall sleeve	1.00	ea	30.00	2.000				35.00				32.10	2.000	37.45	-	-	-	69.55	82.07	82.07
			2x2x1/2 angle iron braces for slvs & collars	200.00	lf	2.00	4.500				78.75				428.00	900.000	16,852.50	-	-	-	17,280.50	101.95	20,390.00
			DUCT PACKING								-				-		-	-	-	-	-	-	-
			packing at wall penetrations	96.00	ea	25.00	1.500				26.25				2,568.00	144.000	2,696.40	-	-	-	5,264.40	64.71	6,212.16
			MISC. METALS								-				-		-	-	-	-	-	-	-
			expanded metal	128.00	sf	300.00	42.000				735.00				41,088.00	5376.000	100,665.60	-	-	-	141,753.60	1,306.74	167,262.72
			DRYER VENTS								-				-		-	-	-	-	-	-	-
			6' round pipe	125.00	lf	3.95	0.086				1.51				528.31	10.750	201.96	-	-	-	730.27	6.89	861.25
			6" round pipe 90	4.00	ea	10.00	0.600				10.50				42.80	2.400	44.94	-	-	-	87.74	25.88	103.52
			wall cap	1.00	ea	20.00	1.200				21.00				21.40	1.200	22.47	-	-	-	43.87	51.76	51.76
			roof cap	2.00	ea	26.00	1.300				22.75				55.64	2.600	48.68	-	-	-	104.32	61.55	123.10
			DISHWASHER EXHAUST								-				-		-	-	-	-	-	-	-
			9x9 stainless duct	15.00	ea	4.15	0.450				7.88				66.61	6.750	126.47	-	-	-	193.08	15.19	227.85
			duct collar @ hood f.b.o.		*nic*						-				-		-	-	-	-	-	-	-
			connection to roof fan	1.00	ea	75.00	2.850				49.88				80.25	2.850	53.37	-	-	-	133.62	157.67	157.67
			KITCHEN HOOD DUCT								-				-		-	-	-	-	-	-	-
			14x14 stainless duct	14.00	lf	4.15	0.450				7.88				62.17	6.300	118.04	-	-	-	180.21	15.19	212.66
			14x10x18 fittings @ hood	1.00	ea	200.00	4.200				73.50				214.00	4.200	78.64	-	-	-	292.64	345.30	345.30
			duct collar @ hood f.b.o.		*nic*						-				-		-	-	-	-	-	-	-
			TAPES AND SEALANTS								-				-		-	-	-	-	-	-	-
			tape & sealant	1.00	lsum	2,500.00					-				2,675.00		-	-	-	-	2,675.00	3,156.37	3,156.37
			NOTE: HOODS								-				-		-	-	-	-	-	-	-
			hood provided by kitchen subcontractor								-				-		-	-	-	-	-	-	-
			BOILER STACK								-				-		-	-	-	-	-	-	-
			6'x6'x6" housekeeping pad w/wwf	36.00	sf	4.00	0.500				8.75				154.08	18.000	337.05	-	-	-	491.13	16.10	579.60
			6" metal bestos stack	20.00	lf	8.00	0.514				9.00				171.20	10.280	192.60	-	-	-	363.80	21.46	429.20
			6" cleanout asembly	1.00	ea	55.00	1.100				19.25				58.85	1.100	20.60	-	-	-	79.45	93.75	93.75
			6" 45% ell	1.00	ea	20.50	1.000				17.50				21.94	1.000	18.73	-	-	-	40.67	47.99	47.99
			6" expansion joint mtl	1.00	ea	15.00	1.250				21.88				16.05	1.250	23.41	-	-	-	39.46	46.56	46.56
			cone flashing	1.00	ea	345.00	1.250				21.88				369.15	1.250	23.41	-	-	-	392.56	463.20	463.20
			storm collar	1.00	ea	65.00	1.000				17.50				69.55	1.000	18.73	-	-	-	88.28	104.17	104.17
			bands	1.00	ea	42.50	1.000				17.50				45.48	1.000	18.73	-	-	-	64.21	75.76	75.76
			exit cone	1.00	ea	156.00	1.200				21.00				166.92	1.200	22.47	-	-	-	189.39	223.47	223.47
			anchoring point hardware	2.00	ea	75.00	2.057				36.00				160.50	4.114	77.04	-	-	-	237.54	140.14	280.28
			roof curb	1.00	ea	195.00	3.714				65.00				208.65	3.714	69.55	-	-	-	278.20	328.26	328.26
			sealant	1.00	ls	50.00	4.286				75.01				53.50	4.286	80.26	-	-	-	133.76	157.83	157.83
			misc. hardware and fastners	1.00	ls	100.00	2.286				40.01				107.00	2.286	42.81	-	-	-	149.81	176.77	176.77
			barometric damper	1.00	ea	155.00	2.571				44.99				165.85	2.571	48.14	-	-	-	213.99	252.50	252.50
			guy wire for stack	1.00	ls	30.00	2.571				44.99				32.10	2.571	48.14	-	-	-	80.24	94.68	94.68
			temperature indicator	1.00	ea	96.00	3.143				55.00				102.72	3.143	58.85	-	-	-	161.57	190.64	190.64
			STACK COPPER PIPE AND FITTINGS								-				-		-	-	-	-	-	-	-
			type "l" copper pipe	20.00	lf	1.60	0.115				2.01				34.24	2.300	43.01	-	-	-	77.25	4.56	91.20
			1" copper 90	8.00	ea	2.00	0.130				2.28				17.12	1.040	19.52	-	-	-	36.64	5.40	43.20
			1" copper adpt.	1.00	ea	1.70	0.175				3.06				1.82	0.175	3.27	-	-	-	5.09	6.01	6.01
			roll solder	1.00	roll	10.00					-				10.70		-	-	-	-	10.70	12.63	12.63
											-				-			-	-	-	-	-	-
C	**WATER HEATING SYSTEM**			**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
	HOT WATER BOILER										-				-		-	-	-	-	-	-	-
			300 mbh boiler w/control panel (b-1)	1.00	ls	9,800.00	40.000				700.00				10,486.00	40.000	749.00	-	-	-	11,235.00	13,256.76	13,256.76
			6'x6'x6" housekeeping pad w/wwf	36.00	sf	4.00	0.500				8.75				154.08	18.000	337.05	-	-	-	491.13	16.10	579.60
			hot water pumps w/high efficiency motors & disconnect	2.00	ea	700.00	9.000				157.50				1,498.00	18.000	337.05	-	-	-	1,835.05	1,082.64	2,165.28
			pmp# hwp-2 variable frequency drives	1.00	ea	900.00	7.000				122.50				963.00	7.000	131.07	-	-	-	1,094.07	1,290.95	1,290.95
			as-1 air separator w/strainer	1.00	ea	550.00	5.000				87.50				588.50	5.000	93.62	-	-	-	682.12	804.87	804.87
			compression tank 30 gal (asme label)	1.00		600.00	6.500				113.75				642.00	6.500	121.71	-	-	-	763.71	901.14	901.14
			NOTE: COMPRESSION TANK								-				-		-	-	-	-	-	-	-
			provide w/fittings, sight glass, and prv.backflow preventor								-				-		-	-	-	-	-	-	-

STUDENT ACTIVITY CENTER

Asheville, North Carolina

HVAC Estimate

WBS	Major	Minor	ITEM DESCRIPTIONS	QNTY	UNIT MSR	UNIT $ MATERIAL	PRODUCTIVITY	UNIT/ TIME	CREW .	ADJ. $ HOURLY	UNIT $ LABOR	UNIT $ EQUIP	UNIT $ SUB-CON	UNIT $ OTHER	TOTAL MATERIAL	TOTAL.. MANHOURS	TOTAL LABOR	TOTAL EQUIPMENT	TOTAL SUB-CON	TOTAL OTHER	TOTAL COST*	UNIT PRICE	TOTAL AMOUNT
			WATER TREATMENT SYSTEM								-				-		-	-	-	-	-	-	-
			water treatment system complete	1.00	ea	7,200.00	28.000				490.00				7,704.00	28.000	524.30	-	-	-	8,228.30	9,709.00	9,709.00
			NOTE: WATER TREATMENT SYSTEM								-				-		-	-	-	-	-	-	-
			provide w/feeder equip. and cntrls. w/chemicals and service, shot feed								-				-		-	-	-	-	-	-	-
			BOILER STACK								-				-		-	-	-	-	-	-	-
			6'x6'x6" housekeeping pad w/wwf	36.00	sf	4.00	0.500				8.75				154.08	18.000	337.05	-	-	-	491.13	16.10	579.60
			6" metal bestos stack	20.00	lf	14.00	0.550				9.63				299.60	11.000	206.08	-	-	-	505.68	29.83	596.60
			6" cleanout asembly	1.00	ea	65.00	1.500				26.25				69.55	1.500	28.09	-	-	-	97.64	115.21	115.21
			6" 45% ell	1.00	ea	22.00	1.250				21.88				23.54	1.250	23.41	-	-	-	46.95	55.40	55.40
			6" expansion joint mtl	1.00	ea	40.00	15.000				262.50				42.80	15.000	280.88	-	-	-	323.68	381.93	381.93
			cone flashing	1.00	ea	325.00	18.000				315.00				347.75	18.000	337.05	-	-	-	684.80	808.03	808.03
			storm collar	1.00	ea	55.00	3.700				64.75				58.85	3.700	69.28	-	-	-	128.13	151.19	151.19
			bands	1.00	ea	40.00	2.000				35.00				42.80	2.000	37.45	-	-	-	80.25	94.69	94.69
			exit cone	1.00	ea	140.00	8.800				154.00				149.80	8.800	164.78	-	-	-	314.58	371.19	371.19
			anchoring point hardware	2.00	ea	76.00	2.600				45.50				162.64	5.200	97.37	-	-	-	260.01	153.40	306.80
			roof curb	1.00	ea	220.00	4.200				73.50				235.40	4.200	78.64	-	-	-	314.04	370.55	370.55
			sealant	1.00	ls	55.00	2.000				35.00				58.85	2.000	37.45	-	-	-	96.30	113.63	113.63
			misc. hardware and fastners	1.00	ls	100.00	2.860				50.05				107.00	2.860	53.55	-	-	-	160.55	189.44	189.44
			barometric damper	1.00	ea	155.00	3.700				64.75				165.85	3.700	69.28	-	-	-	235.13	277.44	277.44
			guy wire for stack	1.00	ls	25.00	1.500				26.25				26.75	1.500	28.09	-	-	-	54.84	64.71	64.71
			temperature indicator	1.00	ea	45.00	2.100				36.75				48.15	2.100	39.32	-	-	-	87.47	103.21	103.21
			STACK COPPER PIPE AND FITTINGS								-				-		-	-	-	-	-	-	-
			type "l" copper pipe	20.00	lf	1.50	1.750				30.63				32.10	35.000	655.48	-	-	-	687.58	40.57	811.40
			1" copper 90	8.00	ea	2.00	2.250				39.38				17.12	18.000	337.09	-	-	-	354.21	52.24	417.92
			1" copper adpt.	1.00	ea	1.70	3.000				52.50				1.82	3.000	56.18	-	-	-	58.00	68.44	68.44
			roll solder	2.00	roll	10.00	1.000				17.50				21.40	2.000	37.45	-	-	-	58.85	34.72	69.44
			ELECTRIC UNIT HEATERS								-				-		-	-	-	-	-	-	-
			euh-1 5kw 1/125 hp	1.00	ea	300.00	4.450				77.88				321.00	4.450	83.33	-	-	-	404.33	477.09	477.09
			euh-2 5kw 1/125 hp	1.00	ea	300.00	4.450				77.88				321.00	4.450	83.33	-	-	-	404.33	477.09	477.09
			NOTE: ELECTRIC UNIT HEATERS								-				-		-	-	-	-	-	-	-
			w/mounting brackets, t'stat & control transformer, disconnect switch								-				-		-	-	-	-	-	-	-
			HOT WATER UNIT HEATER								-				-		-	-	-	-	-	-	-
			uh-1 15 mbh 1/20 hp	1.00	ea	375.00	4.200				73.50				401.25	4.200	78.64	-	-	-	479.89	566.25	566.25
			uh-2 15 mbh 1/20 hp	1.00	ea	375.00	4.200				73.50				401.25	4.200	78.64	-	-	-	479.89	566.25	566.25
			NOTE: HOT WTR UNIT HEATER								-				-		-	-	-	-	-	-	-
			PROVIDE W/ WALL T-STAT, 3-SPEED FAN SWITCH								-				-		-	-	-	-	-	-	-
											-				-			-	-	-	-	-	-
D			**HEATING HOT WATER PIPING**	**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
			COPPER PIPE								-				-		-	-	-	-	-	-	-
			2.0" type "l" copper pipe	160.00	lf	5.50	0.400				7.00				941.60	64.000	1,198.40	-	-	-	2,140.00	15.78	2,524.80
			1-1/2" type "l" copper pipe	200.00	lf	3.60	0.230				4.03				770.40	46.000	862.42	-	-	-	1,632.82	9.63	1,926.00
			1.0" type "l" copper pipe	120.00	lf	2.20	0.180				3.15				282.48	21.600	404.46	-	-	-	686.94	6.75	810.00
			3/4" type "l" copper pipe	480.00	lf	1.45	0.115				2.01				744.72	55.200	1,032.34	-	-	-	1,777.06	4.37	2,097.60
			1/2" type "l" copper pipe	20.00	lf	1.00	0.100				1.75				21.40	2.000	37.45	-	-	-	58.85	3.47	69.40
			COPPER 90 FITTINGS								-				-		-	-	-	-	-	-	-
			2.0" type "l" copper 90 ftgs	16.00	ea	10.00	0.680				11.90				171.20	10.880	203.73	-	-	-	374.93	27.65	442.40
			1-1/2" type "l" copper 90 ftgs	2.00	ea	5.00	0.250				4.38				10.70	0.500	9.37	-	-	-	20.07	11.84	23.68
			1.0" type "l" copper 90 ftgs	20.00	ea	2.00	0.280				4.90				42.80	5.600	104.86	-	-	-	147.66	8.71	174.20
			3/4" type "l" copper 90 ftgs	136.00	ea	1.00	0.171				2.99				145.52	23.256	435.10	-	-	-	580.62	5.04	685.44
			COPPER TEE FITTINGS								-				-		-	-	-	-	-	-	-
			2.0x2.0" copper tee ftgs	3.00	ea	19.00	0.500				8.75				60.99	1.500	28.09	-	-	-	89.08	35.04	105.12
			1.0x1.0" copper tee ftgs	2.00	ea	18.00	0.500				8.75				38.52	1.000	18.73	-	-	-	57.25	33.78	67.56
			3/4"x3/4" copper tee ftgs	21.00	ea	18.00	0.400				7.00				404.46	8.400	157.29	-	-	-	561.75	31.56	662.76
			2.0x3/4" copper tee ftgs	6.00	ea	18.00	0.500				8.75				115.56	3.000	56.18	-	-	-	171.74	33.77	202.62
			1-1/2.x3/4" copper tee ftgs	16.00	ea	14.50	0.400				7.00				248.24	6.400	119.84	-	-	-	368.08	27.14	434.24
			1-1/2"x1.0 copper tee ftgs	2.00	ea	19.00	0.520				9.10				40.66	1.040	19.47	-	-	-	60.13	35.48	70.96
			2.0x1-1/2x3/4" copper tee ftgs	6.00	ea	12.00	0.350				6.13				77.04	2.100	39.35	-	-	-	116.39	22.89	137.34
			1x3/4x3/4" copper tee ftgs	2.00	ea	6.00	0.220				3.85				12.84	0.440	8.24	-	-	-	21.08	12.44	24.88
			COPPER REDUCER FITTINGS								-				-		-	-	-	-	-	-	-
			2.0x1.0" copper reducer ftgs	5.00	ea	1.76	0.150				2.63				9.42	0.750	14.07	-	-	-	23.49	5.54	27.70
			3/4"x 1/2" copper reducer ftgs	36.00	ea	1.30	0.150				2.63				50.08	5.400	101.31	-	-	-	151.39	4.96	178.56
			COPPER UNION FITTINGS								-				-		-	-	-	-	-	-	-
			1.0" copper union ftgs	10.00	ea	10.00	0.400				7.00				107.00	4.000	74.90	-	-	-	181.90	21.46	214.60
			3/4" copper union ftgs	52.00	ea	4.50	0.260				4.55				250.38	13.520	253.16	-	-	-	503.54	11.43	594.36
			PUMP REDUCERS								-				-		-	-	-	-	-	-	-
			2" x pump reducer	4.00	ea	12.00	0.900				15.75				51.36	3.600	67.41	-	-	-	118.77	35.04	140.16
			roll solder	5.00	roll	10.00	1.000				17.50				53.50	5.000	93.62	-	-	-	147.12	34.72	173.60
											-				-			-	-	-	-	-	-

STUDENT ACTIVITY CENTER

Asheville, North Carolina

HVAC Estimate

WBS	Major	Minor	ITEM DESCRIPTIONS	QNTY	UNIT MSR	UNIT $ MATERIAL	PRODUCTIVITY	UNIT/ TIME	CREW .	ADJ. $ HOURLY	UNIT $ LABOR	UNIT $ EQUIP	UNIT $ SUB-CON	UNIT $ OTHER	TOTAL MATERIAL	TOTAL.. MANHOURS	TOTAL LABOR	TOTAL EQUIPMENT	TOTAL SUB-CON	TOTAL OTHER	TOTAL COST*	UNIT PRICE	TOTAL AMOUNT
E			**VALVES, METERS AND APPURTANCES**	**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
			BALL VALVES								-				-		-	-	-	-	-	-	-
			2.0" ball valve	4.00	ea	42.00	1.250				21.88				179.76	5.000	93.65	-	-	-	273.41	80.65	322.60
			1.0" ball valve	6.00	ea	18.00	0.950				16.63				115.56	5.700	106.76	-	-	-	222.32	43.72	262.32
			3/4" ball valve	33.00	ea	15.00	0.550				9.63				529.65	18.150	340.04	-	-	-	869.69	31.10	1,026.30
			1/2" ball valve	5.00	ea	13.00	0.550				9.63				69.55	2.750	51.52	-	-	-	121.07	28.57	142.85
			VALVES								-				-		-	-	-	-	-	-	-
			2.0" tripple duty valve	2.00	ea	345.00	3.000				52.50				738.30	6.000	112.35	-	-	-	850.65	501.86	1,003.72
			1.0" balancing valve	2.00	ea	30.00	0.900				15.75				64.20	1.800	33.70	-	-	-	97.90	57.76	115.52
			3/4" balancing valve	12.00	ea	24.00	0.900				15.75				308.16	10.800	202.23	-	-	-	510.39	50.19	602.28
			STRAINERS								-				-		-	-	-	-	-	-	-
			2.0" y-strainer	2.00	ea	53.00	1.300				22.75				113.42	2.600	48.68	-	-	-	162.10	95.64	191.28
			PLUGS								-				-		-	-	-	-	-	-	-
			1.0" petes plug	6.00	ea	10.50	0.900				15.75				67.41	5.400	101.12	-	-	-	168.53	33.14	198.84
			3/4" petes plug	36.00	ea	7.50	0.900				15.75				288.90	32.400	606.69	-	-	-	895.59	29.35	1,056.60
			DRAINS								-				-		-	-	-	-	-	-	-
			1.0" drain w/cap and chain	2.00	ea	22.00	0.850				14.88				47.08	1.700	31.84	-	-	-	78.92	46.56	93.12
			3/4" drain w/cap and chain	17.00	ea	15.00	0.850				14.88				272.85	14.450	270.67	-	-	-	543.52	37.73	641.41
			APPURTANCES								-				-		-	-	-	-	-	-	-
			1.0" circuit setter	2.00	ea	45.00	1.500				26.25				96.30	3.000	56.18	-	-	-	152.48	89.96	179.92
			3/4" circuit setter	14.00	ea	30.00	1.500				26.25				449.40	21.000	393.22	-	-	-	842.62	71.02	994.28
			rr.d. meter	1.00	ea	435.00	4.350				76.13				465.45	4.350	81.46	-	-	-	546.91	645.33	645.33
			1.0" air vent (ball valve)	2.00	ea	25.00	0.950				16.63				53.50	1.900	35.59	-	-	-	89.09	52.56	105.12
			3/4" air vent (ball valve)	20.00	ea	22.00	0.900				15.75				470.80	18.000	337.05	-	-	-	807.85	47.66	953.20
			1" in-line sight glass	1.00	ea	44.00	1.500				26.25				47.08	1.500	28.09	-	-	-	75.17	88.70	88.70
			3/4" agua-s'tat	2.00	ea	45.00	1.450				25.38				96.30	2.900	54.31	-	-	-	150.61	88.86	177.72
			pressure gages	5.00	ea	60.00	1.150				20.13				321.00	5.750	107.70	-	-	-	428.70	101.17	505.85
			thermometers	4.00	ea	86.00	1.150				20.13				368.08	4.600	86.16	-	-	-	454.24	134.00	536.00
											-				-			-	-	-	-	-	-
F			**HVAC CONDENSATE PIPING**	**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
			COPPER PIPE								-				-		-	-	-	-	-	-	-
			1-1/2" type "l" copper pipe	420.00	lf	3.60	0.286				5.01				1,617.84	120.120	2,251.49	-	-	-	3,869.33	10.87	4,565.40
			COPPER FITTINGS								-				-		-	-	-	-	-	-	-
			1-1/2" copper cap coupling	21.00	ea	2.50	0.343				6.00				56.18	7.203	134.82	-	-	-	191.00	10.73	225.33
			1-1/2" copper 90 fftgs	24.00	ea	5.00	0.343				6.00				128.40	8.232	154.08	-	-	-	282.48	13.89	333.36
			1-1/2" copper tee ftgs	26.00	ea	12.00	0.500				8.75				333.84	13.000	243.42	-	-	-	577.26	26.20	681.20
			1-1/2" copper union ftgs	23.00	ea	14.00	0.400				7.00				344.54	9.200	172.27	-	-	-	516.81	26.51	609.73
			1-1/2" copper plug ftgs	22.00	ea	2.50	0.343				6.00				58.85	7.546	141.24	-	-	-	200.09	10.73	236.06
			1-1/2" copper adapter ftgs	11.00	ea	4.50	0.343				6.00				52.97	3.773	70.62	-	-	-	123.59	13.26	145.86
			SOLDER								-				-		-	-	-	-	-	-	-
			solder	1.00	roll	10.00	1.000				17.50				10.70	1.000	18.73	-	-	-	29.43	34.73	34.73
			mis.tips	1.00	ls	5.00					-				5.35		-	-	-	-	5.35	6.31	6.31
			HANGERS, SUPPORTS & SADDLES								-				-		-	-	-	-	-	-	-
			pt. wood blocks	65.00	ea	2.50	0.250				4.38				173.88	16.250	304.63	-	-	-	478.51	8.69	564.85
			5" clevis hangers w/nut&rod	58.00	ea	12.50	1.150				20.13				775.75	66.700	1,249.27	-	-	-	2,025.02	41.20	2,389.60
			4" clevis hangers w/nut&rod	94.00	ea	10.50	1.150				20.13				1,056.09	108.100	2,024.68	-	-	-	3,080.77	38.67	3,634.98
			5" x 12" longs saddles @ 16 ga.	58.00	ea	12.00	0.900				15.75				744.72	52.200	977.44	-	-	-	1,722.16	35.04	2,032.32
			4" x 12" longs saddles @ 16 ga.	94.00	ea	12.00	0.900				15.75				1,206.96	84.600	1,584.14	-	-	-	2,791.10	35.04	3,293.76
			spring insulators @ hangers	154.00	ea	24.50	0.750				13.13				4,037.11	115.500	2,163.56	-	-	-	6,200.67	47.51	7,316.54
			SAFE CAULKING								-				-		-	-	-	-	-	-	-
			caulk at pipe openings	20.00	ea	42.00	1.300				22.75				898.80	26.000	486.85	-	-	-	1,385.65	81.75	1,635.00
											-				-			-	-	-	-	-	-
G			**INSULATION**	**1.00**	**LSUM**						-				-		-	-	-	-	-	-	-
			INSULATION DUCTWORK								-				-		-	-	-	-	-	-	-
			supply duct insulation	8,800.00	sf	1.25	0.135				2.36				11,770.00	1188.000	22,221.76	-	-	-	33,991.76	4.56	40,128.00
			round supply duct insulation	5,640.00	sf	1.25	0.135				2.36				7,543.50	761.400	14,242.13	-	-	-	21,785.63	4.56	25,718.40
			INSULATION PIPE								-				-		-	-	-	-	-	-	-
			2"x1-1/2" thick pipe insulation	160.00	lf	8.00	0.230				4.03				1,369.60	36.800	689.94	-	-	-	2,059.54	15.19	2,430.40
			1-1/2"x1-1/2" thick pipe insulation	200.00	lf	7.00	0.200				3.50				1,498.00	40.000	749.00	-	-	-	2,247.00	13.26	2,652.00
			1"x1-1/2" thick pipe insulation	120.00	lf	4.00	0.100				1.75				513.60	12.000	224.70	-	-	-	738.30	7.26	871.20
			3/4"x1-1/2" thick pipe insulation	480.00	lf	3.00	0.086				1.51				1,540.80	41.280	775.54	-	-	-	2,316.34	5.69	2,731.20
			1/2"x1-1/2" thick pipe insulation	20.00	lf	3.00	0.086				1.51				64.20	1.720	32.31	-	-	-	96.51	5.69	113.80
			kitchen / dishwasher duct	150.00	sf	5.00	0.320				5.60				802.50	48.000	898.80	-	-	-	1,701.30	13.38	2,007.00
			INSULATION FITTINGS (Labor w/Pipe)								-				-		-	-	-	-	-	-	-
			2.0" fitt insulation	32.00	ea	16.00					-				547.84		-	-	-	-	547.84	20.20	646.40
			1-1/2" fitt insulation	22.00	ea	14.00					-				329.56		-	-	-	-	329.56	17.68	388.96
			1.0" fitt insulation	30.00	ea	12.00					-				385.20		-	-	-	-	385.20	15.15	454.50
			3/4" fitt insulation	193.00	ea	6.00					-				1,239.06		-	-	-	-	1,239.06	7.58	1,462.94

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			INSULATION HOT WTR SYSTEM								-				-		-	-	-	-	-	-	-
			hot water pumps	2.00	ea	250.00	4.250				74.38				535.00	8.500	159.17	-	-	-	694.17	409.54	819.08
			expansion tank insulation	1.00	ea	250.00	4.250				74.38				267.50	4.250	79.59	-	-	-	347.09	409.55	409.55
			air separator unit insulation	1.00	ea	250.00	4.250				74.38				267.50	4.250	79.59	-	-	-	347.09	409.55	409.55
			ENGINEERING AS-BUILTS								-				-		-	-	-	-	-	-	-
			cad drawing (1/4" scale	1.00	ls						-		25,000.00		-		-	-	25,000.00	-	25,000.00	29,498.80	29,498.80
			ID TAGS AND LABLES								-				-		-	-	-	-	-	-	-
			tags and labels	1.00	ls	750.00	20.000				350.00				802.50	20.000	374.50	-	-	-	1,177.00	1,388.80	1,388.80
			DDC TEMPERATURE CONTROL SYSTEM								-				-		-	-	-	-	-	-	-
			ddc temp. cntrl sys.	1.00	ls						-		120,000.00		-		-	-	120,000.00	-	120,000.00	141,594.24	141,594.24
			TESTING AND BALANCING								-				-		-	-	-	-	-	-	-
			test and balance (aabc certified subcontractor)	1.00	ls						-		11,500.00		-		-	-	11,500.00	-	11,500.00	13,569.45	13,569.45
											-				-		-	-	-	-	-	-	-
											-				-			-	-	-	-	-	-
											-							-	-	-	-	-	-
																					995,086.89		
OF ESTIMATE																							**$ 1,174,342.58**

NO.	EXCLUSIONS & QUALIFICATIONS
1	See attached Exclusions and Qualifications

END