

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 101		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF5A				8.82	16.00	10	88	160		
		N		VO5-L				8.82	16.00	26	228	413		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6A				8.82	16.00	12	106	192		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4A				8.82	16.00	6	53	96		
		E/W		VO6-R				8.82	62.00	62	547	3844		
		E/W		VF6A				8.82	62.00	24	212	1488		
		E/W		VF4A				8.82	62.00	6	53	372		
		E/W		VO4-R				8.82	62.00	11	97	682		
E/W		VO1-R				8.82	62.00	15	129	909				
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	802	2043	234		
		b		Slab Edge / R-10ci				4.31	0.73	55	235	40		
		c		Transfer				9.80	2.48	22	215	54		
		d												
	e													
	f													
	g													
9	Below Grade Walls	a												
		b												
10	Ceilings	a												
		b												
		c												
	d													
	e													
11	Passive Floors	a												
		b												
	c		FC2 / R-38				1.23	0.10	1011	1238	101			
	d													
	e													
	f													
	g													
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		1011		Above Grade = Cu. Ft.		10814	4306	180
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2		460	1200	
		Appliance - 1200 BTUH												
14		Sub Totals										10040	11313	
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain										10040	11313	
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com						21		Latent Infiltration load for cooling				167		
								Latent load for occupants				400		
								Latent load for plants		Small Medium Large				
								Latent load for duct in unconditioned space						
								Latent ventilation load for cooling						
						Total Latent Gain				567				



Received by Email

1/30/2023

**FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION**

Project		Williams Invest-Third and Park, Unit 102		Design State & City		Washington	Everett-Paine AFB				
Indoor Design Heating db		70	@ Outdoor (Winter) 99% db		21	HTD		49			
Indoor Design Cooling db		75	@ Outdoor (Summer) 1% db		79	CTD		4			
Indoor Design Cooling RH		50%	Grains Difference		6	Daily Range		Medium			
Latitude		47	Elevation		596	ACF		0.985			
		Glass Direction		Construction Detail		Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH	
6A	Windows & Glass Doors	N	VF5A			8.82	16.00	10	88	160	
		N	VO5-L			8.82	16.00	26	228	413	
		N	P1-L			8.82	16.00	40	353	640	
		N	VF6A			8.82	16.00	12	106	192	
		N	VF4B			8.82	16.00	16	137	248	
		N	VF4A			8.82	16.00	6	53	96	
6B	Skylights										
7	Wood & Metal Doors	a									
		b									
		c									
8	Above Grade Walls	a	WX.6 12R, WX.6 11 / R-23			2.55	0.29	307	782	89	
		b	Transfer			9.80	2.48	29	287	73	
		c									
		d									
		e									
	Partition Walls	f									
9	Below Grade Walls	a									
		b									
10	Ceilings	a									
		b									
		c									
	Partition Ceilings	d									
		e									
11	Passive Floors	a									
		b									
	Exposed Floors	c	FC2 / R-38			1.23	0.10	1176	1440	118	
		d	Slab (Perimeter Ft.)								
	Basement Floor	e									
	Partition Floors	f									
		g									
12	Infiltration	Envelope Leakage	Average	Heated & Cooled Floor Area = Sq. Ft.	1176	Above Grade = Cu. Ft.		12581	5010	209	
		No. of Fireplaces									
13	Internal Gains	Number of Bedrooms		1	Occupants		2		460	1200	
		Appliance - 1200 BTUH									
14		Sub Totals							8484	3898	
15	Duct Loss & Gain	7F-Ducts in Conditioned Space									
		R-Value = 6	Leakage Class .12/.24			<input type="checkbox"/>	<input type="checkbox"/>				
		Installed Square Feet of Surface or Default = 1		Supply	1	Return	1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace	<input type="checkbox"/> Water Heater	None					
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount									
20		Total Sensible Loss or Gain							8484	3898	
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com						21	Latent Infiltration load for cooling		167		
							Latent load for occupants		400		
							Latent load for plants	Small	Medium	Large	
								Latent load for duct in unconditioned space			
							Latent ventilation load for cooling				
Total Latent Gain		567									

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 103		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF5A				8.82	16.00	10	88	160		
		N		VO5-L				8.82	16.00	26	228	413		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6A				8.82	16.00	12	106	192		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4A				8.82	16.00	6	53	96		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	305	777	89		
		b		Transfer				9.80	2.48	29	286	72		
		c												
		d												
		e												
	Partition Walls		f											
			g											
9	Below Grade Walls	a												
		b												
10	Ceilings	a												
		b												
		c												
	Partition Ceilings		d											
			e											
11	Passive Floors	a												
		b												
	Exposed Floors	c		FC2 / R-38				1.23	0.10	687	841	69		
		Slab (Perimeter Ft.)		d										
	Basement Floor		e											
	Partition Floors		f											
			g											
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		687	Above Grade = Cu. Ft.		7349	3967	170	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2		460		
				Appliance - 1200 BTUH								1200		
14		Sub Totals									6835	3809		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain									6835	3809		
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
20		Total Latent Gain									567			

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 104		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF5A				8.82	16.00	10	88	160		
		N		VO5-L				8.82	16.00	26	228	413		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6A				8.82	16.00	12	106	192		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4A				8.82	16.00	6	53	96		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	305	777	89		
		b		Transfer				9.80	2.48	29	286	72		
		c												
		d												
		e												
	Partition Walls		f											
			g											
9	Below Grade Walls	a												
		b												
10	Ceilings	a												
		b												
		c												
	Partition Ceilings		d											
			e											
11	Passive Floors	a												
		b												
	Exposed Floors	c		FC2 / R-38				1.23	0.10	685	839	69		
		Slab (Perimeter Ft.)		d										
	Basement Floor		e											
	Partition Floors		f											
			g											
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		685	Above Grade = Cu. Ft.		7333	3958	169	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2		460		
		Appliance - 1200 BTUH										1200		
14		Sub Totals									6825	3808		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain									6825	3808		
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
							Total Latent Gain		567					

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 105		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF3A				8.82	16.00	5	44	80		
		N		VO3-L				8.82	16.00	13	114	207		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6A				8.82	16.00	12	106	192		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4A				8.82	16.00	6	53	96		
		E/W		VO5-L				8.82	62.00	103	911	6406		
		E/W		VF5A				8.82	62.00	40	353	2480		
		E/W		VO4-L				8.82	62.00	11	97	682		
		E/W		VF4A				8.82	62.00	6	53	372		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	838	2136	244		
		b		Slab Edge / R-10ci				4.31	0.73	49	212	36		
		c		Transfer				9.80	2.48	31	303	77		
		d												
		e												
	Partition Walls		f											
			g											
9	Below Grade Walls	a												
		b												
10	Ceilings	a												
		b												
		c												
	Partition Ceilings		d											
			e											
11	Passive Floors	a												
		b												
	Exposed Floors	c		FC2 / R-38				1.23	0.10	845	1035	85		
		Slab (Perimeter Ft.)		d										
	Basement Floor		e											
	Partition Floors		f											
			g											
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		845	Above Grade = Cu. Ft.		9045	4882	209	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2		460		
				Appliance - 1200 BTUH								1200		
14		Sub Totals									10788	13713		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain									10788	13713		
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
20		Total Latent Gain									567			

**FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION**

Project		Williams Invest-Third and Park, Unit 106		Design State & City		Washington	Everett-Paine AFB				
Indoor Design Heating db		70	@ Outdoor (Winter) 99% db		21	HTD		49			
Indoor Design Cooling db		75	@ Outdoor (Summer) 1% db		79	CTD		4			
Indoor Design Cooling RH		50%	Grains Difference		6	Daily Range		Medium			
Latitude		47	Elevation		596	ACF		0.985			
		Glass Direction	Construction Detail			Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH	
6A	Windows & Glass Doors	E/W	VF4B			8.82	62.00	16	137	961	
		E/W	VF4A			8.82	62.00	6	53	372	
		E/W	P1-L			8.82	62.00	40	353	2480	
		E/W	VF6A			8.82	62.00	12	106	744	
		E/W	VO5-L			8.82	62.00	26	228	1601	
		E/W	VF5A			8.82	62.00	10	88	620	
6B	Skylights										
7	Wood & Metal Doors	a									
		b									
		c									
8	Above Grade Walls	a	WX.6 12R, WX.6 11 / R-23			2.55	0.29	308	784	90	
		b	Transfer			9.80	2.48	29	288	73	
		c									
		d									
		e									
	Partition Walls	f									
		g									
9	Below Grade Walls	a									
		b									
10	Ceilings	a									
		b									
		c									
	Partition Ceilings	d									
		e									
11	Passive Floors	a									
		b									
	Exposed Floors	c	FC2 / R-38			1.23	0.10	682	836	68	
		d	Slab (Perimeter Ft.)								
	Basement Floor	e									
	Partition Floors	f									
		g									
12	Infiltration	Envelope Leakage	Average			682	Above Grade = Cu. Ft.		7302	3941	169
		No. of Fireplaces									
13	Internal Gains	Number of Bedrooms			1	Occupants			2	460	1200
		Appliance - 1200 BTUH									
14		Sub Totals						6814		8838	
15	Duct Loss & Gain	7F-Ducts in Conditioned Space									
		R-Value = 6	Leakage Class .12/.24			<input type="checkbox"/>	<input type="checkbox"/>				
		Installed Square Feet of Surface or Default = 1		Supply	1	Return	1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace	<input type="checkbox"/> Water Heater	None					
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount									
20		Total Sensible Loss or Gain						6814		8838	
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com						21	Latent Infiltration load for cooling			167	
							Latent load for occupants			400	
							Latent load for plants	Small	Medium	Large	
								Latent load for duct in unconditioned space			
							Latent ventilation load for cooling				
Total Latent Gain			567								

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 201		Design State & City		Washington		Everett-Paine AFB					
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49		
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4		
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium		
Latitude		47		Elevation		596		ACF			0.985		
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH	
6A	Windows & Glass Doors	N		VF5				8.82	16.00	8	66	120	
		N		VO5-L				8.82	16.00	26	228	413	
		N		P1-L				8.82	16.00	40	353	640	
		N		VF6				8.82	16.00	9	79	144	
		N		VF4B				8.82	16.00	16	137	248	
		N		VF4				8.82	16.00	5	40	72	
		E/W		VO6-R				8.82	62.00	62	547	3844	
		E/W		VF6				8.82	62.00	18	159	1116	
		E/W		VF4				8.82	62.00	5	40	279	
		E/W		VO4-R				8.82	62.00	22	194	1364	
E/W		VO1-R				8.82	62.00	15	129	909			
6B	Skylights												
7	Wood & Metal Doors	a											
		b											
		c											
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	938	2391	273	
		b											
		c											
		d											
		e											
	Partition Walls		f										
			g										
9	Below Grade Walls	a											
		b											
10	Ceilings	a		RW1 / R-30+36.3				0.78	0.06	162	127	10	
		b		RW1 / R-30+27.9				0.88	0.07	215	190	15	
		c											
	Partition Ceilings		d										
			e										
11	Passive Floors	a											
		b											
	Exposed Floors	c											
		Slab (Perimeter Ft.)		d									
		Basement Floor		e									
	Partition Floors		f										
			g										
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		1188	Above Grade = Cu. Ft.		13067	5203	217
		No. of Fireplaces											
13	Internal Gains			Number of Bedrooms		2		Occupants		3		690	
				Appliance - 1200 BTUH								1200	
14		Sub Totals									9882	11555	
15	Duct Loss & Gain	7F-Ducts in Conditioned Space											
		R-Value = 6		Leakage Class .12/.24									
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1			
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None							
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount											
20		Total Sensible Loss or Gain									9882	11555	
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167		
									Latent load for occupants		600		
									Latent load for plants		Small Medium Large		
									Latent load for duct in unconditioned space				
									Latent ventilation load for cooling				
							Total Latent Gain		767				

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 202		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF5				8.82	16.00	8	66	120		
		N		VO5-L				8.82	16.00	26	228	413		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6				8.82	16.00	9	79	144		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4				8.82	16.00	5	40	72		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	318	809	92		
		b												
		c												
		d												
		e												
	Partition Walls		f											
9	Below Grade Walls	a												
		b												
10	Ceilings	a		RW1 / R-30+36.3				0.78	0.06	538	422	34		
		b												
		c												
	Partition Ceilings		d											
	e													
11	Passive Floors	a												
		b												
	Exposed Floors	c												
		Slab (Perimeter Ft.)		d										
	Basement Floor		e											
	Partition Floors		f											
g														
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		1077	Above Grade = Cu. Ft.		11850	4719	197	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2	460			
		Appliance - 1200 BTUH									1200			
14		Sub Totals									6852	3621		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain									6852	3621		
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
Total Latent Gain		567												



FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 203		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF5				8.82	16.00	8	66	120		
		N		VO5-L				8.82	16.00	26	228	413		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6				8.82	16.00	9	79	144		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4				8.82	16.00	5	40	72		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	316	805	92		
		b												
		c												
		d												
		e												
	Partition Walls		f											
9	Below Grade Walls	a												
		b												
10	Ceilings	a		RW1 / R-30+44.7				0.74	0.06	299	219	18		
		b		RW1 / R-30+36.3				0.78	0.06	277	217	18		
		c		RW1 / R-30+32.1				0.83	0.07	23	19	2		
	Partition Ceilings		d											
	e													
11	Passive Floors	a												
		b												
	Exposed Floors Slab (Perimeter Ft.)	c												
		d												
		e												
	Basement Floor		f											
	Partition Floors		g											
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		687	Above Grade = Cu. Ft.		7555	4078	175	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2	460			
				Appliance - 1200 BTUH							1200			
14		Sub Totals									6240	3601		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain								6240	3601			
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
20		Total Latent Gain				567								

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 204		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF5				8.82	16.00	8	66	120		
		N		VO5-L				8.82	16.00	26	228	413		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6				8.82	16.00	9	79	144		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4				8.82	16.00	5	40	72		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	316	805	92		
		b												
		c												
		d												
		e												
	Partition Walls		f											
			g											
9	Below Grade Walls	a												
		b												
10	Ceilings	a		RW1 / R-30+44.7				0.74	0.06	180	132	11		
		b		RW1 / R-30+36.3				0.78	0.06	349	274	22		
		c		RW1 / R-30+32.1				0.83	0.07	131	109	9		
	Partition Ceilings		d											
			e											
11	Passive Floors	a												
		b												
	Exposed Floors Slab (Perimeter Ft.)	c												
		d												
	Basement Floor	e												
	Partition Floors	f												
		g												
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		685	Above Grade = Cu. Ft.		7536	4068	174	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2	460			
				Appliance - 1200 BTUH							1200			
14		Sub Totals									6290	3605		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain								6290	3605			
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
		Total Latent Gain		567										

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 205		Design State & City		Washington		Everett-Paine AFB						
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49			
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4			
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium			
Latitude		47		Elevation		596		ACF			0.985			
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH		
6A	Windows & Glass Doors	N		VF3				8.82	16.00	4	33	60		
		N		VO3-L				8.82	16.00	13	114	207		
		N		P1-L				8.82	16.00	40	353	640		
		N		VF6				8.82	16.00	9	79	144		
		N		VF4B				8.82	16.00	16	137	248		
		N		VF4				8.82	16.00	5	40	72		
		E/W		VO5-L				8.82	62.00	103	911	6406		
		E/W		VF5				8.82	62.00	30	265	1860		
		E/W		VO4-L				8.82	62.00	11	97	682		
		E/W		VF4				8.82	62.00	5	40	279		
6B	Skylights													
7	Wood & Metal Doors	a												
		b												
		c												
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	865	2204	252		
		b												
		c												
		d												
		e												
	Partition Walls		f											
	g													
9	Below Grade Walls	a												
		b												
10	Ceilings	a		RW1 / R-30+44.7				0.74	0.06	597	439	36		
		b		RW1 / R-30+36.3				0.78	0.06	138	108	9		
		c		RW1 / R-30+32.1				0.83	0.07	103	86	7		
	Partition Ceilings		d											
	e													
11	Passive Floors	a												
		b												
	Exposed Floors Slab (Perimeter Ft.)	c												
		d												
	Basement Floor	e												
	Partition Floors	f												
		g												
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		845	Above Grade = Cu. Ft.		9298	5019	215	
		No. of Fireplaces												
13	Internal Gains			Number of Bedrooms		1		Occupants		2	460			
				Appliance - 1200 BTUH							1200			
14		Sub Totals									9924	12776		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space												
		R-Value = 6		Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None								
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount												
20		Total Sensible Loss or Gain								9924	12776			
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167			
									Latent load for occupants		400			
									Latent load for plants		Small	Medium	Large	
									Latent load for duct in unconditioned space					
									Latent ventilation load for cooling					
Total Latent Gain		567												

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 206		Design State & City		Washington		Everett-Paine AFB					
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49		
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4		
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium		
Latitude		47		Elevation		596		ACF			0.985		
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH	
6A	Windows & Glass Doors	E/W	VF4B					8.82	62.00	16	137	961	
		E/W	VF4A					8.82	62.00	6	53	372	
		E/W	P1-L					8.82	62.00	40	353	2480	
		E/W	VF6A					8.82	62.00	12	106	744	
		E/W	VO5-L					8.82	62.00	26	228	1601	
		E/W	VF5A					8.82	62.00	10	88	620	
6B	Skylights												
7	Wood & Metal Doors	a											
		b											
		c											
8	Above Grade Walls	a	WX.6 12R, WX.6 11 / R-23				2.55	0.29	318	809	92		
		b											
		c											
		d											
		e											
	f												
8	Partition Walls	g											
9	Below Grade Walls	a											
		b											
10	Ceilings	a	RW1 / R-30+44.7				0.74	0.06	176	130	11		
		b	RW1 / R-30+36.3				0.78	0.06	265	208	17		
		c	RW1 / R-30+32.1				0.83	0.07	219	183	15		
	10	Partition Ceilings	d										
			e										
11	Passive Floors	a											
		b											
	11	Exposed Floors Slab (Perimeter Ft.)	c										
			d										
			e										
	11	Partition Floors	f										
			g										
12	Infiltration	Envelope Leakage	Average		Heated & Cooled Floor Area = Sq. Ft.		677	Above Grade = Cu. Ft.		7442	4017	172	
		No. of Fireplaces											
13	Internal Gains	Number of Bedrooms				1	Occupants		2	460			
		Appliance - 1200 BTUH								1200			
14		Sub Totals								6310	8745		
15	Duct Loss & Gain	7F-Ducts in Conditioned Space											
		R-Value = 6	Leakage Class .12/.24										
		Installed Square Feet of Surface or Default = 1				Supply	1	Return	1				
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None							
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount											
20		Total Sensible Loss or Gain								6310	8745		
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com						21	Latent Infiltration load for cooling				167		
							Latent load for occupants				400		
							Latent load for plants		Small	Medium	Large		
							Latent load for duct in unconditioned space						
							Latent ventilation load for cooling						
						Total Latent Gain		567					

FORM J1<sub>AE</sub> • ABRIDGED VERSION OF MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 207		Design State & City		Washington		Everett-Paine AFB								
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49					
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4					
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium					
Latitude		47		Elevation		596		ACF			0.985					
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH				
6A	Windows & Glass Doors	E/W		VF4B				8.82	62.00	16	137	961				
		E/W		VF4				8.82	62.00	5	40	279				
		E/W		P1-L				8.82	62.00	40	353	2480				
		E/W		VF6				8.82	62.00	9	79	558				
		E/W		VO5-L				8.82	62.00	26	228	1601				
		E/W		VF5				8.82	62.00	8	66	465				
6B	Skylights															
7	Wood & Metal Doors	a														
		b														
		c														
8	Above Grade Walls	a		WX.6 12R, WX.6 11 / R-23				2.55	0.29	321	819	94				
		b														
		c														
		d														
		e														
	Partition Walls		f													
9	Below Grade Walls	a														
		b														
10	Ceilings	a		RW1 / R-30+44.7				0.74	0.06	476	350	29				
		b		RW1 / R-30+32.1				0.83	0.07	317	264	22				
		c														
	Partition Ceilings		d													
	e															
11	Passive Floors	a														
		b														
	Exposed Floors Slab (Perimeter Ft.)	c		FW1 / R-30				1.42	0.12	56	80	7				
		d														
	Basement Floor		e													
	Partition Floors		f													
	g															
12	Infiltration	Envelope Leakage		Average		Heated & Cooled Floor Area = Sq. Ft.		1262	Above Grade = Cu. Ft.		13884	5528	231			
		No. of Fireplaces														
13	Internal Gains			Number of Bedrooms		1		Occupants		2	460					
		Appliance - 1200 BTUH									1200					
14		Sub Totals									7943	8385				
15	Duct Loss & Gain	7F-Ducts in Conditioned Space														
		R-Value = 6		Leakage Class .12/.24												
		Installed Square Feet of Surface or Default = 1		Supply		1		Return		1						
16	Ventilation	Combustion Air From Conditioned Space		<input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater		None										
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount														
20		Total Sensible Loss or Gain								7943	8385					
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com							21		Latent Infiltration load for cooling		167					
									Latent load for occupants		400					
									Latent load for plants		Small		Medium		Large	
									Latent load for duct in unconditioned space							
									Latent ventilation load for cooling							
20		Total Latent Gain								7943	8385					

FORM J1<sub>AE</sub> • ABRIDGED VERSION of MANUAL J, 8TH EDITION

Project		Williams Invest-Third and Park, Unit 208		Design State & City		Washington		Everett-Paine AFB				
Indoor Design Heating db		70		@ Outdoor (Winter) 99% db		21		HTD			49	
Indoor Design Cooling db		75		@ Outdoor (Summer) 1% db		79		CTD			4	
Indoor Design Cooling RH		50%		Grains Difference		6		Daily Range			Medium	
Latitude		47		Elevation		596		ACF			0.985	
		Glass Direction		Construction Detail				Heating HTM	Cooling HTM	Net Area	Heating BTUH	Cooling BTUH
6A	Windows & Glass Doors	E/W	VO4-R					8.82	62.00	11	97	682
		E/W	VF4					8.82	62.00	5	40	279
		E/W	P1-R					8.82	62.00	40	353	2480
		E/W	VF6					8.82	62.00	9	79	558
		E/W	VO5-R					8.82	62.00	26	228	1601
		E/W	VF5					8.82	62.00	8	66	465
		S	VO4A-R					8.82	29.00	31	273	899
		S	VF4B					8.82	29.00	47	410	1349
		S	VF4					8.82	29.00	27	238	783
		S	VO4A-L					8.82	29.00	11	97	319
		S	VO5-L					8.82	29.00	26	228	749
		S	VF5					8.82	29.00	8	66	218
E/W	VO1-R					8.82	62.00	7	65	454		
6B	Skylights											
7	Wood & Metal Doors	a										
		b										
		c										
8	Above Grade Walls	a	WX.6 12R, WX.6 11 / R-23				2.55	0.29	994	2532	289	
		b										
		c										
		d										
		e										
	Partition Walls	f										
		g										
9	Below Grade Walls	a										
		b										
10	Ceilings	a	RW1 / R-30+44.7				0.74	0.06	227.00	166.85	13.62	
		b	RW1 / R-30+36.3				0.78	0.06	73	57.08	4.66	
		c	RW1 / R-30+32.1				0.83	0.07	375	312.62	25.52	
		d	RW1 / R-30+27.9				0.88	0.07	60	52.92	4.32	
		e	RW1 / R-30+23.7				0.93	0.08	43	40	3	
	Partition Ceilings	f										
		g										
11	Passive Floors	a										
		b										
	Exposed Floors	c										
		d	Slab (Perimeter Ft.)									
		e	Basement Floor									
	Partition Floors	f										
		g										
12	Infiltration	Envelope Leakage	Average	Heated & Cooled Floor Area = Sq. Ft.		1130	Above Grade = Cu. Ft.		12434	4951	207	
		No. of Fireplaces										
13	Internal Gains	Appliance - 1200 BTUH				Number of Bedrooms		1	Occupants		2	460
											1200	
14	Sub Totals										10353	13043
15	Duct Loss & Gain	7F-Ducts in Conditioned Space										
		R-Value = 6	Leakage Class .12/.24			Supply	<input type="checkbox"/>	Return	<input type="checkbox"/>	1		
		Installed Square Feet of Surface or Default = 1										
16	Ventilation	Combustion Air From Conditioned Space <input type="checkbox"/> Furnace <input type="checkbox"/> Water Heater				None						
19	Blower Heat Gain	Manufacturer's performance data has blower heat discount										
20	Total Sensible Loss or Gain										10353	13043
Project address: 3RD & PARK AVE, MUKILTEO, WA 98275 BEE Consulting LLC 170 W Dayton St., Suite 206, Edmonds, WA 98020 Pavlo Serdechnyi pavlo@bee-engineers.com						21	Latent Infiltration load for cooling				167	
							Latent load for occupants				400	
							Latent load for plants	Small	Medium	Large		
							Latent load for duct in unconditioned space					
							Latent ventilation load for cooling					
						Total Latent Gain				567		