

**Project Information**

For: COMMUNITY CENTER, INDIAN RIVER SHORES  
VERO BEACH, FL

Zone: Entire House

**COOLING LOAD**

1. DESIGN CONDITIONS	at Jul 1700 LDT	Peak load at Jul 1500 LDT		
Inside:	75 °F	Outside: 89 °F	TD: 15 °F	
RH:	60 %	MoistDiff: 60.3 gr/lb	Mult: 1.0	Ins.wb 63 °F
2. SOLAR RADIATION THROUGH GLASS			Sensible	Latent
3. TRANSMISSION GAINS			5281	-
Walls:	3658		86845	-
Glass:	1473		-	-
Doors:	25		-	-
Partitions:	0		-	-
Floors:	0		-	-
Ceilings:	81688		-	-
4. INTERNAL HEAT GAIN			Sensible	Latent
Occupants:	49729		61980	23207
Lights:	12251		23207	-
Motors:	0		-	-
Appliances:	0		0	-
5. INFILTRATION:	Outside air cfm:		190	2930
6. SUBTOTAL: Space load			Sensible	Latent
Envelope	157035		157035	30996
Less external	0		-	-
Redistribution	0		0	-
7. SUPPLY DUCT			0	-
8. SUBTOTAL: Space load + supply duct			157035	-
Actual cfm:	7542	at supply TD:	20	-
9. VENTILATION:	Make-up air cfm:		1295	19964
10. RETURN AIR LOAD:	Lighting + plenum (net)		0	53078
11. RETURN DUCT			0	-
12. TOTAL LOADS ON EQUIPMENT			177000	84073

**HEATING LOAD**

13. DESIGN CONDITIONS			Mult: 1.0	
Inside:	70 °F	Outside: 43 °F	TD: 27 °F	
14. TRANSMISSION LOSSES				44232
Walls:	6561		-	-
Glass:	2893		-	-
Doors:	50		-	-
Partitions:	0		-	-
Floors:	3648		-	-
Ceilings:	31081		-	-
15. INFILTRATION:	Outside air cfm:		524	15489
16. SUBTOTAL: Space load				59721
Envelope	59721		-	-
Less external	0		-	-
Less transfer	0		-	-
Redistribution	0		-	-
17. SUPPLY DUCT:				0
18. VENTILATION:	Make-up air cfm:		1295	38272
19. HUMIDIFICATION				22008
Piping				0
20. RETURN DUCT				0
21. TOTAL HEATING LOAD ON EQUIPMENT				120001

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Outside db	(°F)	Htg	Clg	9d	Inside db	(°F)	Htg	Clg
Outside RH	(%)	43	89		Inside RH	(%)	70	75
Outside wb	(°F)	-	60		Inside wb	(°F)	-	50
Daily range	(°F)	-	78		Design TD	(°F)	27	14
Moisture diff.	(gr/lb)	-	16					
			60					

**Heating Equipment**

Make			
Model			
Type	Elec strip		
Efficiency	100 EFF		
Heating Input	29.2	kW	
Heating Output	99.6	MBtuh	
Humidifier	58.2	gpd	
Leaving Air Temp	82.0	°F	
Actual Heating Fan	7542	cfm	

**Cooling Equipment**

Make		Trane	
Model		TTA120 (2)	
Type		Split AC	
COP / EER / SEER		11.2	
Sensible Cooling		89.6	MBtuh
Latent Cooling		38.4	MBtuh
Total Cooling		128.0	MBtuh
Leaving Air Temp		55.0	°F
Actual Cooling Fan		7542	cfm

Equipment Location	Entire House
System Type	PEAKCV
Fan Motor Heat Type	PACKAGE
Fan & Motor Combined Efficiency	0 %
Static Pressure Across Fan	0 in H2O

NAME	Area ft²	Heat Loss	Sensible Gain	Latent Gain	Htg cfm	Clg cfm	Time
open area	1917	93735	134402	71513	5496	5628	Jul 1700 LDT
clts	60	201	56	148	0	0	Jul 1700 LDT
men	146	3565	6840	1264	317	317	Jul 1700 LDT
women	174	4633	7318	1507	427	331	Jul 1700 LDT
foyer	176	7746	11670	6298	417	490	Jul 1700 LDT
kitchen	266	5749	10412	2303	484	483	Jul 1700 LDT
ac/storage	171	4127	6228	841	401	293	Jul 1700 LDT
ct2	81	247	75	199	0	0	Jul 1700 LDT
Entire House	2991	120001	177000	84073	7542	7542	Jul 1700 LDT

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VERO BEACH, FL

	<b>Heating</b>	<b>Cooling</b>
External static pressure	0 in H2O	0.10 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0 in H2O	0.10 in H2O
Supply / return available pressure	0.000 / 0.000 in H2O	0.075 / 0.025 in H2O
Lowest friction rate	0 in/100ft	0.014 in/100ft
Actual air flow	7542 cfm	7542 cfm
Total effective length (TEL)		705 ft

### Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
ac/storage-A	h 6433	401	293	0	0	0x0	RtFg	0	0	
foyer-B	c 5387	208	245	0.028	8.0	0x0	RtFg	34.0	235.0	st8
foyer-C	c 5387	208	245	0.028	8.0	0x0	RtFg	27.0	240.0	st17
kitchen	h 5303	242	241	0.028	8.0	0x0	RtFg	23.0	245.0	st7
kitchen-A	h 5303	242	241	0.028	8.0	0x0	RtFg	16.0	250.0	st16
men	c 3485	159	159	0.029	6.0	0x0	RtFg	40.5	220.0	st18
men-A	c 3485	159	159	0.030	6.0	0x0	RtFg	45.0	205.0	st14
open area-AA	c 7730	343	352	0.042	10.0	0x0	RtFg	31.0	150.0	st5
open area-AB	c 7730	343	352	0.020	10.0	0x0	RtFg	43.0	330.0	st19
open area-AC	c 7730	343	352	0.017	10.0	0x0	RtFg	52.0	385.0	st20
open area-AD	c 7730	343	352	0.020	10.0	0x0	RtFg	44.0	330.0	st19
open area-AE	c 7730	343	352	0.014	10.0	0x0	RtFg	65.0	465.0	st22
open area-AF	c 7730	343	352	0.015	10.0	0x0	RtFg	59.0	430.0	st21
open area-AG	c 7730	343	352	0.014	10.0	0x0	RtFg	66.0	465.0	st22
open area-C	c 7730	343	352	0.042	10.0	0x0	RtFg	16.0	165.0	st3
open area-J	c 7730	343	352	0.020	10.0	0x0	RtFg	71.0	315.0	st13
open area-T	c 7730	343	352	0.042	10.0	0x0	RtFg	38.0	140.0	st6
open area-U	c 7730	343	352	0.018	10.0	0x0	RtFg	57.0	355.0	st11
open area-V	c 7730	343	352	0.015	10.0	0x0	RtFg	58.0	430.0	st21
open area-W	c 7730	343	352	0.020	10.0	0x0	RtFg	48.0	335.0	st10
open area-X	c 7730	343	352	0.036	10.0	0x0	RtFg	24.0	185.0	st4
open area-Y	c 7730	343	352	0.018	10.0	0x0	RtFg	64.0	360.0	st12
open area-Z	c 7730	343	352	0.017	10.0	0x0	RtFg	51.0	385.0	st20
women	h 3642	213	166	0.027	8.0	0x0	RtFg	44.9	230.0	st18
women-A	h 3642	213	166	0.024	8.0	0x0	RtFg	53.0	265.0	st14

## Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st2	Peak AVF	3570	3625	0.014	1154	<b>24.0</b>	0 x 0	RectFbg	
st16	Peak AVF	3570	3625	0.014	1154	<b>24.0</b>	0 x 0	RectFbg	st2
st17	Peak AVF	580	569	0.027	739	<b>12.0</b>	0 x 0	RectFbg	st16
st18	Peak AVF	372	324	0.027	682	10.0	0 x 0	RectFbg	st17
st22	Peak AVF	687	703	0.014	896	<b>12.0</b>	0 x 0	RectFbg	st21
st21	Peak AVF	1374	1407	0.014	1008	<b>16.0</b>	0 x 0	RectFbg	st20
st20	Peak AVF	2061	2110	0.014	1194	<b>18.0</b>	0 x 0	RectFbg	st19
st19	Peak AVF	2748	2814	0.014	1290	<b>20.0</b>	0 x 0	RectFbg	st16
st10	Peak AVF	1374	1407	0.018	1008	<b>16.0</b>	0 x 0	RectFbg	st9
st11	Peak AVF	1030	1055	0.018	987	<b>14.0</b>	0 x 0	RectFbg	st10
st13	Peak AVF	343	352	0.020	645	10.0	0 x 0	RectFbg	st12
st12	Peak AVF	687	703	0.018	896	<b>12.0</b>	0 x 0	RectFbg	st11
st4	Peak AVF	1030	1055	0.036	987	<b>14.0</b>	0 x 0	RectFbg	st3
st6	Peak AVF	343	352	0.042	645	10.0	0 x 0	RectFbg	st5
st5	Peak AVF	687	703	0.042	896	<b>12.0</b>	0 x 0	RectFbg	st4
st7	Peak AVF	2196	2218	0.018	1016	<b>20.0</b>	0 x 0	RectFbg	st1
st8	Peak AVF	1954	1976	0.018	1118	<b>18.0</b>	0 x 0	RectFbg	st7
st9	Peak AVF	1746	1731	0.018	988	<b>18.0</b>	0 x 0	RectFbg	st8
st3	Peak AVF	1374	1407	0.036	1008	<b>16.0</b>	0 x 0	RectFbg	st1
st14	Peak AVF	372	324	0.024	682	10.0	0 x 0	RectFbg	st9
st1	Peak AVF	3570	3625	0.018	1154	<b>24.0</b>	0 x 0	RectFbg	

## Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb2	0x0	1746	1731	174.0	0.014	988	<b>18.0</b>	0x 0		RtFg	rt2
rb3	0x0	1746	1731	126.0	0.020	988	<b>18.0</b>	0x 0		RtFg	rt4
rb5	0x0	2226	2186	62.0	0.040	653	25.0	0x 0		RtFg	rt3
rb4	0x0	1824	1893	122.0	0.020	603	24.0	0x 0		RtFg	rt2

## Return Trunk Detail Table

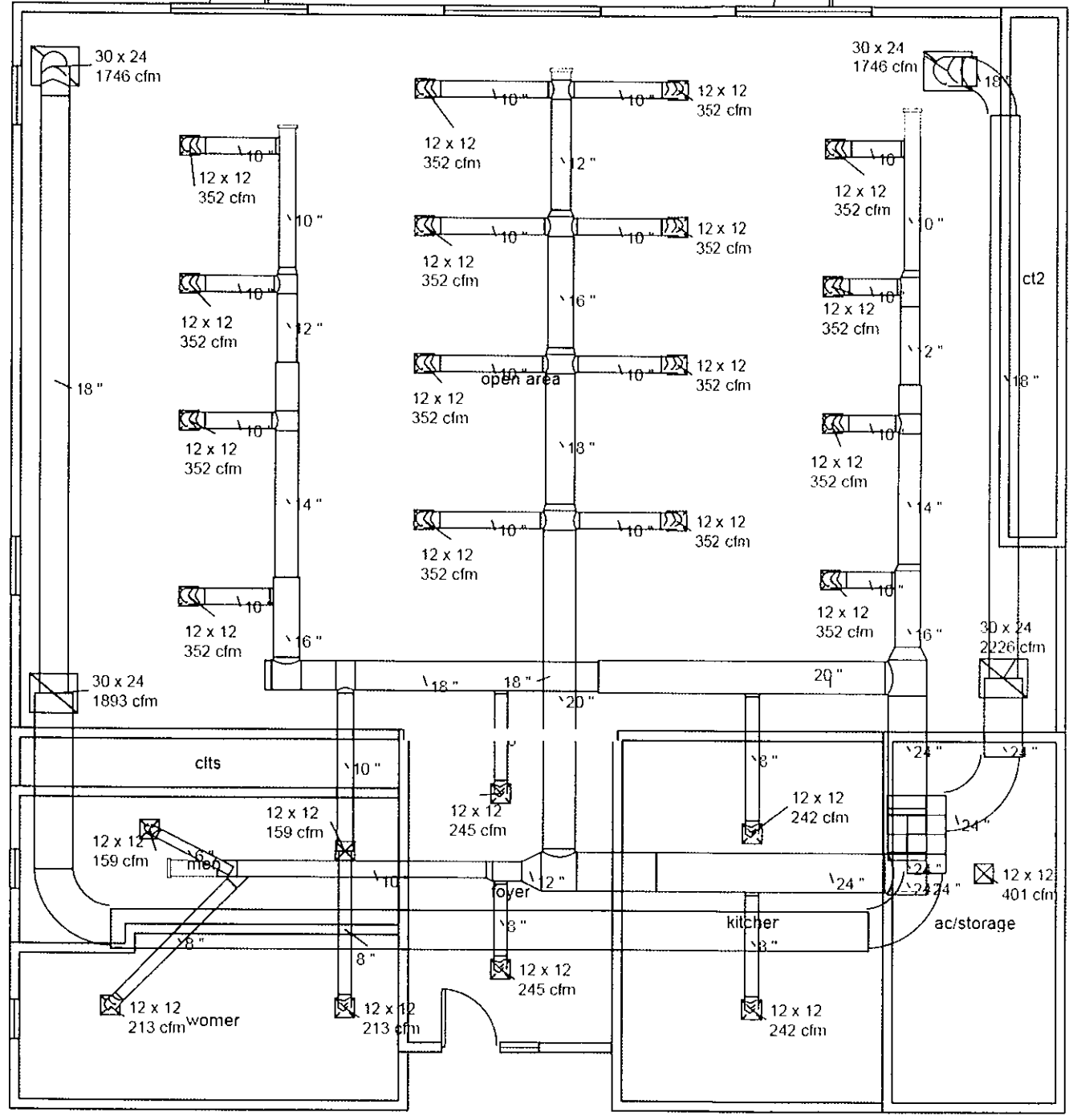
Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt2	Peak AVF	3570	3625	0.014	1154	<b>24.0</b>	0 x 0	RectFbg	
rt3	Peak AVF	3972	3917	0.020	1264	<b>24.0</b>	0 x 0	RectFbg	rt1
rt1	Peak AVF	3972	3917	0.020	1264	<b>24.0</b>	0 x 0	RectFbg	
rt4	Peak AVF	1746	1731	0.020	988	<b>18.0</b>	0 x 0	RectFbg	rt3

*Bold/italic values have been manually overridden*

21577



### Sheet 1



**Job #:**  
**Performed for:**  
 COMMUNITY CENTER  
 VERO BEACH FL

**Scale: 1 : 90**  
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