


FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name: Model #1491 Street: 1414 25th St City, State, Zip: Orlando, FL, 32805- Owner: The Center for Drug Free Living Design Location: FL, Orlando	Builder Name: Permit Office: Orange County Permit Number: Jurisdiction: 581000
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Glass/Floor Area: 0.192	Total Proposed Modified Loads: 29.32	PASS
	Total Standard Reference Loads: 38.42	

<p>I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.</p> <p>PREPARED BY: <u>Jonathan Jacobs</u> DATE: <u>4/16/14</u></p> <p>I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.</p> <p>OWNER/AGENT: _____ DATE: _____</p>	<p>Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.</p> <div style="text-align: center;">  </div> <p>BUILDING OFFICIAL: _____ DATE: _____</p>
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- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with 403.2.2.1.1.
- Compliance requires completion of a Florida Air Barrier and Insulation Inspection Checklist

PROJECT

Title: Model #1491	Bedrooms: 3	Address Type: Street Address
Building Type: User	Conditioned Area: 1491	Lot #
Owner: The Center for Drug Free Livi	Total Stories: 1	Block/SubDivision:
# of Units: 1	Worst Case: No	PlatBook:
Builder Name:	Rotate Angle: 0	Street: 1414 25th St
Permit Office: Orange County	Cross Ventilation: No	County: Orange
Jurisdiction: 581000	Whole House Fan: No	City, State, Zip: Orlando ,
Family Type: Single-family		FL , 32805-
New/Existing: New (From Plans)		
Comment:		

CLIMATE

	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
✓	FL, Orlando	FL_ORLANDO_INTL_AR	2	41	91	70	75	526	44	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1491	11928

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1491	11928	Yes	4	3	1	Yes	Yes	Yes

FLOORS

	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
✓	1	Slab-On-Grade Edge Insulatio	Main	167 ft	0	1491 ft²	----	0	0	1

ROOF

	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
✓	1	Gable or Shed	Composition shingles	1606 ft²	254 ft²	Medium	0.72	N	0.9	No	19	18.4

ATTIC

	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
✓	1	Full attic	Unvented	0	1524 ft²	N	N

CEILING

	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
✓	1	Knee Wall (Unvented)	Main	1	240 ft²	0.1	Wood
✓	2	Under Attic (Unvented)	Main	1	1524 ft²	0.1	Wood

WALLS

✓ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	In	Height Ft	In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
1	N	Exterior	Concrete Block - Int Insul	Main	7	36	4	8	0	290.7 ft²	0	0	0.5	0
2	E	Exterior	Concrete Block - Int Insul	Main	7	52	0	8	0	416.0 ft²	0	0	0.5	0
3	S	Exterior	Concrete Block - Int Insul	Main	7	27	8	10	6	290.5 ft²	0	0	0.5	0
4	W	Exterior	Concrete Block - Int Insul	Main	7	52	0	8	0	416.0 ft²	0	0	0.5	0

WINDOWS

Orientation shown is the entered, Proposed orientation.

✓ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Separation	Int Shade	Screening
1	N	1	Metal	Low-E Double	Yes	0.54	0.32	24.0 ft²	1 ft 4 in	2 ft 0 in	Drapes/blinds	Exterior 5
2	n	1	Vinyl	Low-E Double	Yes	0.54	0.32	20.0 ft²	1 ft 4 in	1 ft 0 in	Drapes/blinds	Exterior 5
3	N	1	Metal	Low-E Double	Yes	0.54	0.32	14.0 ft²	1 ft 4 in	0 ft 0 in	Drapes/blinds	None
4	N	1	Metal	Low-E Double	Yes	0.54	0.32	32.0 ft²	1 ft 4 in	2 ft 0 in	Drapes/blinds	None
5	e	2	Vinyl	Low-E Double	Yes	0.54	0.32	12.0 ft²	1 ft 4 in	1 ft 0 in	Drapes/blinds	Exterior 5
6	e	2	Vinyl	Low-E Double	Yes	0.54	0.32	15.0 ft²	1 ft 4 in	1 ft 0 in	Drapes/blinds	Exterior 5
7	e	2	Vinyl	Low-E Double	Yes	0.54	0.32	6.0 ft²	1 ft 4 in	1 ft 0 in	None	None
8	S	3	Metal	Low-E Double	Yes	0.54	0.32	24.0 ft²	1 ft 4 in	2 ft 0 in	Drapes/blinds	Exterior 5
9	s	3	Vinyl	Low-E Double	Yes	0.54	0.32	40.0 ft²	1 ft 4 in	1 ft 0 in	Drapes/blinds	Exterior 5
10	S	3	Metal	Low-E Double	Yes	0.54	0.32	14.0 ft²	1 ft 4 in	0 ft 0 in	Drapes/blinds	None
11	S	3	Metal	Low-E Double	Yes	0.54	0.32	32.0 ft²	1 ft 4 in	2 ft 0 in	Drapes/blinds	None
12	w	4	Vinyl	Low-E Double	Yes	0.54	0.32	24.0 ft²	1 ft 4 in	1 ft 0 in	Drapes/blinds	Exterior 5
13	W	4	Vinyl	Low-E Double	Yes	0.54	0.32	30.0 ft²	1 ft 4 in	1 ft 0 in	Drapes/blinds	Exterior 5

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	0.000500	1955.4	107.35	201.89	0.3650	9.8363

HEATING SYSTEM

✓ #	System Type	Subtype	Efficiency	Capacity	Block	Ducts
(Invalid)	Electric Heat Pump	None	HSPF: 8	23.2 kBtu/hr	1	sys#1

COOLING SYSTEM

✓ #	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
(Invalid)	Central Unit	Split	SEER: 14	23.2 kBtu/hr	cfm	0.8	1	sys#1

HOT WATER SYSTEM

	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Electric	None	Main	0.92	40 gal	60 gal	120 deg	None

SOLAR HOT WATER SYSTEM

	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
✓	None	None			ft²		

DUCTS

	#	--- Supply ---		--- Return ---		Leakage Type	Air Handler	CFM25 IN	CFM25 OUT	QN	RLF	HVAC #	
		Location	R-Value	Area	Location	Area						Heat	Cool
✓		(Invalid)	Attic	6	400 ft²	Main	1 ft²	Default Leakage	Main	(invalid) c (Default)		1	1

TEMPERATURES

Programable Thermostat: Y													Ceiling Fans:												
Cooling	<input type="checkbox"/>	Jan	<input type="checkbox"/>	Feb	<input type="checkbox"/>	Mar	<input type="checkbox"/>	Apr	<input type="checkbox"/>	May	<input checked="" type="checkbox"/>	Jun	<input checked="" type="checkbox"/>	Jul	<input checked="" type="checkbox"/>	Aug	<input checked="" type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input type="checkbox"/>	Nov	<input type="checkbox"/>	Dec	
Heating	<input checked="" type="checkbox"/>	Jan	<input checked="" type="checkbox"/>	Feb	<input checked="" type="checkbox"/>	Mar	<input checked="" type="checkbox"/>	Apr	<input checked="" type="checkbox"/>	May	<input type="checkbox"/>	Jun	<input type="checkbox"/>	Jul	<input type="checkbox"/>	Aug	<input type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec	
Venting	<input type="checkbox"/>	Jan	<input type="checkbox"/>	Feb	<input type="checkbox"/>	Mar	<input checked="" type="checkbox"/>	Apr	<input checked="" type="checkbox"/>	May	<input type="checkbox"/>	Jun	<input type="checkbox"/>	Jul	<input type="checkbox"/>	Aug	<input type="checkbox"/>	Sep	<input type="checkbox"/>	Oct	<input checked="" type="checkbox"/>	Nov	<input checked="" type="checkbox"/>	Dec	
Thermostat Schedule: HERS 2006 Reference													Hours												
Schedule Type			1	2	3	4	5	6	7	8	9	10	11	12											
Cooling (WD)		AM	78	78	78	78	78	78	78	78	78	80	80	80	80										
		PM	80	80	78	78	78	78	78	78	78	78	78	78	78										
Cooling (WEH)		AM	78	78	78	78	78	78	78	78	78	78	78	78	78										
		PM	78	78	78	78	78	78	78	78	78	78	78	78	78										
Heating (WD)		AM	66	66	66	66	66	66	68	68	68	68	68	68	68										
		PM	68	68	68	68	68	68	68	68	68	68	68	66	66										
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Florida Code Compliance Checklist

Florida Department of Business and Professional Regulations
Residential Whole Building Performance Method

ADDRESS: 1414 25th St
Orlando, FL, 32805-

PERMIT #:

MANDATORY REQUIREMENTS SUMMARY - See individual code sections for full details.

COMPONENT	SECTION	SUMMARY OF REQUIREMENT(S)	CHECK
Air leakage	402.4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.	
Thermostat & controls	403.1	At least one thermostat shall be provided for each separate heating and cooling system. Where forced-air furnace is primary system, programmable thermostat is required. Heat pumps with supplemental electric heat must prevent supplemental heat when compressor can meet the load.	
Ducts	403.2.2	All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code.	
	403.3.3	Building framing cavities shall not be used as supply ducts.	
Water heaters	403.4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	
Mechanical ventilation	403.5	Homes designed to operate at positive pressure or with mechanical ventilation systems shall not exceed the minimum ASHRAE 62 level. No make-up air from attics, crawlspaces, garages or outdoors adjacent to pools or spas.	
Swimming Pools & Spas	403.9	Pool pumps and pool pump motors with a total horsepower (HP) of = 1 HP shall have the capability of operating at two or more speeds. Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency=78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	
Cooling/heating equipment	403.6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	
Ceilings/knee walls	405.2.1	R-19 space permitting.	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 76

The lower the EnergyPerformance Index, the more efficient the home.

1414 25th St, Orlando, FL, 32805-

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b. N/A	R=	ft ²	15. Credits	Pstat
c. N/A	R=	ft ²		

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____



*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Project Information

For: The Center for Drug Free Living
1414 25th St, Orlando, FL 32805

Design Conditions

Location:

Orlando Executive AP, FL, US
Elevation: 112 ft
Latitude: 29°N

Outdoor:

Dry bulb (°F)
Daily range (°F)
Wet bulb (°F)
Wind speed (mph)

Heating

44
-
-
15.0

Cooling

94
16 (L)
81
7.5

Indoor:

Indoor temperature (°F)
Design TD (°F)
Relative humidity (%)
Moisture difference (gr/lb)

Heating

70
26
30
-1.6

Cooling

75
19
50
79.7

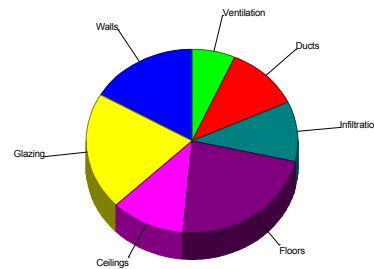
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Semi-tight
0

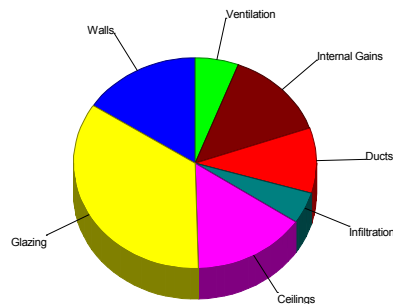
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.3	3108	16.6
Glazing	13.5	3868	20.7
Doors	0	0	0
Ceilings	1.4	2126	11.4
Floors	2.9	4261	22.8
Infiltration	1.2	1982	10.6
Ducts		2135	11.4
Piping		0	0
Humidification		0	0
Ventilation		1238	6.6
Adjustments		0	0
Total		18718	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.8	2424	15.8
Glazing	18.6	5340	34.7
Doors	0	0	0
Ceilings	1.5	2329	15.1
Floors	0	0	0
Infiltration	0.4	738	4.8
Ducts		1543	10.0
Ventilation		893	5.8
Internal gains		2120	13.8
Blower		0	0
Adjustments		0	0
Total		15387	100.0



Latent Cooling Load = 6305 Btuh
Overall U-value = 0.192 Btuh/ft²-°F

Data entries checked.

Project Information

For: The Center for Drug Free Living
 1414 25th St, Orlando, FL 32805

Notes:

Design Information

Weather: Orlando Executive AP, FL, US

Winter Design Conditions

Outside db	44 °F
Inside db	70 °F
Design TD	26 °F

Summer Design Conditions

Outside db	94 °F
Inside db	75 °F
Design TD	19 °F
Daily range	L
Relative humidity	50 %
Moisture difference	80 gr/lb

Heating Summary

Structure	15345 Btuh
Ducts	2135 Btuh
Central vent (44 cfm)	1238 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	18718 Btuh

Sensible Cooling Equipment Load Sizing

Structure	12951 Btuh
Ducts	1543 Btuh
Central vent (44 cfm)	893 Btuh
Blower	0 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	15387 Btuh

Infiltration

Method	Simplified	
Construction quality	Semi-tight	
Fireplaces	0	
	Heating	Cooling
Area (ft ²)	1491	1491
Volume (ft ³)	13573	13573
Air changes/hour	0.31	0.16
Equiv. AVF (cfm)	70	36

Latent Cooling Equipment Load Sizing

Structure	2754 Btuh
Ducts	1186 Btuh
Central vent (44 cfm)	2365 Btuh
Equipment latent load	6305 Btuh
Equipment total load	21691 Btuh
Req. total capacity at 0.79 SHR	1.6 ton

Heating Equipment Summary

Make	Carrier
Trade	CARRIER AIR CONDITIONING
Model	25HBC324(A,W)**30
AHRI ref	3698436
Efficiency	8 HSPF
Heating input	
Heating output	22400 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	773 cfm
Air flow factor	0.044 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	

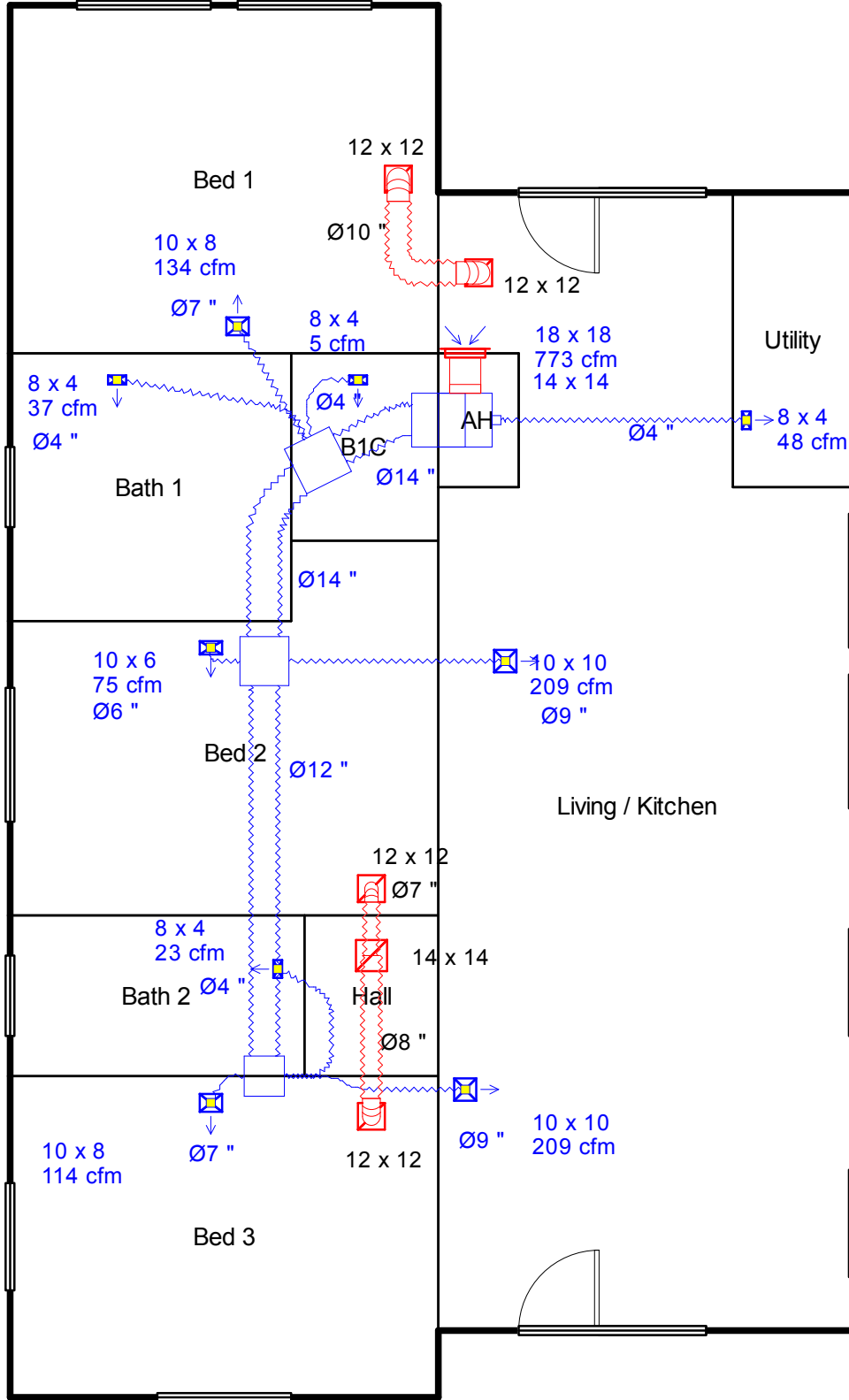
Cooling Equipment Summary

Make	Carrier
Trade	CARRIER AIR CONDITIONING
Cond	25HBC324(A,W)**30
Coil	FX4DNF025
AHRI ref	3698436
Efficiency	11.5 EER, 14 SEER
Sensible cooling	18560 Btuh
Latent cooling	4640 Btuh
Total cooling	23200 Btuh
Actual air flow	773 cfm
Air flow factor	0.053 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.71

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.



First



Job #:
Performed by Jonathan Jacobs for:
The Center for Drug Free Living
1414 25th St
Orlando, FL 32805

Mechanicals LLC.
5579 SE 44th Circle
Ocala, FL 34480
Phone: 386-503-0449
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Duct System Summary

Entire Building

Mechanicals LLC.

Job:
Date: Apr 15, 2014
By: Jonathan Jacobs

5579 SE 44th Circle, Ocala, FL 34480 Phone: 386-503-0449 Email: MechaniCalcs@gmail.com Web: ineedHVACcalcs.com or MechaniCalcsLLC.com

Project Information

For: The Center for Drug Free Living
1414 25th St, Orlando, FL 32805

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.23 in H2O	0.23 in H2O
Available static pressure	0.27 in H2O	0.27 in H2O
Supply / return available pressure	0.215 / 0.055 in H2O	0.215 / 0.055 in H2O
Lowest friction rate	0.097 in/100ft	0.097 in/100ft
Actual air flow	773 cfm	773 cfm
Total effective length (TEL)		278 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
B1C	c 95	4	5	0.196	4.0	0x0	VIFx	9.5	100.0	st1
Bath 1	h 829	37	28	0.198	4.0	0x0	VIFx	13.6	95.0	st1
Bath 2	h 529	23	21	0.097	4.0	0x0	VIFx	36.4	185.0	st3
Bed 1	h 3031	134	109	0.214	7.0	0x0	VIFx	10.7	90.0	st1
Bed 2	c 1408	52	75	0.138	6.0	0x0	VIFx	15.7	140.0	st2
Bed 3	h 2585	114	96	0.102	7.0	0x0	VIFx	31.3	180.0	st3
Living / Kitchen	c 3922	180	209	0.097	9.0	0x0	VIFx	36.3	185.0	st3
Living / Kitchen-A	c 3922	180	209	0.137	9.0	0x0	VIFx	22.2	135.0	st2
Utility	h 1091	48	22	0.395	4.0	0x0	VIFx	9.5	45.0	

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st3	Peak AVF	318	326	0.097	415	12.0	0 x 0	VinIFlx	st2
st2	Peak AVF	550	610	0.097	571	14.0	0 x 0	VinIFlx	st1
st1	Peak AVF	725	752	0.097	703	14.0	0 x 0	VinIFlx	

Return Branch Detail Table

Name	Grill 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
rb1	0x0	773	773	56.5	0.097	568	13.3	14x 14		RtFg	