TITLE 24 REPORT

Title 24 Report for:

Addition and Remodel For: Craig and Robin Williams 20680 Mockingbird Road Bodega Bay, C A 94923

Project Designer:

James McCalligan Architect 115 4th Street, Ste. A Santa Rosa, Ca 95401 (707) 578-4525

Report Prepared By:

Roy D Fowler 8131 Ragle Place Sebastopol, CA 95472 (707) 824-6928

Job Number:

0914

Date:

1/29/2010

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2005 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC - www.energysoft.com.

EnergyPro 4.4 by EnergySoft

Job Number: 0914

User Number: 4364

TABLE OF CONTENTS

Cover Page	1
Table of Contents	2
Form CF-1R Certificate of Compliance	3
Form MF-1R Mandatory Measures Summary	9
HVAC System Heating and Cooling Loads Summary	11
Room Load Summary	12
Room Heating Peak Loads	13
Room Cooling Peak Loads	15

EnergyPro 4.4 by EnergySoft

Addi Project	tion and	Remod	lel For	: Cr	aig ar	nd Ro	bin W	illia	m	S	A STATE OF THE STA	Da		2010		P-10-10-1
2068 Project	0 Mocki Address	ngbird	Road	Bod	ega B	ay							ilding Permit#	· · · · · · · · · · · · · · · · · · ·		
Roy	D Fowle	rthor							~************		7) 824-6928 ephone		n Check/Date			
Ener	gyPro iance Metho	d							C	A Clima	ate Zone 01	Fie	ld Check/Date			
TDV		te Ministrativa in la mandra de la composición del composición de la composición de		Standa Desig			Propos			Complia	ance	**********				200
	/sf-yr)		to the same of		alam a sha kan		Desig	***************************************		Margi						
-	Heating Cooling		,	40.19 1.83			41.6 0.1			-1.49 1.70						
Space Fans	coomig			1.19			1.2			-0.09						
	stic Hot W	Vater		14.09			11.2	_		2.82						
Pump	s			0.00	,		0.0	0		0.00)					
	Totals			57.30)		54.3	6		2.94	ļ.					
Perce	nt better t	than Sta	ndard:		MATCHER STATE OF THE STATE OF T	de la constanta de la constant			£146444.0mmot	5.1%	D				Ann.	
***********	<u>BUI</u>	<u>LDIN</u>	G C	<u> </u>	PLIE	<u>S - I</u>	<u> 10 P</u>	Œ	R	<u>S VEF</u>	RIFICATION	<u>10</u>	I REQUI	RED)	550000
Buildi	ng Type:	X	Single F	amily		Additio	n		•	Total Co	nditioned Floo	r Aı	ea:	3,663	ft ²	
			Multi Fa	mily	X	Existing	g + Add/	Alt	-	Existing	Floor Area:			3,663	ft ²	
Buildi	ing Front (Orientati	on:			(N)	0 deg		į	Raised F	loor Area:			872	ft ²	
Fuel 1	Гуре:					Pro	opane		;	Slab on (Grade Area:			1,427	ft ²	
Fenes	stration:		_							Average	Ceiling Height	:		9.6	ft	
	Area:	804 f	t ²		Avg. U	N	0.41		1	Number o	of Dwelling Un	its:		1.00		
F	Ratio:	22.0%		Avg.	SHGC	:	0.40		I	Number (of Stories:			2		
BUIL	DING ZON	E INFOR	MATIO	N					#	of			Thermostat	V	/ent	
Zone	Name		d		Floor A	rea	Volume	9	Uı	nits	Zone Type		Туре	Hgt.	Area	
Res He	eating				3	3,663	35,20	03	1.	.00	Conditioned		Setback	8	n/a	1
OPAG	QUE SURF	ACES		Insu	lation	Act.		Ga	ins	Conditio	'n					
Туре	Frame	Area	U-Fac.				Tilt	Υ/		Status	JA IV Referer	nce	Location	/ Comr	nents	
Wall	Wood		0.102		R-0.0	0		X X X	[New	09-A3		Lower Floor Zone			
Wall Wall	Wood Wood	72 62	0.102		R-0.0 R-0.0	270	90 90	Ŷ	1	New New	09-A3 09-A3		Lower Floor Zon			
Wall	Wood	176	0.102	R-13	R-0.0	90	90	X		Altered)	Lower Floor Zone			
	Wood		0.102		R-0.0	180	90			New	09-A3		Lower Floor Zone			
Wall Roof	Wood Wood		0.102		R-0.0 R-0.0	270 0	90	X	1	Altered New	09-A3 (E=09-A2 02-A27)	Lower Floor Zone Upper Floor Zone			
Roof	Wood		0.033		R-0.0	0		X		Altered		4)	Upper Floor Zon	e		
Floor	Wood		0.037		R-0.0	0		H		Altered	20-A4 (E=20-A1)	Upper Floor Zon			
Floor Wall	Wood Wood	482 506	0.037 0.102		R-0.0 R-0.0	270		X	1	New Altered	20-A4 09-A3 (E=09-A2	``	Upper Floor Zon			
Wall	Wood		0.069		R-0.0	90		X		Altered	09-A6 (E=09-A2		Upper Floor Zon			
Wall	Wood	230		R-13	R-0.0	0	90	X		Altered	09-A3 (E=09-A2		Upper Floor Zone			
Wall	Wood		0.102		R-0.0	0		X		New	09-A3		Upper Floor Zon			
Wall Wall	Wood Wood		0.102 0.102		R-0.0 R-0.0	90 90		Ŷ		New Altered	09-A3 09-A3 (E=09-A2	`	Upper Floor Zone Upper Floor Zone			
Wall	Wood		0.102		R-0.0	180		X		Altered	09-A3 (E=09-A2 09-A3 (E=09-A2		Upper Floor Zoni			
Wall	Wood		0.102		R-0.0	180		X		New	09-A3		Upper Floor Zone			
Wall	Wood		0.069		R-0.0	180		X		Altered	09-A6 (E=09-A2)	Upper Floor Zone	8		
Wall	Wood	145	0.102	R-13	R-0.0	270	90	X		New	09-A3	ne-renew.	Upper Floor Zon	e		
								H		The second secon						
	· · · · · · · · · · · · · · · · · · ·															
		.,			THE THE PARTY OF T			H								
		**************************************			*** ** **	*************								· · · · · · · · · · · · · · · · · · ·		
	inergyPro 4.4	hy EnergySa			itiation 1 ser Numb		1/29/10 1	3:23	3:17	Run Job Numb	Code: 12648001	97	of caldina Ma Ville almostication constitution and accommission of the caldinate of the cal	n	n, 2 of 10	
	morgyr IV 4.4	ny Lineigyou	ЛĻ	U	OCI HUIIID	GI. 4304				JOD MUME	Jel. U814			⊬age	e:3 of 18	

	dition Ject Title	and F	Remo	del F	or: (Craig	and	Robir	ı Willia	ams				Da	ate	1	/29/20	10	
FEI	NESTR/	ATION	SURF	ACES							_	•		95090stanianimine				i de la compania del compania del compania de la compania del la compania de la compania della c	530711171671623111167X0463
#	Туре			Ar	ea	U-Fac	tor ¹	SHGC	Tru Azn	e n. Tilt	Cor Sta		zing Typ	е	****		ocation/ ommen	ts	
12	Window Window	Right Right	(W)(W)	5.0 5.0				NFRC NFRC	270 270	90 Ne		Blomber	g 880 FF g 880 FF	Low E	2 (R	M)	Lower Flo		
3	Window	Left	(E)	4.0				NFRC	90	90 Ne			g 880 FF g 880 FF				Lower Flo Lower Flo	***************************************	
4	Window	Rear	(S)	24.0		0 NFRC			180	90 Re	moved	Double (Clear Lov	/-E (RN	VI)		Lower Flo		
<u>5</u>	Window Window	Rear Rear	(S) (S)	24.0 35.0	Principal Control Control	NFRC			180				Clear Lov				Lower Flo		
7	Existing	Neal	(3)	35.0		0 NFRC			180	90 Alt	erea		g 880 FF Clear Lov				Lower Flo	or Zone d for abov	
8	Window	Rear	(S)	24.0		0 NFRC			180	90 Ne	w		g 880 FF				Lower Flo		₹
9	Window	Rear	(S)	40.0		NFRC			180	90 Alt	ered		g 880 FF			RM)	Lower Flo	or Zone	***************************************
	Existing Window	Rear	(S)	47.5		NFRC			180	90 Alt	ared		Clear Lov g 880 FF					d for abov	е
12	Existing	11001	(0 NFRC			100	30 AII			y oou rr Clear Low				Lower Flo pre-altere	or ∠one d for abov	
	Window	Rear	(S)	16.5	0.41	NFRC	0.39		180	90 Alt			g 880 FF	***************************************			Lower Flo	**************************************	
14	Existing Skylight	Eront	/N1\	16.0	/	NFRC		NFRC					Clear Low					d for abov	е
15 16	Skylight	Front Front	(N) (N)	16.0 16.0		NFRC NFRC		and a second sec	<u>0</u>	0 Ne			ır Velux L ır Velux L				Upper Flo Upper Flo		
17	Window	Right	(W)	18.0		NFRC			270	90 Ne			g 880 FF				Jpper Flo		
	Window	Left	(E)	11.3) NFRC			90	90 Ne	W		g 880 FF				Jpper Flo		
19	Window	Left	(E)	11.3	0.410	NFRC	0.39	NFRC	90	90 Ne	W	Blomber	g 880 FF	LOW I	E2 (F	RM) I	Jpper Flo	or Zone	Tarrett Authoritation and an area
1. Ind	licate sourc	e either fr	om NFR	C or Table	∋ 116A.	2.	Indicate	source ei	ther from N	VFRC or	Table 1	16B.							
	ERIOR	AND E	XTER	IOR S	HADIN	1G	Win	dow		Ove	rhan	a		Left	Fin			Right Fi	in
#	Exter	ior Sha	ade Ty	ре	SHO		Hgt.	Wd.	Len.		LEx		. Dis			Hgt.	Dis	·w	Hgt.
1 2	Bug Scr Bug Scr					76			all all a families and a second		· · · · · · · · · · · · · · · · · · ·			THE STATE OF THE S					
3	Bug Scr	****		CONTROL CANADA		.76 .76		Many Police de La company					-94666					27 May 1887 albertation also	
4	Bug Scr					76		PTT A PT Committee and	*******************									A THE STREET STREET	
5	Bug Scr					76		V-078000-1-0000-					Tand to be block on						
6	Bug Scr	een			0.	76	5.0	7.0	4.0	0.	1 4.	.0 4.0				ANTA Salarana mana	P. Contiffe Malanage		***************************************
8	Bug Scr	CONTRACTOR	V			76		***************************************		Vallet and a state of the state							/ Following decreased as a second		No. 4% based to assume a con-
9	Bug Scr	een		Approximate April 1 April 1 Printers	0.	76	6.7	6.0	10.0	0.	1 10.	.0 10.0) ().1	4.0	0	0.	0.0	0
11	Bug Scr	een			0.	76	5.0	9.5	10.0	0.	10.	.0 10.0		~~~			All and the state of the state		
13	Bug Scr	een			0.	76	Martin de dell'essenza		, have become								and an individual control of Persons		
15	None				1.	00	S APART Habitanian			an extension only particular.									THE RESIDENCE OF THE PARTY.
16	None				1.	00			0.0740000000000000000000000000000000000		Contacts cons								
17	Bug Scr					76												*	
18 19	Bug Scr Bug Scr				CTT-COMPARTMENT AND THE STATE OF	76 76	CHICAGO CONTRA C		A17 = 17 - 17 A						·				
	Dag Co.	0011				, 0		A	***************************************		1545				-				
THE	ERMAL	MASS	FOR I	HIGH I	MASS	DESI	ЗN												
					Thick			Inside					Cond			cation			
Тур	е			(sf)	(ın.)	Cap.	Cond	. R-Val.	JA	IV Re	eren	ce	Stat	us	Co	ommer	nts		
				- North and distant and dissance						CONTROL OF MARKET AND ADDRESS OF THE PARTY O						10° 80° 80° 80° 80° 80° 80° 80° 80° 80° 8			1970 104 104 104 104 104 104 104 104 104 10
		***				II III III A SIN AND SOME		TOTAL CONTRACTOR OF THE SECOND						**************************************		***************************************			
						***************************************							**************************************						
	RIMETE	R LOS			D		Insula Leget		1.6	N/D=1			Cond		-	cation.			
Тур		-	Le	ength	· · · · · · · · · · · · · · · · · · ·		Locat			IV Ref		ce	Stat	us		mmer			
OIBD	Perimeter			172	INOUE	No Ins	ulation		26-A1 (E	=26-A	1)		Altered		Lov	ver Floo	r Zone	***************************************	
													777777777474						
ſ					D	Imitica'	T:	n. 04/00	140 40 00).d=	P070	^- :		0400		***************************************			
	EnergyPr	o 4.4 bv	EnergyS	oft	Kun		on Tim umber: 4		/10 13:23			un Code: nber: 091	: 126480 ₄	U197				Page: 4 of 1	8
£		·	- 3,2								1141							, age. + UI	·

Pro	ddition ject Title				or: C	raig	and	Robin	Willi	am	ıs					Date		1/29/201	0	
FE	NESTR	NOITA	SURF	ACES		September 1					Me Verlaterance	The second second		*********	(1876) CONTRACTOR		Managara ana ana ana ana ana ana ana ana ana			ATRICAN ROSCOMONOS
#	Туре			Ar	ea L	J-Fact	or ¹	SHGC	Tru Azr	ие m. 7		Cond Stat	d. . Glazi	ing Ty	ре			Location/ Comments	;	
20 21	Window Existing	Left	(E)	48.0				NFRC NFRC	90	90	Alter		Slomberg Double C				(RM)	Upper Floo		Δ
22 23	Window Existing	Left	(E)	45.0				NFRC	90	90	Alter	ed E	Blomberg	3 880 F	F LO	NE2	(RM)	Upper Floo	r Zone	
21002000	Window	Front	(N)	48.0			- SPENNSYNEE AND A	NFRC NFRC	0	90	Alter		Oouble C Inderser			RM)		pre-altered Upper Floo	**************************************	9
25	Existing							NFRC					ouble C	lear Lo	w-E(F			pre-altered		9
26 27	Window Existing	Front	_(N)	32.0	0.870	NFRC	0.77	NFRC NFRC	0	90	Alter		Blomberg Double C				(RM)	Upper Floo pre-altered		9
28	Window	Front	(N)	20.0				NFRC	0		New		lomberg					Upper Floo		
29 30	Window Window	Front Front	(N) (N)	20.0 20.0				NFRC NFRC	0		New	8	lomberg	880 F	F LOV	N E2	(RM)	Upper Floo		
31	Window	Left	(E)	16.0				NFRC	90		New New		lomberg lomberg					Upper Floor		h-1
32	Window	Left	(E)	4.0				NFRC	90		New		llomberg				\	Upper Floor		***************************************
33	Window	Left	(E)	9.0		NFRC		NFRC	90			ovedD	ouble C	lear Lo	w-F (RM)	(17(81)	Upper Floor		
34	Window	Left	(E)	6.0				NFRC	90	90	Rem	ovedD	ouble C	lear Lo	w-E (I	RM)		Upper Floor		
35	Window	Left	(E)	32.0				NFRC	90		New	В	lomberg	880 FI	F LOV	V E2 (Upper Floor		
36	Window	Rear	(S)	30.0				NFRC	180	90	Alter		lomberg				(RM)	Upper Floor	Zone	
37	Existing		······································	450				NFRC	-				ouble C					pre-altered		.
38	Window	Rear	(S)	45.0		NERC	0.39	NFRC	180	90	Alter	ed B	lomberg	1 880 FI	F LOV	V E2 ((RM)	Upper Floor	Zone	
1. Inc	dicate sourc	e either fr	om NFR	C or Table	116A.	2.	Indicate	source eit	her from	NFRO	or Ta	ble 110	3B.							
	ERIOR	AND E	XTER	IOR SI	HADIN	G	Wind	dow		C	Overl	nang			l e	eft Fir	1	F	Right Fi	n
#	Exter	ior Sha	ade Ty	ре	SHG	С	Hgt.	Wd.	Len.			LExt.	RExt.	D		Len.	Hat.	Dist.	Len.	Hgt.
20	Bug Scr				0.7	6				~							9			, , , , , , ,
22	Bug Scr	een			0.7	'6								Various				The Control of the Co	The second secon	
24	Bug Scr	een			0.7	6	8.0	6.0	4.(j	0.1	4.0	4.0	Access of Associated	0.1	4.0	0	0.1	4.0	0
26	Bug Scr	een			0.7	6			The Proposition is a second con-								Alle San	A DATA CONTRACTOR OF THE PARTY	ANY AND ANY AND ANY AND ANY	
28	Bug Scr	een		The state of the second	0.7	6												-	10.000	
29	Bug Scr		w		0.7		7.15/Marian arrange		***************************************								~		*****	
30	Bug Scr		****	TOTAL TOTAL Transfer designations	0.7		****			-		,		***************************************				****	TWENTY Control of the Assistance on the	
31	Bug Scr	en			0.7			**************************************									44			
32	Bug Scr	en			0.7	6	2.0	2.0	6.0)	0.1	6.0	6.0				All and the section of the section of			
33	Bug Scr			***************************************	0.7				***************************************						TO POSITIVE					
34	Bug Scr			of Field and delegance	0.7			**************	***************************************				A-1							THE RESIDENCE AND ADDRESS OF THE PARTY OF TH
35	Bug Scr				0.7							N Paul and and								
36	Bug Scr	en			0.7	6								****						
38	Bug Scr	en			0.7	6										**********				***************************************
mgo g y e	~~~				****															
ιHl	ERMAL	WASS	rur i				iΝ	lma!-t-						^						
Тур					Thick.		~~~d	Inside	1.6	D / F	7 - £			Cond			ocation			
ıyρ	· C			(sf)	(111.)	Jap. (Jona.	R-Val.	JA	IV	rere	rence)	Sta	tus	C	omme	ents		
	A. A. A. F. C.				***************************************			Tradelina and it accommon												
								*			****		***************************************							
	***	***************************************			-						The Section Se								***************************************	
		Western State Communication Co						A creation and a second										22.2		
	RIMETE	R LOS					nsulat							Cond		Lo	cation	۱/		
Тур	е		Le	ength	R-Val.	L	_ocati	on	JA	IV F	Refe	ence	}	Stat			omme			
					~~~															
																		~~~		
						***												The site couldness of the same same same printing to the same		
			172-10-10-10-10-10-10-10-10-10-10-10-10-10-	The state of the s					*****			per company of the form								
ļ					Run Ir	nitiatio	n Time	e: 01/29/	10 13:2:	3:17		Run	Code:	126480	00197	,		The second secon	// day to hand	
i i	EnergyPr	0 4.4 by I	EnergySo	oft		Jser Nu	mber: 4	1364		***********	Jok	Numb	er: 0914					Pa	age: 5 of 1	8

	ddition oject Title	and F	Remo	del F	or: Crai	g and	Robin	Willi	ams	P Assessment and a second			Date		29/201	0	
FE	NESTRA	NOITA	SURF	ACES						<u> </u>	_1					and as both to be process.	estimas resideis men
#	Туре	*************************		Are	ea U-Fa	ctor ¹	SHGC ²	Tru Azr	ie n. Tilt	Cor Sta		ng Type			cation/ mments	;	
40 41 42 43 44 45 46 47 48 49	Existing Window Existing Window Window Window Window Window Window Window	Rear Rear Rear Rear Rear Rear Rear Rear	(S) (S) (S) (S) (S) (S) (S) (S) (S) (W)	22.0 4.0 70.0 11.3 11.3 11.3 45.0 45.0 45.0 16.0	0.870 NFI 0.410 NFF 0.870 NFF 0.410 NFF	RC 0.77 RC 0.39 RC 0.77 RC 0.39 RC 0.39 RC 0.39 RC 0.39 RC 0.39 RC 0.39 RC 0.39	NFRC NFRC NFRC NFRC NFRC NFRC NFRC NFRC	180 180 180 180 180 180 180 180 180 270	90 Alte	ered w moved w w w w	Double C Blomberg Double C Blomberg Double C Blomberg Blomberg Blomberg Blomberg Blomberg	lear Low-E 880 FF LC lear Low-E 880 FF LC 880 FF LC	W E2 (RM) W E2 (RM) W E2 W E2 W E2 W E2 W E2 W E2	(RM) U	re-altered pper Floor	r Zone for above r Zone	
	dicate sourc				⇒ 116A. HADING		e source eith	her from		Table 1			eft Fi	in		Riaht Fi	n
#	Exter	ior Sh	ade Ty	/ре	SHGC	Hgt.	Wd.	Len		LExt		Dist.	Len.	Hgt.	Dist.	Len.	Hgt.
40	Bug Scr	een			0.76	,	Printed Street Control Control	***************************************		No Pilot Continued					PROPERTY TO SEATON		
12	Bug Scr	oon.			0.76					************							
42 43	Bug Scr			TITS AND AND SENSO	0.76 0.76											ad orbits hid below a to an income	
44	Bug Scr	een			0.76			And distributed to		THE T-40 THOS - 4000		***************************************					
45 46	Bug Scr Bug Scr				0.76 0.76			**************************************								,	O-CONTRACTOR OF THE PARTY OF TH
47	Bug Scr	all of the confidence described as a second control of			0.76				****		THE CHICAGON PROPERTY.			If a the section is a section in a section i			***
48	Bug Scr	een			0.76			**************									************
49	Bug Scr Bug Scr				0.76			more and the second				AND the autodoorbase to					
50	bug Sci	een			0.76				The state of the s		-					************	
		anti di silat kanada titak ada di kacama				. 994-994 99		***************************************				elektrist Meller Stellenhade besonen er					
							F					THE RESERVE OF THE PARTY OF THE			***************************************		
		-,,,,		Mark and a			100 100 100 100 100 100 100 100 100 100			44.0 (100.0 \$ 0.000) 440			VI				
					,		Wild beliefelised and advantages			defects to a subsect of a sub-					***************	to an add to a feet to and an a	
			and the state of t	Print has the count of the lease with the coun				***************************************					**************************************		**************************************		
Т		MASS	FOR		VASS DES Thick.Hea (in.) Cap	at	Inside I. R-Val.	JA	IV Ref	erenc	е	Condition Status		ocation/ Commen	ts		
PE Typ	RIMETE De	R LOS		.ength	R-Val.	Insula Loca		JA	IV Ref	erenc	:e	Condition Status		ocation/ Commen	is		
	FnerayP	ro 4.4 h	/ Enorm:	Coff		ition Tin	ne: 01/29/	10 13:2	13:17		in Code:	126480019	97			Page: 6 of 1	

	Run Initiation Time: 01/29/10 13:23:17	Run Code: 126480019	7
EnergyPro 4.4 by EnergySoft	User Number: 4364	Job Number: 0914	Page: 7 of 18

(date)

(signature)

Certificate Of Compliance: Residential (Part 4 of 4) Addition and Remodel For: Craig and Robin Williams 1/29/2010 **Project Title** Date **Special Features and Modeling Assumptions** The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted. Plan Field The HVAC System "Res Heating" has the Ducts in the Crawlspace. Supply registers may be no more than 2 feet above the floor. **HERS Required Verification** Items in this section require field testing and/or verification by a certified home energy rater under the supervision of a HERS provider using approved testing and/or verification methods. Plan Field

Dun Initiation Times 04/00/40 42/02/47 Dun Codes 4004000407	MATERIAL PROPERTY.	
	l	***************************************
1		
	1	
	<u>-</u>	
	To a second	

Ri	un Initiation Time:	01/29/10 13:23:17	Run Code:	1264800197	
EnergyPro 4.4 by EnergySoft	User Number:	4364	Job Number: 0914		Page:8 of 18

Mandatory Measures Summary: Residential (Page 1 of 2)

MF-1R

NOTE: Lowrise residential buildings subject to the Standards must contain these measures regardless of the compliance approach used. More stringent compliance requirements from the Certificate of Compliance supercede the items marked with an asterisk (*) below. When this checklist is incorporated into the permit documents, the features noted shall be considered by all parties as minimum component performance specifications for the mandatory measures whether they are shown elsewhere in the documents or on this checklist only.

DESCRIPTION Check or initial applicable boxes or check NA if not applicable and included with the permit application documentation.	N/A	DESIGNER	ENFORCE- MENT
Building Envelope Measures	VA VIII TOTA and Conductions	DESIGNER	WENI
*§ 150(a): Minimum R-19 in wood ceiling insulation or equivalent U-factor in metal frame ceiling.		X	
§ 150(b): Loose fill insulation manufacturer's labeled R-Value:		X	
*§ 150(c): Minimum R-13 wall insulation in wood framed walls or equivalent U-factor in metal frame walls (does not apply to exterior mass walls).		X	
* § 150(d): Minimum R-13 raised floor insulation in framed floors or equivalent U-factor.		X	
§ 150(e): Installation of Fireplaces, Decorative Gas Appliances and Gas Logs.			
Masonry and factory-built fireplaces have:			
a. closable metal or glass door covering the entire opening of the fireboxb. outside air intake with damper and control, flue damper and control		X	
2. No continuous burning gas pilot lights allowed.		X	
§ 150(f): Air retarding wrap installed to comply with §151 meets requirements specified in the ACM Residential Manual.		The state of the s	
§ 150(g): Vapor barriers mandatory in Climate Zones 14 and 16 only.	1	(10000000	
§ 150(I): Slab edge insulation - water absorption rate for the insulation alone without facings no greater than 0.3%, water vapor permeance rate no greater than 2.0 perm/inch.		X	
§ 118: Insulation specified or installed meets insulation installation quality standards. Indicate type and include CF-6R Form:	Annual Address	X	
§ 116-17: Fenestration Products, Exterior Doors, and Infiltration/Exfiltration Controls.			
1. Doors and windows between conditioned and unconditioned spaces designed to limit air leakage.		X	
Fenestration products (except field fabricated) have label with certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration certification.		[X]	
3. Exterior doors and windows weatherstripped; all joints and penetrations caulked and sealed.		X	
Space Conditioning, Water Heating and Plumbing System Measures			
§ 110-13: HVAC equipment, water heaters, showerheads and faucets certified by the Energy Commission.		X	Contractor Contractor
\$ 150(h): Heating and/or cooling loads calculated in accordance with ASHRAE, SMACNA or ACCA.		X	()
§ 150(i): Setback thermostat on all applicable heating and/or cooling systems.		X	
§ 150(j): Water system pipe and tank insulation and cooling systems line insulation.			
 Storage gas water heaters rated with an Energy Factor less than 0.58 must be externally wrapped with insulation having an installed thermal resistance of R-12 or greater. 			
Back-up tanks for solar systems, unfired storage tanks, or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation and indicated on the exterior of the tank showing the R-value.		X	
3. The following piping is insulated according to Table 150-A/B or Equation 150-A Insulation Thickness:			
 First 5 feet of hot and cold water pipes closest to water heater tank, non-recirculating systems, and entire length of recirculating sections of hot water pipes shall be insulated to Table 150B. 		X	
Cooling system piping (suction, chilled water, or brine lines), piping insulated between heating source and indirect hot water tank shall be insulated to Table 150-B and Equation 150-A.		X	
4. Steam hydronic heating systems or hot water systems > 15 psi, meet requirements of Table 123-A.			
Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.		X	
Insulation for chilled water piping and refrigerant suction piping includes a vapor retardant or is enclosed entirely in conditioned space.			
7. Solar water-heating systems/collectors are certified by the Solar Rating and Certification Corporation.			
EnergyPro 4.4 by EnergySoft User Number: 4364 Job Number: 0914		Page:	9 of 18

Mandatory Measures Summary: Residential (Page 2 of 2) MF-1F

NOTE: Lowrise residential buildings subject to the Standards must contain these measures regardless of the compliance approach used. More stringent compliance requirements from the Certificate of Compliance supercede the items marked with an asterisk (*) below. When this checklist is incorporated into the permit documents, the features noted shall be considered by all parties as minimum component performance specifications for the mandatory measures whether they are shown elsewhere in the documents or on this checklist only.

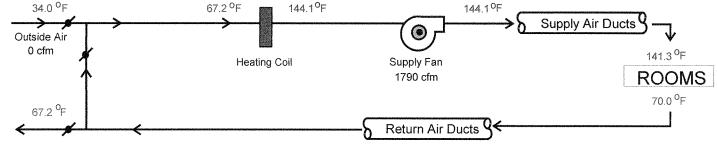
DESC	RIPTION Instruc	• •	ble boxes when completed or check N/A if not	N/A DI	I ESIGNER	ENFORCE- MENT
Space			Plumbing System Measures: (conti	nued)		
\$ 150(m):	Dusts and Fans					
& rau(m).	605, and Standard 6-5; su R-4.2 or enclosed entirely that meets the applicable	pply-air and return-air ducts and plen in conditioned space. Openings sha requirements of UL 181, UL 181A, or	t the requirements of the CMC Sections 601, 602, 603, 604, nums are insulated to a minumum installed level of II be sealed with mastic, tape or other duct-closure system UL 181B or aerosol sealant that meets the requirements an 1/4 inch, the combination of mastic and either mesh or		X	
	sheet metal, duct board of	r flexible duct shall not be used for co cts. Ducts installed in cavities and sup	nums defined or constructed with materials other than sealed nveying conditioned air. Building cavities and support oport platforms shall not be compressed to cause reductions		X	
		ct systems and their components sha be is used in combination with mastic	all not be sealed with cloth back rubber adhesive and draw bands.		X	and the same
	4. Exhaust fan systems ha	ave back draft or automatic dampers.			X	
	5. Gravity ventilating syste dampers.	ems serving conditioned space have	either automatic or readily accessible, manually operating		X	The state of the s
	maintenance, and wind. C		image, including that due to sunlight, moisture, equipment ited as above or painted with a coating that is water ause degradation of the material.		X	
	7. Flexible ducts cannot h	ave porous inner cores.			X	
§ 114: Po	ol and Spa Heating System	ns and Equipment				
		t complies with the Appliance Efficien ating instructions, no electric resistan	ncy Regulations, on-off switch mounted outside of the nice heating and no pilot light.	and the state of t		Name of the state
	2. System is installed with	:		[]	<u></u>	[*****]
	a. At least 36" of pipe b	etween filter and heater for future sol	ar heating.			
	 b. Cover for outdoor po 	ols or outdoor spas.				
	3. Pool system has directi	onal inlets and a circulation pump tim	e switch.			
§ 115: Gas		aces, pool heaters, spa heaters or ho tion: Non-electrical cooking appliance	usehold cooking appliances have no continuously es with pilot < 150 Btu/hr)		X	A second
§ 118 (i): (Cool Roof material meets s	pecified criteria				
Lightin	ng Measures					
§ 150(k)1:		a medium screw base socket (E24/E	D: contain only high efficacy lamps as outlined in Table 26). Ballasts for lamps 13 Watts or greater are electric		X	
§ 150(k)1:	HIGH EFFICACY LUMINA luminaire has factory insta		high efficacy lamps as outlined in Table 150-C,		X	
§ 150(k)2:	Permanently installed lumi in Section 130(c), of perm	naires in kitchens shall be high efficad anently installed luminaires in kitchen	cy luminaires. Up to 50% of the Wattage, as determined is may be in luminaires that are not high efficacy luminaires, ate from those controlling the high efficacy luminaires.		X	
§ 150(k)3:	Permanently installed lumi	•	y rooms, utility rooms shall be high efficacy luminaires.		X	
§ 150(k)4:			bathrooms, garages, laundry rooms, and utility rooms OR are controlled by a dimmer switch OR are controlled ổes not turn on automatically or have an always on option.	**************************************	X	Common med
§ 150(k)5:	Luminaires that are recess certified to ASTM E283 ar	sed into insulated ceilings are approve nd labeled as air tight (AT) to less that	ed for zero clearance insulation cover (IC) and are n 2.0 CFM at 75 Pascals.		X	
§ 150(k)6:	same lot shall be high effic	cacy luminaires (not including lighting	d to a residential building or to other buildings on the around swimming pools/water features or other Article 680 photo control certified to comply with Section 119(d).	The second secon	X	control land
§ 150(k)7:			g that complies with Sections 130, 132, and 147. ghting that complies with Section 130, 131, and 146.			
§ 150(k)8:			ces of low-rise residential buildings with four or more d by occupant sensor(s) certified to comply with Section 119(d)			
EnergyPro	4.4 by EnergySoft	User Number: 4364	Job Number: 0914		Page:	10 of 18

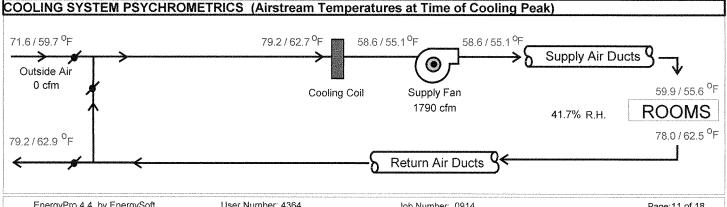
HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

PROJECT NAME DATE Addition and Remodel For: Craig and Robin Williams 1/29/2010 SYSTEM NAME FLOOR AREA Res Heating 3.663

rtes ricating						<u></u>	003
ENGINEERING CHECKS		SYSTEM LOAD			THE RESIDENCE OF THE PROPERTY	AND THE PROPERTY OF THE PROPER	
Number of Systems	2		COIL	COOLING	PEAK	COIL H	ITG. PEAK
Heating System			CFM	Sensible	Latent	CFM	Sensible
Output per System	74,000	Total Room Loads	1,812	35,368	1,600	562	43,135
Total Output (Btuh)	148,000	Return Vented Lighting		0			
Output (Btuh/sqft)	40.4	Return Air Ducts		2,320		20000	5,326
Cooling System		Return Fan		0		and the same of th	0
Output per System	23,200	Ventilation	0	0	0	0	0
Total Output (Btuh)	46,400	Supply Fan		0		-	0
Total Output (Tons)	3.9	Supply Air Ducts		2,320		and the second	5,326
Total Output (Btuh/sqft)	12.7	TOTAL SYSTEM LOAD		40,009	1.600		53,787
Total Output (sqft/Ton)	947.3				1,000		
Air System		LIVAC FOLUDMENT SELEC	TION	THE SWITT OF THE SWITTERS AND		***************************************	
CFM per System	895	HVAC EQUIPMENT SELEC	<u> </u>		7	("	
Airflow (cfm)	1,790	Trane TUC080C942B*		39,585	9,138	Annean Annean	148,000
Airflow (cfm/sqft)	0.49						
Airflow (cfm/Ton)	462.9	T	.				
Outside Air (%)	0.0	Total Adjusted System Output (Adjusted for Peak Design Conditions) 39,585				or contains a second	148,000
Outside Air (cfm/sqft)	0.00	TIME OF SYSTEM	Aug 2 pm		Jan 12 am		
Note: values above given at ARI conditions							

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak) 67.2 °F 34.0 °F 144.1°F





EnergyPro 4.4 by EnergySoft

User Number: 4364

Job Number: 0914

Page: 11 of 18

ROOM LOAD SUMMARY

Addition and Remodel For: Craig and Robin Williams

SYSTEM NAME
Res Heating

DATE
1/29/2010
FLOOR AREA
3,663

	-	-	_ ~	-	_					-	-
IR	חי	റ	M	ı	O	ΔΠ	SI	IN/	INA	ARY	,

		T	ROO	M COOLING	PEAK	COI	COOLING	PEAK	COIL HTG. PEAK		
ZONE NAME	ROOM NAME	Mult.	CFM	SENSIBLE	LATENT	CFM	SENSIBLE	LATENT	CFM	SENSIBLE	
Lower Floor Zone	Lower Floor	1	395	7,711	800	395	7,711	800	214	16,43	
Upper Floor Zone	Upper Floor	1		27,656	800	1,417	27,656		348	26,69	
		Top of the state o									
		1 min									
										an airth A na comar ann a stàite an ann a 11 Mhr a bhirt an	
		1									
		And the state of t								~~~	
			e annocean a service ser an est								
		1000									
				PAGE TO	TAL.	1,812	35,368	1,600	562	43,13	
				тот	AL	1,812	35,368	1,600	562	43,13	

ROOM HEATING PEAK LOADS

Project Title Addition and Remodel For:	Craig and Robin Willi	ams	Date 1/29/2010	
Room Information		Design Conditions		
Room Name	Lower Floor	Time of Peak	Ja	ın 12 am
Floor Area	1,427	Outdoor Dry Bulb Temperature		34 ⁰ F
Indoor Dry Bulb Temperature	70 ^o F			

Conduction	Area		U-Value		Δτ ^ο F		Btu/hr
Slab-On-Grade	perimeter = 172.0	x	0.7300	х	36	=	4,520
R-13 Wall (W.13.2x4.16)	450.0	x	0.1020	X	36	-	1,652
R-13 Wall (W.13.2x4.16)	72.0	X	0.1020	Х	36	=	264
R-13 Wall (W.13.2x4.16)	62.0	x	0.1020	х	36	-	228
Blomberg 880 FF Low E2 (RM)	5.0	X	0.4100	х	36		74
Blomberg 880 FF Low E2 (RM)	5.0	X	0.4100	х	36	Widow Common	74
R-13 Wall (W.13.2x4.16)	176.0	X	0.1020	х	36	Name Nava	646
Blomberg 880 FF Low E2 (RM)	4.0	X	0.4100	х	36	-	59
R-13 Wall (W.13.2x4.16)	287.0	X	0.1020	х	36	-	1,054
Blomberg 880 FF LOW E2 (RM)	35.0	x	0.4100	x	36	-	517
Blomberg 880 FF LOW E2 (RM)	24.0	x	0.4100	X	36	-	354
Blomberg 880 FF LOW E2 (RM)	40.0	X	0.4100	x	36		590
Blomberg 880 FF LOW E2 (RM)	47.5	X	0.4100	x	36	1000	701
Blomberg 880 FF LOW E2 (RM)	16.5	х	0.4100	X	36	_	244
R-13 Wall (W.13.2x4.16)	225.0	х	0.1020	X	36	_	826
,		X	And a second	x		-	- OZC
		x		x		=	
		x		x		=	
		x		X		902	
	200 - 200 -	x	The second secon	x		9000 7225	THE RESIDENCE OF STREET, AND A STREET, WHICH AND A STREET, WHICH AND A STREET, WHICH A STREET,
		x		x			
		x		X		=	
		x	- 7-7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	X		1450E	
		x		x			THE STREET SECTION SEC
		X		x		=	
		x		X			CONTRACTOR OF SURE AND ADDRESS OF SURE AND ADDRESS OF SURE AND ADDRESS OF SURE ADDRESS OF SURFACE ADDRESS OF SURE ADDRESS OF S
		x				=	
		-		X	1 1 1 1		
		X		X		=	
		X		X		-	
	1 1	X		X		ents mark	
		X		Х		sem sour	
	SALAS ANNALAS	X		X			
		X		X		=	
		X		X			
		X		Х		ļ	
		X		X		=	
		X		Х		= -	
		X		X			
ome about with an antorial (*) danger and ation they	44404 7174411117411111111111111111111111	X		X			
ems shown with an asterisk (*) denote conduction throug	in an interior surface to another room.				Page Total:		11,803
Infiltration: 1.00 x 1.0	76 x 1,427 x 9.0	x 0	0.559 / 60	X	36	NO.	4,636

TOTAL HOURLY HEAT LOSS FOR ROOM

16,439

ROOM HEATING PEAK LOADS

Project Title Addition and Remodel For:	Craig and Robin Willi	ams	Date 1/29/2010	
Room Information		Design Conditions	CONTRACTOR STATE OF THE PROPERTY OF THE PROPER	TACHETTOSISTA
Room Name	Upper Floor	Time of Peak	Jan 1	2 am
Floor Area	2,236	Outdoor Dry Bulb Temperature	34	1 ⁰ F
Indoor Dry Bulb Temperature	70 ^o F			

Conduction	Area		U-Value		△T ^o F		Btu/hr
R-30 Roof (R.30.2x12.24)	482.0	x	0.0330	х	36	_	573
R-30 Roof (R.30.2x12.24)	1,758.0	x	0.0330	X	36	-	2,089
Dbl Clear Velux Low-E (RM)	16.0	х	0.6500	X	36	-	374
R-19 Floor (F.19.2x10.16)	390.0	х	0.0370	х	36	4004	519
R-19 Floor (F.19.2x10.16)	482.0	x	0.0370	X	36	Miner Miner	642
R-13 Wall (W.13.2x4.16)	506.0	x	0.1020	х	36	=	1,858
Blomberg 880 FF LOW E2 (RM)	18.0	х	0.4100	x	36	=	266
R-21 Wall (W.21.2x6.16)	79.4	X	0.0690	X	36	==	197
Blomberg 880 FF LOW E2 (RM)	11,3	X	0.4100	x	36		167
Blomberg 880 FF LOW E2 (RM)	11.3	x	0.4100	x	36	Name of the last	167
Blomberg 880 FF LOW E2 (RM)	48.0	х	0.4100	x	36		708
Blomberg 880 FF LOW E2 (RM)	45.0	x	0.4100	x	36	-	664
R-13 Wali (W.13.2x4.16)	230.0	x	0.1020	x	36	=	845
Andersen HP (R)	48.0	х	0.3200	X	36		553
Blomberg 880 FF LOW E2 (RM)	32.0	X	0.4100	x	36		472
R-13 Wall (W.13.2x4.16)	87.0	x	0.1020	x	36	=	319
Blomberg 880 FF LOW E2 (RM)	20.0	x	0.4100	x	36	Marri Seleki	295
Blomberg 880 FF LOW E2 (RM)	20.0	x	0.4100	x	36	1000	295 295
Blomberg 880 FF LOW E2 (RM)	20.0	x	0.4100	x	36		295
R-13 Wall (W.13.2x4.16)	145.0	x	0.1020	x	36		532
Blomberg 880 FF LOW E2 (RM)	16.0	x	0.4100	×	36	-	236
R-13 Wall (W.13.2x4.16)	232.0	x	0.1020	x	36	===	852
Blomberg 880 FF LOW E2 (RM)	4.0	x	0.4100	x	36	-	59
Blomberg 880 FF LOW E2 (RM)	32.0	X	0.4100	x	36	-	472
R-13 Wall (W.13.2x4.16)	121.0	x	0.1020	X	36	eone:	444
Blomberg 880 FF LOW E2 (RM)	30.0	x	0.4100	X	36		443
Blomberg 880 FF LOW E2 (RM)	45.0	x	0.4100	X	36	tenido bosos;	664
Blomberg 880 FF LOW E2 (RM)	22.0	x	0.4100	X	36	riote Empl	325
R-13 Wall (W.13.2x4.16)	143.0	x	0.1020	X	36	MARCO COMPANY	525 525
Blomberg 880 FF LOW E2 (RM)	4.0	x	0.4100		36	===	
R-21 Wall (W.21.2x6.16)	104.1	X	0.0690	X X	36		59 259
Blomberg 880 FF LOW E2 (RM)	11.3	x	0.4100	X	36	-	
Blomberg 880 FF LOW E2 (RM)	11.3	x	0.4100	x	36	-	167 167
Blomberg 880 FF LOW E2 (RM)	11.3	x	0.4100	x	36		167
Blomberg 880 FF LOW E2 (RM)	45.0	x	0.4100	X	36		664
Blomberg 880 FF LOW E2 (RM)	45.0	x	0.4100	X	36		664
Blomberg 880 FF LOW E2 (RM)	45.0	X	0.4100	x	36		664
R-13 Wall (W.13.2x4.16)	145.0	x	0.1020	x	36	Second shows	532
Blomberg 880 FF LOW E2 (RM)	16.0	X	0.4100	X	36	==	236
Items shown with an asterisk (*) denote conduction through a		^ :	0.7100	^		£	
[Page Tota	H:	19,431
Infiltration: 1.00 x 1.076 Schedule Air Sensible Fraction	X 2,236 X 10.0 Area Ceiling Heigh	00 X ght	0.503 / 60 3	(36 △T		7,264

TOTAL HOURLY HEAT LOSS FOR ROOM

26,695

m Information m Name: r Area: or Dry Bulb Temperature: Opaque Surfaces R-13 Wall (W.13.2x4.16)		Outdoor We Outdoor Da Area	y B eb I iily	lulb Temp Bulb Tem	perat	ure:		ON FREE PROPERTY.	and the second s
r Area: or Dry Bulb Temperature: Opaque Surfaces R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	1,427 sf 78 °F Orientation	Outdoor We Outdoor Da Area	eb I	Bulb Tem Range:	perat	ure:			6
Opaque Surfaces R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	Orientation (N) (W) (E)	Outdoor Da Area 522.0	ily	Range:		ent The Assessment of the above see	War and a second and a second and a second		
Opaque Surfaces R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	Orientation (N) (W) (E)	Area 522.0				and Which a constant of the object on the			
Opaque Surfaces R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	Orientation (N) (W) (E)	Area 522.0			er menning for a financial and a color	and The Assessment State State	14 hans announcement of the second of the second		1
R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	(N) (W) (E)	522.0	Γ	U-Facto	*				
R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	(W) (E)			aoto	ž	С	LTD ¹		Btu/hr
R-13 Wall (W.13.2x4.16) R-13 Wall (W.13.2x4.16)	(E)	62.0	X	0.1)20 x		8.0	=	426
R-13 Wall (W.13.2x4.16)	1		x	0.1	020 x		18.0	-	114
	(9)	176.0	x	0.1)20 x		18.0	=	323
R-13 Wall (W.13.2x4.16)	197	287.0	x	0.10)20 x		11.0	===	322
ı	(W)	225.0	x	0.1)20 x		18.0	=	413
			x		х			=	
			x		х			=	
			x		х			=	
			X .		х			=	
			x		х	i i		=	
			x		х			=	
			x		х			=	
tems shown with an asterisk (*) denote conduction the						Pa	ge Total		1,598
Fenestration	Orientation	Sha Area		d GLF	U Area	nsha	ded GLF		Btu/hr
Window	(W)	0.0	x	16.7 +	5	.0 x	39.9	=	199
Window	(W)	0.0	x	16.7	5	.0 X	39.9	=	199
Window	(E)	0.0	X	16.7	4	.0 X	39.9	=	159
Window	(S)	35.0	X	16.7 +	0	.0 X	24.4	=	585
Window	(S)	0.0	X	16.7	24	.0 X	24.4	-	586
Window	(S)	40.0	X	16.7 +	0	.0 X	24.4	Mary Mary	668
Window	(S)	47.5	X	16.7	0	X 0.	24.4	=	793
Window	(S)	0.0	X	16.7	16	.5 X	24.4	===	403
			X	+		Х		1000	
	- A-A-In-1-1		X	+		Х		-	
			X	+		X		==	
						Pag	ge Total		3,593
nternal Gain									Btu/hr
Occupants 4 Occ	upants X	230 Btuh/oc	c.	manie Manie					920
	ing Units x	1,600 Btuh		and sin					1,600
) x 100.69 x	-6		NOME SHOOT					0
Air Sensible CFM	ELA	ΔT			SUMMONT MAN N			·	
TOTAL HOURLY SENSIBLE HEAT	JAIN FUR KUUN					inioanus arian e			7,711
Latent Gain		000						Γ	Btu/hr
Occupants 4 Occu	upants x	200 Btuh/occ	;.					werten.	800
Infiltration: 4,822 x 0.00 Air Latent CFM) X 100.69 X	0.00000 w		displa makin					(
TOTAL HOURLY LATENT HEAT GA	IN FOR ROOM	MATERIA BARADONA MINISTERIO MATERIA MATERIA DE MATERIA DE MATERIA DE MATERIA DE MATERIA DE MATERIA DE MATERIA D		darma a martina da	***********	***************************************	er		800

Design Conditions Desi	ect Title dition and Remodel For: Cr	aig and Robin	Willi	ams							Date 1/29/2010			
Description Comparison Co					nd	itions	***************************************							
R-30 Roof (R.30 2x12.24)	om Name: or Area:	2,2	36 sf	Outdoor D Outdoor W		7; 60 15								
R-19 Floor (F. 19 2x10.16)	Opaque Surfaces	Orientation		Area		U-Fa	cto	ř	С	LTD ¹		Btu/hr		
R-19 Floor (F-19 2xt0.16)	R-30 Roof (R.30,2x12,24)	(N)		2,240.0	x		0.0	330 x	*************	42.0	=	3,105		
R-12 Wall W 13 2x4 16	R-19 Floor (F.19.2x10.16)			390.0	Х		0.0			9.0	=	130		
R-21 Wall (W.21,2x6.16)	R-19 Floor (F.19.2x10.16)			482.0	х		0.0	370 x	-5-00-00-0	9.0	==	161		
R-13 Wall (W.13.2x4.16)	R-13 Wall (W.13,2x4.16)	(W)		506.0	х		0.1	020 x		18.0	=	929		
R-13 Wall (W 13.2x4.16)	R-21 Wall (W.21.2x6.16)	(E)		79.4	X		0.0	690 x		18.0	=	99		
R-13 Wall (W.13.2x4.16) (E) 232.0 x 0.1020 x 18.0 =	R-13 Wall (W.13.2x4.16)	(N)		317.0	х		0.10	020 x		8.0	=	259		
R-13 Wall (W.13.2x4.16) (S)	R-13 Wall (W.13.2x4.16)	(E)		145.0	х		0.10	020 x		18.0	=	266		
Items shown with an asterisk (*) denote conduction through an interior surface to another room.	R-13 Wall (W.13.2x4.16)	(E)		232.0	х		0.10	020 X		18.0	=	426		
	R-13 Wall (W.13.2x4.16)	(S)		121.0	x		0.10	020 x		11.0	=	136		
Items shown with an asterisk (*) denote conduction through an interior surface to another room. 1. Cooling Load Temperature Difference (CLTD)		opposite the second			X			х			=	Transfer and Standard Section of Free security		
Telems shown with an asterisk (*) denote conduction through an interior surface to another room. Page Total 5.				A CONTRACT C							=			
Shaded Unshaded Shaded Unshaded Shaded Unshaded Shaded Unshaded Shaded Unshaded Shaded											-			
Shaded Area GLF Btul/t						to real territories			Pa	ne Total	ĺ	5,509		
Window	Fenestration	Orientation			ad			_	sha		5	Btu/hr		
Window (E)	Skylight	(Sky)		0.0	X	32.1	+	16.0	x	130.4	=	2,087		
Window (E)	Window	(W)		0.0	X	16.7	+	18.0	Х	39.9	=	717		
Window (E)	Window	(E)		Printle de discourse de manuel de ma			+	11.3	Х	39.9	=	450		
Window (E)	Window	(E)		forth or be for me hand or many		1	+	11.3	X	39.9	NO.	450		
Window (N) 0.0	Window	(E))		+	48.0	Х	39.9	=	1,913		
Window W	Window	(E)		j	1	1	+	45.0	Х	39.9	=	1,794		
Window W	Window	(N)		0.0	X	20.1	+	48.0	X	20.1	=	963		
Window (N) 0.0 x 16.7 + 20.0 x 16.7 =	Window	(N)		0.0	X	16.7	+	32.0	X	16.7	=	535		
Page Total Pag	Window	(N)		0.0	X	16.7	+	20.0	X	16.7	==	334		
Internal Gain Occupants	Window	(N)		0.0		16.7		20.0	,	16.7	-	334		
Occupants 4 Occupants X 230 Btuh/occ. = Equipment 1 Dwelling Units X 1,600 Btuh = 1, Infiltration: 1,076 X 0,00 X 157.77 X -6 = TOTAL HOURLY SENSIBLE HEAT GAIN FOR ROOM 27, Latent Gain Occupants 4 Occupants X 200 Btuh/occ. = Infiltration: 4,822 X 0.00 X 157.77 X 0.00000 = Air Latent CFM ELA					^		•		}	ge Total	L	9,578		
Equipment 1 Dwelling Units x 1,600 Btuh = 1, Infiltration: 1.076 x 0.00 x 157.77 x -6 = Air Sensible CFM ELA	Internal Gain									-		Btu/hr		
Infiltration: 1.076 x O.00 x ELA X O.00 x ELA 157.77 x O.000 x ELA = TOTAL HOURLY SENSIBLE HEAT GAIN FOR ROOM 27,4 Latent Gain Occupants 4 Occupants x O.00 Btuh/occ. = Infiltration: 4,822 x O.00 x 157.77 x O.00000 = Air Latent CFM	Occupants 4	Occupants X		230 Btuh/o	CC.	Miles Notes					Transaction of	920		
Air Sensible CFM ELA AT TOTAL HOURLY SENSIBLE HEAT GAIN FOR ROOM 27,4 Latent Gain Occupants 4 Occupants x 200 Btuh/occ. = Infiltration: 4,822 x 0.00 x 157.77 x 0.00000 = Air Latent CFM ELA AW	Equipment 1 Du	welling Units x		1,600 Btuh		None None						1,600		
Latent Gain Btu/f Occupants 4 Occupants x 200 Btuh/occ. = Infiltration: 4,822 x 0.00 x 157.77 x 0.00000 = = Air Latent CFM ELA △W			x			=						0		
Occupants 4 Occupants X 200 Btuh/occ. = Infiltration: 4,822	TOTAL HOURLY SENSIBLE HEA	T GAIN FOR RO	ОМ									27,656		
Infiltration: 4,822 x 0.00 x 157.77 x 0.00000 = CFM ELA											Г	Btu/hr		
Air Latent CFM ELA △W	Occupants 4	Occupants x		200 Btuh/oc	C.	is and in						800		
		0.00 x 157.77 ELA	x			=					I manual	0		
TOTAL HOURLY LATENT HEAT GAIN FOR ROOM	TOTAL HOURLY LATENT HEAT	GAIN FOR ROOM	Л		ALEXANIA							800		

ect Title dition and Remodel For: C	raig and Robin W	/illiams			NAAA MAA MAA MAA MAA MAA MAA MAA MAA MAA				1/2	9/2	2010
om Information		Des	ign Co	nd	itions	**********		otubization			
om Name:	Upper Flo	or Out	door D	ry	Bulb Te	emp	perature	9:			7
or Area:	2,236	sf Out	door W	/ek	Bulb 1	em	peratu	re:			6
oor Dry Bulb Temperature:		^O F Out									1
		1 July	4001 D	an	y italig	.				*****************	
Opaque Surfaces	Orientation	Ar	ea		U-Fa	cto	r	С	LTD 1		Btu/hr
R-13 Wall (W.13.2x4.16)	(S)		143.0	х		0.1	020 x		11.0	****	160
R-21 Wall (W.21.2x6.16)	(S)		104.1	X		0.0	690 x		11.0	===	79
R-13 Wall (W.13.2x4.16)	(W)		145.0	х		0.1	020 x		18.0	-	266
				Х			x			-	
				х			x			=	
				х			x	***************************************		=	
				X			x	****		****	
				X			x	Philad Processors		Armen Walle	
			- Control of the Cont	х			x	**************************************		===	
	AND			X			x		hada adaad oo daa 1 ka aa 1 k haad oo aa aanad 1 kaasaa aa	=	
	PATRICT SEASON S	Name of the last o		Х			x			750000 140000	
	The second secon			X			x	er de la Maria de La sacce		71.0745 4.0745	
		X			Parameter de la constante de l			Dэ	ge Total	1	506
Items shown with an asterisk (*) denote conduct	-	to another	room.					. u	ge iotai		
Cooling Load Temperature Difference (CLTE)))										
Fenestration	Orientation		Sh Area	ad	led GLF		Uns Area	sha	ded GLF		Btu/hr
Window	(N)		0.0	X	16.7	+	20.0	х	16.7	=	334
Window	(E)		0.0	X	16.7	+	16.0	X	39.9	MAN .	638
Window	(E)		4.0	X	16.7	÷	0.0	X	39.9		67
Window	(E)		0.0	X	16.7	+	32.0	X	39.9	=	1,275
Window	(S)		0.0	X	16.7	+	30.0	X	24.4	=	733
Window	(S)		0.0	X	16.7	+	45.0	X	24.4	prom week	1,099
Window	(S)		0.0		ļ	3	22.0	X	24.4	22	537
Window	(S)		0.0			+	4.0		24.4	==	98
Window	(S)		0.0			+	11.3	X	24.4	2000 2000	276
Window	(S)		0.0			1	11.3	1	24.4	=	276
				X		+		X	ge Total	==	5,333
Internal Gain									go rota	•	Btu/hr
Occupants 4	Occupants X	230	Btuh/o	CC	galapse Wilds						920
	Owelling Units X		Btuh	00.	Marine Gillon						1,600
Equipment	Weining Office A	1,000	Dian								1,000
Infiltration: 1.076 X Air Sensible CF	0.00 X 157.77 X W ELA	<u>△</u> T	-6		=						0
TOTAL HOURLY SENSIBLE HE	AT GAIN FOR ROOM										27,656
Latent Gain	\$2000 Market 1000 Market 1										Btu/hr
Occupants 4	Occupants x	200	Btuh/oc	C.	=						80
Infiltration: 4 000 vs	0.00		200								permanental de la companya del companya de la companya del companya de la company
Infiltration: 4,822 X Air Latent CF	0.00 X 157.77 X M ELA	0.000 V			STORE						
TOTAL HOURLY LATENT HEAT	GAIN FOR ROOM	Managara and Angelon and A								**********	800
EnergyPro 4.4 by EnergySoft	User Number: 4364		Job Nun	nhai	- ng1/					De	ige: 17 of 18

lition and Remodel For: Cra	aig and Robin	Willia	ms	warnouthe	and Allindra Laborator	OSTANO DE TOTAL			1/2	29/2	2010	
m Information			Design Conditions									
m Name:	Upper I	Floor C	Outdoor Dry Bulb Temperature:									
r Area:	2.2	36 sf C	Outdoor W		6							
or Dry Bulb Temperature:					1							
or Dry Daib Temperature.		70.	Outdoor Daily Range:									
Opaque Surfaces	Orientation		Area		U-Fa	cto	r	CL	.TD ¹		Btu/hr	
				x			x	alla d'accid en l'en accid accide		==		
				x			x		*	=		
	Annual Marian Ma			x			x			=		
				x			x	**********		-		
		to a second colored	Total Control of the	x			x	TOTAL STREET		=		
				x			x			=	APPENIATION OF STATE AND STATE OF APPENIATION OF STATE AND APPENIATION OF STATE AND APPENIATION OF STATE AND APPENIATION OF AP	
				x			X			_	ad PSO (10 at 1 d 1 1 1 to be about 100 belong the second of her followish.	
				x			x			=		
				х			x			=		
				х			x			===	\$\$ marketing and \$1,400 to 1007 control of 1000 to 100	
				x			x			=		
				x			x			=		
Home shows with an extended the desertions of	n through an interior	fana t '	ibor er					Pag	e Tota		0	
Items shown with an asterisk (*) denote conduction 1. Cooling Load Temperature Difference (CLTD)	n unough an menor sur	iace io anoi	arei 100M.					9		_		
, , ,	Orientation		Sh	ade				shad				
Fenestration	Orientation		Area	n r	GLF		Area	\ f''-	GLF) [Btu/hr	
Window	(S)		0.0	1 1	16.7	+	11.3	x	24.4	=	276	
Window	(S)		0.0	X	16.7	+	45.0	X	24.4	=	1,099	
Window	· (S)		0.0	X	16.7	+	45.0	X	24.4	=	1,099	
Window	(S)		0.0	1 1	16.7	+	45.0	1 1	24.4	=	1,099	
Window	(W)		0.0	X	16.7	+	16.0	X	39.9	=	638	
				Х		+		Х		=		
				X		+		X		=		
				Х		*		X		=		
				X		+		Х		=		
				X		+	ļ	X		=		
				X		+		X				
								Pag	e Tota	1	4,211	
Internal Gain											Btu/hr	
Occupants 4 O	occupants X		230 Btuh/oc	CC.	tom week					-	920	
The state of the s	elling Units X		300 Btuh		and the						1,600	
	_	[ſ		
Infiltration: 1.076 X 0 Air Sensible CFM	.00 X 157.77 ELA	X	6 △T		aller sister						0	
TOTAL HOURLY SENSIBLE HEAT	T GAIN FOR RO	MC									27,656	
Latent Gain											Btu/hr	
Occupants 4 O	ccupants x	20	00 Btuh/occ	С.	=					Bridge and Color	800	
,	*	p								-		
	.00 x 157.77	x 0	.00000								C	
Infiltration: 4,822 X 0 Air Latent CFM	.00 X 157.77 ELA											
	ELA		△W	III TANKA MARANA	ocazy swarz szona nysos	I I I I I I I I I I I I I I I I I I I		-		Mandichina	800	