CERTIFIED TEST AND BALANCE REPORT

PSF Mechanical, Inc.
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Project Name: Catalina T.I.

PSF Job #: 2474

Project Address: 2350 Carillon Point
Kirkland, WA 98033

Customer: GLY Construction

Engineer Name: Raymund Ramirez

TAB Supervisor: Chris Grantham

Date: 5.10.16

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-308
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Interior Office	1	CD	8x8	100		93	93%	
Interior Office	2	CD	8x8	100		102	102%	1
Interior Office	3		8x8	100		98	98%	
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	300		293	98%	
HEAT K.W. : -	**AMPS :** -		**PRIMARY MAX**	300		293	98%	
	VOLTS: -		**PRIMARY MIN**	100		100	100%	
FAN SPEED : -			**FAN HEAT CFM**	-		-	-	

BOX I.D. : VAV-309
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Office Area	1		8x8	100	55	108	108%	
Perimeter Office Area	2	CD	10x10	250	130	260	104%	
Perimeter Office Area	3	CD	10x10	250	205	255	102%	
Perimeter Office Area	4	CD	10x10	250	125	235	94%	
Perimeter Office Area	5	CD	10x10	250	120	235	94%	
	6							
	7							
	8							
	9							
INLET SIZE : 14	**F/C :**		**BOX TOTAL**	1100	635	1093	99%	
HEAT K.W. : -	**AMPS :** 25.5		**PRIMARY MAX**	1100		1100	100%	
	VOLTS: 275 / 1		**PRIMARY MIN**	490		490	100%	
FAN SPEED : Low			**FAN HEAT CFM**	1100		1,425	130%	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-310
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Office	1	CD	8x8	140	55	138	99%	1
Perimeter Office	2	CD	8x8	140	200	137	98%	
Perimeter Office	3	CD	8x8	140	120	143	102%	
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	**420**	**375**	**418**	**100%**	
HEAT K.W. : 4.0	**AMPS :** 14.7		**PRIMARY MAX**	420		420	**100%**	
	VOLTS: 274 / 1		**PRIMARY MIN**	280		280	**100%**	
FAN SPEED : Low			**FAN HEAT CFM**	420		570	**136%**	

BOX I.D. : VAV-353
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
	1	SWG	8x10	200	275	220	110%	
	2		8x10	200	235	185	93%	1
	3		8x10	100	115	110	110%	
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	**500**	**625**	**515**	**103%**	
HEAT K.W. : -	**AMPS :** -		**PRIMARY MAX**	500		515	**103%**	
	VOLTS: -		**PRIMARY MIN**	200		200	**100%**	
FAN SPEED : -			**FAN HEAT CFM**	-		-		

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-354
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Office	1	CD	8	200	295	208	104%	
Perimeter Office	2	CD	8	200	265	196	98%	
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	400	560	404	101%	
HEAT K.W. : 3.5	**AMPS :**	12	**PRIMARY MAX**	400		404	101%	
	VOLTS:	277 / 1	**PRIMARY MIN**	250		250	100%	
FAN SPEED : Low			**FAN HEAT CFM**	400		400	100%	

BOX I.D. : VAV-355
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Interior Office	1	CD	8	100		100	100%	
Interior Office	2	CD	8	100		108	108%	
Interior Office	3	CD	8	100		98	98%	1
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	300		306	102%	
HEAT K.W. : -	**AMPS :**	-	**PRIMARY MAX**	300		306	102%	
	VOLTS:	-	**PRIMARY MIN**	100		100	100%	
FAN SPEED : -			**FAN HEAT CFM**	-		-	-	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

PSFMechanical INC.

NEBB

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-356
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Office Area	1	CD	10x10	220	250	225	102%	
Perimeter Office Area	2	CD	10x10	220	224	215	98%	
Perimeter Office Area	3	CD	10x10	220	202	220	100%	
Perimeter Office Area	4	CD	10x10	220	134	205	93%	1
Perimeter Office Area	5	CD	10x10	220	100	220	100%	
	6							
	7							
	8							
	9							
INLET SIZE : 12	**F/C :**		**BOX TOTAL**	1100	910	1085	99%	
HEAT K.W. : 7.0	**AMPS :** 24.7		**PRIMARY MAX**	1100		1100	100%	
	VOLTS: 276 / 1		**PRIMARY MIN**	490		490	100%	
FAN SPEED : High			**FAN HEAT CFM**	1100		605	55%	

BOX I.D. : VAV-357
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Interior Office	1	CD	8	100		109	109%	
Interior Office	2	CD	8	100		103	103%	
Interior Office	3	CD	8	100		99	99%	
Interior Office	4	CD	8	100		100	100%	
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	400		411	103%	
HEAT K.W. : -	**AMPS :** -		**PRIMARY MAX**	400		411	103%	
	VOLTS: -		**PRIMARY MIN**	200		200	100%	
FAN SPEED : -			**FAN HEAT CFM**	-		-	-	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-358
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Interior Office	1	CD	8x8	100		103	103%	1
Interior Office	2	CD	8x8	100		104	104%	1
Interior Office	3	CD	8x8	100		96	96%	
Interior Office	4	CD	8x8	100		103	103%	
Interior Office	5	CD	8x8	100		104	104%	
Interior Office	6	CD	8x8	100		108	108%	
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	600		618	103%	
HEAT K.W. : -	**AMPS :**	-	**PRIMARY MAX**	600		618	103%	
	VOLTS:	-	**PRIMARY MIN**	300		300	100%	
FAN SPEED : -			**FAN HEAT CFM**	-		-	-	

BOX I.D. : VAV-360
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Corner Office	1	CD	12x12	400	750	400	100%	
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	400	750	400	100%	
HEAT K.W. : 4.0	**AMPS :**	14.2	**PRIMARY MAX**	400		400	100%	
	VOLTS:	282 / 1	**PRIMARY MIN**	280		280	100%	
FAN SPEED : Low			**FAN HEAT CFM**	400		600	150%	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

PSFMechanical INC.

NEBB

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-361
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Open Office	1	CD	10x10	350	500	365	104%	
Perimeter Open Office	2	CD	10x10	350	440	346	99%	
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	700	940	711	102%	
HEAT K.W. : 6.0	**AMPS :**	21.6	**PRIMARY MAX**	700		700	100%	
	VOLTS:	276 / 1	**PRIMARY MIN**	420		420	100%	
FAN SPEED : Low			**FAN HEAT CFM**	700	670	670	96%	

BOX I.D. : VAV-362
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Open Office	1	CD	10x10	250	315	275	110%	
Perimeter Open Office	2	CD	10x10	250	295	270	108%	
Perimeter Open Office	3	CD	10x10	250	240	235	94%	1
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	750	850	780	104%	
HEAT K.W. : 5.0	**AMPS :**	18	**PRIMARY MAX**	750		780	104%	
	VOLTS:	281 / 1	**PRIMARY MIN**	350		350	100%	
FAN SPEED : Low			**FAN HEAT CFM**	750		710	95%	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

PSFMechanical INC.

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D.: VAV-363									
MODEL #: ENVIROTEC		OUTLET			AIRFLOW CFM (l/s)			% OF DESIGN	RMKS.
SERIAL #: -									
AREA SERVED		NO.	TYPE	SIZE	DESIGN	PRELIM.	FINAL		
Perimeter Open Office		1	CD	10x10	250	345	255	102%	
Perimeter Open Office		2	CD	10x10	250	325	260	104%	
Perimeter Open Office		3	CD	8x8	200	190	182	91%	1
		4							
		5							
		6							
		7							
		8							
		9							
INLET SIZE: 8	F/C:		BOX TOTAL		700	860	697	100%	
HEAT K.W.: 6.0	AMPS:	21.2	PRIMARY MAX		700		700	100%	
	VOLTS:	276 / 1	PRIMARY MIN		420		420	100%	
FAN SPEED: Low			FAN HEAT CFM		700		1000	143%	

BOX I.D.: VAV-364									
MODEL #: ENVIROTEC		OUTLET			AIRFLOW CFM (l/s)			% OF DESIGN	RMKS.
SERIAL #: -									
AREA SERVED		NO.	TYPE	SIZE	DESIGN	PRELIM.	FINAL		
Perimeter Office		1	CD	10x10	230		235	102%	
Perimeter Office		2	CD	10x10	230		235	102%	
Perimeter Office		3	CD	10x10	230		215	93%	
		4							
		5							
		6							
		7							
		8							
		9							
INLET SIZE: 12	F/C:		BOX TOTAL		690		685	99%	
HEAT K.W.: 6.0	AMPS:		PRIMARY MAX		690		685	99%	
	VOLTS:		PRIMARY MIN		420		420	100%	
FAN SPEED: Low			FAN HEAT CFM		690		-	-	2

REMARKS

(1) Wide Open Path

(2): Unable to get box to go into heating; seems that there is an override on the front end.

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

PSFMechanical INC.

NEBB

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-371
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Office	1	CD	10x10	260	290	255	98%	
Perimeter Office	2	CD	10x10	260	320	275	106%	
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 10	**F/C :**		**BOX TOTAL**	520	610	530	102%	
HEAT K.W. :	**AMPS :**	14.3	**PRIMARY MAX**	520		530	102%	
	VOLTS:	279 / 1	**PRIMARY MIN**	280		280	100%	
FAN SPEED : Low			**FAN HEAT CFM**	520		530	102%	

BOX I.D. : VAV-390
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Break Area	1	SWG	10x8	170		175	103%	
Break Area	2	SWG	10x8	170		170	100%	
Break Area	3	SWG	10x8	170		165	97%	1
Break Area	4	SWG	10x8	170		165	97%	1
Break Area	5	SWG	10x8	170		175	103%	
	6							
	7							
	8							
	9							
INLET SIZE : 10	**F/C :**		**BOX TOTAL**	850		850	100%	
HEAT K.W. :	**AMPS :**	18	**PRIMARY MAX**	850		850	100%	
	VOLTS:	279 / 1	**PRIMARY MIN**	400		400	100%	
FAN SPEED : Low			**FAN HEAT CFM**	850		785	92%	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-392
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Interior Open Work Area	1	SWG	8x8	150		140	93%	
Interior Open Work Area	2	SWG	8x8	150		155	103%	
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	F/C :		BOX TOTAL	300		295	98%	
HEAT K.W. : -	AMPS : -		PRIMARY MAX	300		295	98%	
-	VOLTS: -		PRIMARY MIN	100		100	100%	
FAN SPEED : -			FAN HEAT CFM	-		-	-	

BOX I.D. : VAV-392A
MODEL #: ENVIROTEC SDR
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Reception Area	1	LD-1	8	125	150	130	104%	
Reception Area	2	LD-1	8	125	170	130	104%	
Reception Area	3	LD-1	8	125	150	125	100%	
Reception Area	4	LD-1	8	125	160	130	104%	
Copy/ Work	5	CD	8	100	122	100	100%	
	6							
	7							
	8							
	9							
INLET SIZE : 8	F/C :		BOX TOTAL	600	752	615	103%	
HEAT K.W. : -	AMPS : -		PRIMARY MAX	600		615	103%	
	VOLTS: -		PRIMARY MIN	300		300	100%	
FAN SPEED : -			FAN HEAT CFM	-		-	-	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-392B
MODEL #: ENVIROTEC SDR
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Conference Rm.	1	CD	10	200	135	186	93%	1
Conference Rm.	2	CD	10	200	241	208	104%	
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 6	**F/C :**		**BOX TOTAL**	400	376	394	99%	
HEAT K.W. : -	**AMPS :** -		**PRIMARY MAX**	400		394	99%	
	VOLTS: -		**PRIMARY MIN**	200		200	100%	
FAN SPEED : -			**FAN HEAT CFM**	-		-	-	

BOX I.D. : VAV-392C
MODEL #: ENVIROTEC VFR
SERIAL #: -

AREA SERVED	OUTLET NO.	TYPE	SIZE	AIRFLOW CFM (l/s) DESIGN	PRELIM.	FINAL	% OF DESIGN	RMKS.
Perimeter Office	1	CD	8x8	200		206	103%	
Perimeter Office	2	CD	8x8	200		197	99%	
	3							
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 6	**F/C :**		**BOX TOTAL**	400		403	101%	
HEAT K.W. : 1.5	**AMPS :** 5.4		**PRIMARY MAX**	400		403	101%	
	VOLTS: 279 / 1		**PRIMARY MIN**	200		200	100%	
FAN SPEED : Low			**FAN HEAT CFM**	400		440	110%	

REMARKS

(1) Wide Open Path

Date: 5.10.16 Readings by: CG

VAV AIR OUTLET TEST REPORT

Project Catilina TI
System 3rd Floor VAV Zones
Box Type Envirotech - Pressure Independent VAV, Parralel Fan Heat

BOX I.D. : VAV-393
MODEL #: ENVIROTEC
SERIAL #: -

AREA SERVED	OUTLET NO.	OUTLET TYPE	OUTLET SIZE	AIRFLOW CFM (l/s) DESIGN	AIRFLOW CFM (l/s) PRELIM.	AIRFLOW CFM (l/s) FINAL	% OF DESIGN	RMKS.
Copy	1	CD	10	200	217	217	109%	
Corridor	2	LD-1	8	150	160	160	107%	
Corridor	3	LD-1	8	150	155	155	103%	
	4							
	5							
	6							
	7							
	8							
	9							
INLET SIZE : 8	**F/C :**		**BOX TOTAL**	500	532	532	106%	
HEAT K.W. : -	**AMPS :** -		**PRIMARY MAX**	500		532	106%	
	VOLTS: -		**PRIMARY MIN**	200		200	100%	
FAN SPEED : -			**FAN HEAT CFM**	-		-	-	

REMARKS

(1) Wide Open Path

Date: 5.10.16

Readings by: CG

AIR OUTLET TEST REPORT

Project : Catilina TI
System : Misc. Small Systems
Service : Break Rm. - Existing Server Rm.

AREA SERVED	OUTLET			AIRFLOW CFM (l/s)			% OF DESIGN	RMKS
	NO.	TYPE	SIZE	DESIGN	PRELIM	FINAL		
EF-301								
Break Area	1	EG	12x8	240	255	255	**106%**	(1)
HP-301								
Existing Server Rm.	1	CD	14	600		630	**105%**	(2)
Existing Server Rm.	2		14	600		600	**100%**	(2)

REMARKS

(1): Fan speed set to "8" on local speed controller.

(2): Existing Heat Pump, no design cfm given.

Date: 5.10.16 Readings By: CG