AECOM
999 Town and Country Road
Orange, CA 92868
aecom.com

November 5, 2021

Mr. Michael Schulman
United States Environmental
Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Responses to October 7, 2021 letter regarding EPA Site Visit and Vapor Instrusion Field Assessment, 825 Stewart Drive, Sunnyvale, CA, TRW Microwave Superfund Site (CERCLIS ID# CAD009159088)

Dear Mr. Schulman

AECOM, on behalf of Northrop Grumman, has prepared the following responses to your letter dated October 7, 2021 regarding observations made during the site visit.

- **USEPA Comment - SSD System Vent Pipes:** From Matt Plate's visual inspection on the roof, four of the SSDS exhaust vents are approximately 10-feet of the HVAC's intakes vents and lower or at a comparable height to the intakes. This distance is an acceptable building code distance; however, a distance greater than 10-feet and/or a height that is elevated above the building ventilation system components need to be considered as the SSD system mayvent low concentrations of site contaminants of concern outside, creating the potential for contaminates to be pulled into the HVAC intakes and into the building. This scenario and potential impacts to indoor air quality need to be evaluated and mitigated and EPA asks NGC to provide a proposal to do so. As the interior SSD system vertical vent pipes cannotbe easily moved and rerouting of piping on the roof may compromise the effectiveness of the passive SSD system, consideration needs to be given to extending the height of vent pipes. For vent pipes that cannot be extended (e.g., under the east building chiller), consideration should be given to rerouting the vent pipes away from HVAC intakes and converting the SSD system to an active system with a blower fan.

  NGC Response: NGC will consult with the engineer of record for the design and evaluate what changes may be necessary to the roof vents for the SSD system.

- **USEPA Comment - HVAC Operation:** EPA's observations of the HVAC system and pressures within the building were limited to the day of the site visit and the operation of the building at the time. While a balanced HVAC system was observed maintaining a positive pressure, EPA requests that HVAC and building test and balance information for the HVAC systems be provided to EPA to confirm this.

  NGC Response: NGC reached out to the building tenant, Apple, for the requested information. The HVAC test and balance report they provided is included as an attachment to this letter.

- **USEPA Comment: Sub-slab Sampling Ports:** The historical concrete sub-slab vapor sampling ports, left in place, have not been regularly sampled or maintained and several could not be located (SS-10 and SS-11). These ports need to be located and maintained where future sub-slab sampling will be conducted, or decommissioned if a justification is provided that the ports

are no longer needed. EPA also requests an updated figure for the building showing all sub-slab vapor sampling port locations including measurements from exterior and interiorwalls, their ID names, and callouts presenting historical VOC detections. The figure used to locate the sub-slab ports in the field only showed approximate locations.

NGC Response: NGC will prepare a figure as requested. However, please note that exact measurements may not be possible, as the locations were not formally surveyed and the interior configuration of the building has changed multiple times both pre-installation of the more recent locations and after the most recent sampling event was performed.

- **SSD System Maintenance and Inspections:** In May 2021 GES, on behalf of NGC, prepared the first Annual Maintenance Inspection memorandum for the 825 Steward AveSSD System. The memorandum documented a November 2020 inspection and NGC prepared the memorandum to address the 2019 EPA Five Year Review Report recommendation to incorporate "long-term stewardship measures for the current vapor mitigation measures in place." EPA asks that NGC document in a work plan or technicalmemorandum the scope of the annual SSD system maintenance inspections, including how and when the inspections will be reported to EPA.

  NGC Response: NGC will prepare a technical memo to document the scope of the SSD system maintenance. The results of each inspection will be included in the annual groundwater monitoring reports submitted to USEPA.

If you have any questions or would like to discuss, please contact the Northrop Grumman Project Manager, Joshua Nandi at 310-912-8307 or Joshua.Nandi@ngc.com.

Yours sincerely,

Holly Holbrook
Project Manager
AECOM
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cc: Mr. Joshua Nandi, Northrop Grumman

Attachment: Test, Adjust & Balance Report for 825 Stewart Drive, Sunnyvale, CA

Silicon Valley Mechanical

2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

Test, Adjust & Balance Report

PROJECT: Apple SD01

ADDRESS: 825 Steward Dr.
Sunnyvale, CA. 94085

ARCHITECT: HGA

ENGINEER: Silicon Valley Mechanical

GENERAL CONTRACTOR: S.C. Builders

HVAC CONTRACTOR: Silicon Valley Mechanical

LEAD BALANCE TECHNICIAN: Scott McClung

DATE: 10/8/2015

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR SYMBOL SHEET

DATE: 10/8/2015

PROJECT: Apple SD01

PAGE: 1

	CFM	Cubic Feet Per Minute
	FPM	Feet Per Minute
	RPM	Revolutions Per Minute
	HP	Horse Power
	BHP	Brake Horse Power
	FLA	Full Load Amps
	SF	Service Factor
	" W.G.	Inches of Water gauge
	SP	Static Pressure
	TSP	Total Static Pressure
	ESP	External Static Pressure
	ΔP	Differential Pressure
	ΔT	Differential Temperature
	°F	Degree Fahrenheit
	°C	Degree Celcius
	CD	Ceiling Diffuser
	CS	Ceiling Supply
	CR	Ceiling Return
	WS	Wall Suppy
	WR	Wall Return
	CE	Ceiling Exhaust
	WE	Wall Exhaust
	EDS	Exposed Duct Supply
	ODUCT	Open Duct
	DSOX	Duct Sox
	LSD	Linear Slot Diffuser
	HEPA	High Efficiency Particulate Air Filter
	FP-HEPA	Fan Powered-High Efficiency Particulate Air Filter
	DNA	Data Not Available
	DNL	Data Not Listed
	NA	Not Applicable
	LOA	Lack of Access
	NI	Not Installed

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

WATER SYMBOL SHEET

DATE: 10/8/2015

PROJECT: Apple SD01

PAGE: 2

GPM	Gallons Per Minute
FPM	Feet Per Minute
RPM	Revolutions Per Minute
HP	Horse Power
BHP	Brake Horse Power
FLA	Full Load Amps
SF	Service Factor
SP	Static Pressure
°F	Degree Fahrenheit
°C	Degree Celcius
DB	Dry Bulb
WB	Wet Bulb
RH	Relative Humidity
ΔT	Differential Temperature
MAT	Mixed Air Temperature
EAT	Entering Air Temperature
LAT	Leaving Air Temperature
EWT	Entering Water Temperature
PSIG	Pound Per Square Inch Gauge
W.G.	Water Gauge
ΔP	Differential Pressure
FT HEAD	Feet of Head
NPSH	Net Positive Suction Head
Cv	Flow Coefficient
DNA	Data Not Available
DNL	Data Not Listed
NA	Not Applicable
LOA	Lack of Access
NI	Not Installed

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

GENERAL NOTES

DATE: 10/8/2015

PROJECT: Apple SD01

PAGE: 3

1	Unless otherwise noted, indicated CFM (Cubic Feet per Minute) is a standard condition.
2	Unless otherwise noted, indicated GPM (Gallons per Minute) is a standard condition.
3	Unless otherwise noted, all sizes are measured in inches.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/25/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 4

EQUIPMENT DATA	AC-A1		AC-A2	
LOCATION	ROOF BLDG A		ROOF BLDG A	
SERVICE	BLDG A		BLDG A	
MANUFACTURER	DAIKIN		DAIKIN	
MODEL NUMBER	MPS040F		MPS040F	
SERIAL NUMBER	234116		234116	
FAN DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (1)**
TOTAL AIR CFM	16000	15014	16000	15401
RETURN AIR CFM	DNA	NM	DNA	NM
OUTSIDE AIR CFM	835	1812 (2)	835	1936 (2)
RPM	1269	1287	1269	1288
ESP " W.G.	1.50	2.22	1.50	2.22
DISCHARGE SP " W.G.	DNA	1.48	DNA	1.55
SUCTION SP " W.G.	DNA	0.74	DNA	0.67
COIL ΔP " W.G.	DNA	0.51	DNA	0.49
FILTER ΔP " W.G.	DNA	0.04	DNA	0.04
MOTOR DATA	**NAMEPLATE**	**TESTED (3)**	**NAMEPLATE**	**TESTED (3)**
MOTOR MFG / FRAME	DAIKIN / 215T		DAIKIN / 215T	
HORSEPOWER	10		10	
RPM	1770	1774	1770	1775
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	12.5 / 1.15	12.5	12.5 / 1.15	12.1
NO. BELT / SIZE	1 / B98		1 / B98	
MOTOR SHEAVE x BORE	BK90H x H 1-3/8		BK90H x H 1-3/8	
FAN SHEAVE x BORE	1B5V124 x B1-15/16		1B5V124 x B1-15/16	
NO. FILTER / TYPE / SIZE	4 / PLEATED / 18 x 24 x 2 8 / PLEATED / 24 x 24 x 2		4 / PLEATED / 18 x 24 x 2 8 / PLEATED / 24 x 24 x 2	

REMARKS :

(1) Final tested data taken with motor VFD at 60Hz.

(2) Outside air dampers 100% closed, excess is due to leakage.

(3) Final tested motor data taken from VFD.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 5

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-A35	14 / 1.07	59	0.48	2.825	1840	550	NA	
VAV-A36	14 / 1.07	54	-0.32	0.923	1680	504	NA	
VAV-A37	14 / 1.07	55	0.04	1.455	2000	600	600	
VAV-A38	12 / 0.79	60	-0.49	2.759	1200	360	360	
VAV-A39	12 / 0.79	56	-0.47	2.275	1460	438	438	
VAV-A40	12 / 0.79	52	-0.21	2.481	1460	438	438	
VAV-A41	14 / 1.07	50	0.27	1.627	1900	570	570	
VAV-A42	14 / 1.07	49	-0.32	2.481	1900	570	570	
VAV-A43	14 / 1.07	48	-0.18	1.627	2000	600	600	
VAV-A44	14 / 1.07	46	-0.90	1.976	1920	576	576	
VAV-A46	16 / 1.40	45	-0.43	2.087	2680	804	NA	
VAV-A47	14 / 1.07	44	0.42	2.126	2000	600	600	
VAV-A52	6 / 0.20	47	0.34	3.267	60	18	18	
VAV-A53	14 / 1.07	53	-0.57	2.308	1990	600	NA	
VAV-A54	6 / 0.20	51	-0.26	2.990	300	100	100	
VAV-A61	6 / 0.20	58	-0.27	3.773	180	55	NA	
VAV-A62	6 / 0.20	57	-0.38	1.595	300	90	NA	
VAV-A63	10 / 0.55	254	-0.21	2.294	1200	360	NA	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 6

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2016	1	EDS	24 x 12	DNA	NA	920	330	195	NA	935	
2016	2	EDS	24 x 12	DNA	NA	920	525	310	NA	1005	
VAV- A35	TOTAL			550	NA	1840	855	505	NA	1940	
2015	1	EDS	12 x 10	DNA	NA	280	300	64	NA	255	
2015	2	EDS	12 x 10	DNA	NA	280	310	69	NA	265	
2015	3	EDS	12 x 10	DNA	NA	280	395	90	NA	265	
2015	4	EDS	12 x 10	DNA	NA	280	465	84	NA	280	
2015	5	EDS	12 x 10	DNA	NA	280	495	73	NA	280	
2015	6	EDS	12 x 10	DNA	NA	280	490	88	NA	265	
VAV-A36	TOTAL			504	NA	1680	2455	468	NA	1615	
2015	1	EDS	22 x 12	DNA	DNA	500	360	105	105	450	
2015	2	EDS	22 x 12	DNA	DNA	500	490	130	130	460	
2015	3	EDS	22 x 12	DNA	DNA	500	645	150	150	485	
2015	4	EDS	22 x 12	DNA	DNA	500	625	155	155	505	
VAV-A37	TOTAL			600	600	2000	2120	540	540	1900	
2015	1	EDS	22 x 12	DNA	DNA	600	630	190	190	630	
2015	2	EDS	22 x 12	DNA	DNA	600	650	175	175	650	
VAV-A38	TOTAL			360	360	1200	1280	365	365	1280	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 7

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2021	1	CD	12	DNA	DNA	365	490	120	120	390	
2021	2	CD	12	DNA	DNA	365	355	95	95	345	
2021	3	CD	12	DNA	DNA	365	535	115	115	355	
2021	4	CD	12	DNA	DNA	365	280	100	100	380	
VAV-A39	**TOTAL**			**438**	**438**	**1460**	**1660**	**430**	**430**	**1470**	
2021	1	CD	12	DNA	DNA	365	455	110	110	390	
2021	2	CD	12	DNA	DNA	365	460	100	100	340	
2021	3	CD	12	DNA	DNA	365	305	100	100	340	
2021	4	CD	12	DNA	DNA	365	400	105	105	380	
VAV-A40	**TOTAL**			**438**	**438**	**1460**	**1620**	**415**	**415**	**1450**	
2024	1	CD	12	DNA	DNA	475	160	125	125	445	
2024	2	CD	12	DNA	DNA	475	535	140	140	485	
2024	3	CD	12	DNA	DNA	475	485	155	155	515	
2024	4	CD	12	DNA	DNA	475	770	140	140	475	
VAV-A41	**TOTAL**			**570**	**570**	**1900**	**1950**	**560**	**560**	**1920**	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 8

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2024	1	CD	12	DNA	DNA	475	530	155	155	520	
2024	2	CD	12	DNA	DNA	475	630	145	145	520	
2024	3	CD	12	DNA	DNA	475	505	150	150	510	
2024	4	CD	12	DNA	DNA	475	480	125	125	465	
VAV-A42	TOTAL			570	570	1900	2145	575	575	2015	
2006	1	CD	12	DNA	DNA	500	575	165	165	545	
2006	2	CD	12	DNA	DNA	500	615	150	150	495	
2006	3	CD	12	DNA	DNA	500	525	135	135	480	
2006	4	CD	12	DNA	DNA	500	560	165	165	470	
VAV-A43	TOTAL			600	600	2000	2275	615	615	1990	
2006	1	CD	10	DNA	DNA	480	575	150	150	480	
2006	2	CD	10	DNA	DNA	480	575	150	150	480	
2006	3	CD	10	DNA	DNA	480	475	135	135	440	
2006	4	CD	10	DNA	DNA	480	575	160	160	520	
VAV-A44	TOTAL			576	576	1920	2200	595	595	1920	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 9

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2005	1	CD	10	DNA	NA	335	355	115	NA	350	
2005	2	CD	10	DNA	NA	335	305	100	NA	310	
2005	3	CD	10	DNA	NA	335	335	110	NA	325	
2005	4	CD	10	DNA	NA	335	235	105	NA	340	
2005	5	CD	10	DNA	NA	335	385	89	NA	340	
2005	6	CD	10	DNA	NA	335	355	100	NA	365	
2005	7	CD	10	DNA	NA	335	370	95	NA	355	
2005	8	CD	10	DNA	NA	335	140	91	NA	330	
VAV-A46	**TOTAL**			**804**	**NA**	**2680**	**2480**	**805**	**NA**	**2715**	
2005	1	CD	12	DNA	DNA	500	460	150	150	500	
2005	2	CD	12	DNA	DNA	500	430	140	140	465	
2005	3	CD	12	DNA	DNA	500	460	150	150	495	
2005	4	CD	12	DNA	DNA	500	450	150	150	495	
VAV-A47	**TOTAL**			**600**	**600**	**2000**	**1800**	**590**	**590**	**1955**	
2014	1	CD	6	18	18	60	57	17	17	57	
VAV-A52	**TOTAL**			**18**	**18**	**60**	**57**	**17**	**17**	**57**	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-A1 & AC-A2 PAGE: 10

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2022	1	SW	20 x 20	600	NA	1990	1860	620	NA	2030	
VAV-A53	TOTAL			600	NA	1990	1860	620	NA	2030	
2023	1	CD	8	DNA	DNA	150	155	47	47	155	
2023	2	CD	8	DNA	DNA	150	165	60	60	165	
VAV-A54	TOTAL			100	100	300	320	107	107	320	
2019	1	CD	6	DNA	NA	90	43	25	NA	88	
2018	2	CD	6	DNA	NA	90	88	33	NA	92	
VAV-A61	TOTAL			55	NA	180	131	58	NA	180	
2016	1	EDS	6 x 6	90	NA	300	290	95	NA	290	
VAV-A62	TOTAL			90	NA	300	290	95	NA	290	
2017	1	CD	12	360	NA	1200	1130	370	NA	1230	
VAV-A63	TOTAL			360	NA	1200	1130	370	NA	1230	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AC-A3 PAGE: 11

EQUIPMENT DATA	AC-A3			
LOCATION	ROOF BLDG A			
SERVICE	BLDG A 1ST & 2ND FLR			
MANUFACTURER	TRANE			
MODEL NUMBER	THH180			
SERIAL NUMBER	153210404D			
FAN DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL AIR CFM	6000	5565		
RETURN AIR CFM	DNA	NM		
OUTSIDE AIR CFM	465	500		
RPM	690	635		
ESP " W.G.	1.00	1.34		
DISCHARGE SP " W.G.	DNA	1.33		
SUCTION SP " W.G.	DNA	0.01		
COIL ΔP " W.G.	DNA	0.03		
FILTER ΔP " W.G.	DNA	0.02		
MOTOR DATA	**NAMEPLATE**	**TESTED (1)**	**NAMEPLATE**	**TESTED**
MOTOR MFG / FRAME	MARATHON / 56HZ			
HORSEPOWER	3			
RPM	1725	1750		
VOLTAGE / PHASE	460 / 3	460		
AMPERAGE / SF	4.6 / 1.15	2.11		
NO. BELT / SIZE	1 / BX77			
MOTOR SHEAVE x BORE	1VL50 x 7/8			
FAN SHEAVE x BORE	BK110 x 1-3/16			
NO. FILTER / TYPE / SIZE	12 / PLEATED / 20 x 20 x 2			

REMARKS :

(1) Tested data taken from VFD.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AC-A3 PAGE: 12

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-A14	12 / 0.79	20	-1.55	2.292	1500	450	450	
VAV-A16	8 / 0.35	25	0.14	1.960	600	180	180	
VAV-A21	12 / 0.79	23	0.07	2.563	1700	509	509	
VAV-A33	12 / 0.79	19	0.01	2.989	900	270	270	
VAV-A50	8 / 0.35	43	0.34	2.574	465	140	140	
VAV-A51	6 / 0.20	42	0.03	3.278	230	27	NA	
VAV-A59	6 / 0.20	22	0.07	2.250	300	92	92	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

SYSTEM: AC-A3 PAGE: 13

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1000	1	EDS	16 x 16	DNA	DNA	500	300	120	120	450	
1000	2	EDS	16 x 16	DNA	DNA	500	450	150	150	495	
1000	3	EDS	16 x 16	DNA	DNA	500	450	140	140	465	
VAV-A14	**TOTAL**			**450**	**450**	**1500**	**1200**	**410**	**410**	**1410**	
1205A	1	CD	12	180	180	600	735	185	185	650	
VAV-A16	**TOTAL**			**180**	**180**	**600**	**735**	**185**	**185**	**650**	
1011	1	CD	6	DNA	DNA	80	80	37	37	87	
1012	2	CD	6	DNA	DNA	60	70	28	28	65	
1013	3	CD	6	DNA	DNA	60	65	26	26	64	
1010	4	SW	18 x 18	DNA	DNA	750	500	210	210	685	
1010	5	SW	18 x 18	DNA	DNA	750	690	200	200	680	
VAV-A21	**TOTAL**			**509**	**509**	**1700**	**1400**	**501**	**501**	**1581**	
1023	1	EDS	12 x 24	DNA	DNA	450	600	140	140	475	
1023	2	EDS	12 x 24	DNA	DNA	450	310	105	105	425	
VAV-A33	**TOTAL**			**270**	**270**	**900**	**910**	**245**	**245**	**900**	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

SYSTEM: AC-A3 PAGE: 14

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2004	1	CD	12	140	140	465	480	150	150	480	
VAV-A50	TOTAL			140	140	465	480	150	150	480	
2002	1	CD	6	DNA	NA	115	91	13	NA	115	
2003	2	CD	6	DNA	NA	115	90	16	NA	115	
VAV-A51	TOTAL			27	NA	230	181	29	NA	230	
1004	1	SW	14 x 14	92	92	300	350	87	87	305	
VAV-A59	TOTAL			92	92	300	350	87	87	305	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/25/2015

SYSTEM: AC-A4 PAGE: 15

EQUIPMENT DATA	AC-A4			
LOCATION	ROOF BLDG A			
SERVICE	IDF			
MANUFACTURER	TRANE			
MODEL NUMBER	THC092F			
SERIAL NUMBER	153210847L			
FAN DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL AIR CFM	3000	1990		
RETURN AIR CFM	DNA	NM		
OUTSIDE AIR CFM	15	463 (2)		
RPM	1210	NM		
ESP " W.G.	1.00	0.27		
DISCHARGE SP " W.G.	DNA	0.17		
SUCTION SP " W.G.	DNA	0.10		
COIL ΔP " W.G.	DNA	0.08		
FILTER ΔP " W.G.	DNA	0.16		
MOTOR DATA	**NAMEPLATE (1)**	**TESTED**	**NAMEPLATE**	**TESTED**
MOTOR MFG / FRAME	DNA			
HORSEPOWER	3.60			
RPM	DNA	HIGH SPEED		
VOLTAGE / PHASE	460 / 3	490 / 490 / 491		
AMPERAGE / SF	4.3 / DNA	0.5 / 0.7 / 0.5		
NO. BELT / SIZE	DIRECT DRIVE			
MOTOR SHEAVE x BORE	DIRECT DRIVE			
FAN SHEAVE x BORE	DIRECT DRIVE			
NO. FILTER / TYPE / SIZE	4 / PLEATED / 20 x 25 x 2			

REMARKS :

(1) No access to motor, data taken from unit nameplate.

(2) Outside air damper 100% closed, excess due to leakage.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/25/2015

SYSTEM: AC-A4 PAGE: 16

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
2022	1	EDS	24 x 12	995	870		930	
2022	2	EDS	24 x 12	995	1000		1060	
AC-A4	TOTAL			1990	1870		1990	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AC-A5 PAGE: 17

EQUIPMENT DATA	AC-A5			
LOCATION	ROOF BLDG A			
SERVICE	BLDG A 2ND FLR			
MANUFACTURER	TRANE			
MODEL NUMBER	THH180			
SERIAL NUMBER	153210420D			
FAN DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED**
TOTAL AIR CFM	6000	5825		
RETURN AIR CFM	DNA	NM		
OUTSIDE AIR CFM	285	300		
RPM	688	506		
ESP " W.G.	1.00	1.10		
DISCHARGE SP " W.G.	DNA	1.02		
SUCTION SP " W.G.	DNA	0.08		
COIL ΔP " W.G.	DNA	0.10		
FILTER ΔP " W.G.	DNA	0.12		
MOTOR DATA	**NAMEPLATE**	**TESTED (2)**	**NAMEPLATE**	**TESTED**
MOTOR MFG / FRAME	MARATHON / 56HZ			
HORSEPOWER	3			
RPM	1725	1555		
VOLTAGE / PHASE	460 / 3	414		
AMPERAGE / SF	4.6 / 1.15	2.0		
NO. BELT / SIZE	1 / BX77			
MOTOR SHEAVE x BORE	VL40 x 7/8			
FAN SHEAVE x BORE	BK110 x 1-3/16			
NO. FILTER / TYPE / SIZE	12 / PLEATED / 20 x 20 x 2			

REMARKS :

(1) Final tested data taken with motor VFD at 54Hz.

(2) Tested data taken from VFD.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/28/2015

SYSTEM: AC-A5 PAGE: 18

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-A48	12 / 0.79	21	0.18	1.771	1060	318	318	
VAV-A49	10 / 0.55	18	-0.31	3.459	500	150	150	
VAV-A63	16 / 1.40	61	0.39	1.109	1920	460	NA	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: AC-A5 PAGE: 19

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
2000A	1	EDS	12 x 12	DNA	DNA	265	70	85	85	285	
2000A	2	EDS	12 x 12	DNA	DNA	265	315	92	92	290	
2000A	3	EDS	12 x 12	DNA	DNA	265	360	85	85	285	
2000A	4	EDS	12 x 12	DNA	DNA	265	455	83	83	275	
VAV-A48	TOTAL			318	318	1060	1260	345	345	1135	
2000B	1	EDS	10 x 10	DNA	DNA	80	185	45	45	88	
2000B	2	EDS	10 x 10	DNA	DNA	210	100	55	55	195	
2000B	3	EDS	10 x 10	DNA	DNA	210	200	60	60	210	
VAV-A49	TOTAL			150	150	500	485	150	150	493	
1000	1	EDS	14	DNA	NA	640	(1)	145	145	620	
1000	2	EDS	14	DNA	NA	640	(1)	145	145	630	
1000	3	EDS	14	DNA	NA	640	(1)	160	160	690	
(E) VAV-A63	TOTAL			460	NA	1920	2300	450	450	1940	

REMARKS:

(1) Pitot for total

Silicon Valley Mechanical
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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-B1 & AC-B2 PAGE: 20

EQUIPMENT DATA	AC-B1		AC-B2	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	BDLG B		BLDG B	
MANUFACTURER	DAIKIN		DAIKIN	
MODEL NUMBER	MPS050F		MPS050F	
SERIAL NUMBER	234116		234116	
FAN DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (1)**
TOTAL AIR CFM	18500	18490	18500	18160
RETURN AIR CFM	DNA	NM	DNA	NM
OUTSIDE AIR CFM	450	2576	450	2535
RPM	1414	1215	1414	1214
ESP " W.G.	1.50	1.17	1.50	1.55
DISCHARGE SP " W.G.	DNA	0.45	DNA	0.52
SUCTION SP " W.G.	DNA	0.72	DNA	1.03
COIL ΔP " W.G.	DNA	0.58	DNA	0.58
FILTER ΔP " W.G.	DNA	0.12	DNA	0.11
MOTOR DATA	**NAMEPLATE**	**TESTED (2)**	**NAMEPLATE**	**TESTED (2)**
MOTOR MFG / FRAME	DAIKIN / 254T		DAIKIN / 254T	
HORSEPOWER	15		15	
RPM	1765	1563	1765	1562
VOLTAGE / PHASE	460 / 3	405	460 / 3	405
AMPERAGE / SF	17.7 / 1.15	13.2	17.7 / 1.15	13.7
NO. BELT / SIZE	1 / 5VX930		1 / 5VX930	
MOTOR SHEAVE x BORE	1B5V70 x B 1-5/8		1B5V70 x B 1-5/8	
FAN SHEAVE x BORE	1B5V90 x B 1-15/16		1B5V90 x B 1-15/16	
NO. FILTER / TYPE / SIZE	4 / PLEATED / 18 x 24 x 2 8 / PLEATED / 24 x 24 x 2		4 / PLEATED / 18 x 24 x 2 8 / PLEATED / 24 x 24 x 2	

REMARKS :

(1) Final tested data taken with motor VFD at 53Hz.

(2) Final tested motor data taken from VFD.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/21/2015

SYSTEM: AC-B1 & AC-B2 PAGE: 21

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-B1	20 x 16 / 2.22	24	0.39	2.990	3300	990	990	
VAV-B2	24 x 16 / 2.67	23	-0.28	2.171	3600	1080	NA	
VAV-B3	24 x 16 / 2.67	26	-0.07	1.998	4290	1290	1290	
VAV-B4	24 x 16 / 2.67	25	0.52	2.328	3880	1165	NA	
VAV-B5	24 x 16 / 2.67	22	0.56	2.000	3880	1165	NA	
VAV-B6	12 / 0.79	21	0.08	2.869	1380	415	415	
VAV-B7	24 x 16 / 2.67	20	-0.21	2.000	4320	1300	NA	
VAV-B8	12 / 0.79	19	-0.48	2.990	1510	453	453	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-B1 & AC-B2 PAGE: 22

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1408	1	EDS	22 x 12	DNA	DNA	550	(1)	140	140	445	
1408	2	EDS	22 x 12	DNA	DNA	550	(1)	210	210	655	
1408	3	EDS	22 x 12	DNA	DNA	550	(1)	135	135	425	
1408	4	EDS	22 x 12	DNA	DNA	550	(1)	180	180	565	
1408	5	EDS	22 x 12	DNA	DNA	550	(1)	240	240	750	
1408	6	EDS	22 x 12	DNA	DNA	550	(1)	175	175	545	
VAV-B1	**TOTAL**			**990**	**990**	**3300**	**3385**	**1080**	**1080**	**3385**	
1409	1	EDS	26 x 20	DNA	NA	1800	(1)	530	NA	1705	
1409	2	EDS	26 x 20	DNA	NA	1800	(1)	535	NA	1715	
VAV-B2	**TOTAL**			**1080**	**NA**	**3600**	**3420**	**1065**	**NA**	**3420**	
1408	1	EDS	26 x 12	DNA	DNA	715	(1)	275	275	795	
1408	2	EDS	26 x 12	DNA	DNA	715	(1)	300	300	865	
1408	3	EDS	26 x 12	DNA	DNA	715	(1)	155	155	450	
1408	4	EDS	26 x 12	DNA	DNA	715	(1)	235	235	655	
1408	5	EDS	26 x 12	DNA	DNA	715	(1)	155	155	435	
1408	6	EDS	26 x 12	DNA	DNA	715	(1)	235	235	675	
VAV-B3	**TOTAL**			**1290**	**1290**	**4290**	**3905**	**1355**	**1355**	**3905**	

REMARKS:

(1) Pitot for total.

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/21/2015

SYSTEM: AC-B1 & AC-B2 PAGE: 23

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1408	1	EDS	22 x 12	DNA	NA	485	(1)	145	NA	495	
1408	2	EDS	22 x 12	DNA	NA	485	(1)	120	NA	415	
1408	3	EDS	22 x 12	DNA	NA	485	(1)	120	NA	410	
1408	4	EDS	22 x 12	DNA	NA	485	(1)	130	NA	450	
1408	5	EDS	22 x 12	DNA	NA	485	(1)	190	NA	640	
1408	6	EDS	22 x 12	DNA	NA	485	(1)	130	NA	440	
1408	7	EDS	22 x 12	DNA	NA	485	(1)	135	NA	465	
1408	8	EDS	22 x 12	DNA	NA	485	(1)	130	NA	445	
VAV-B4	**TOTAL**			**1165**	**NA**	**3880**	**3525**	**1110**	**NA**	**3760**	
1408	1	EDS	22 x 12	DNA	NA	485	(1)	125	NA	385	
1408	2	EDS	22 x 12	DNA	NA	485	(1)	125	NA	375	
1408	3	EDS	22 x 12	DNA	NA	485	(1)	125	NA	375	
1408	4	EDS	22 x 12	DNA	NA	485	(1)	130	NA	395	
1408	5	EDS	22 x 12	DNA	NA	485	(1)	150	NA	450	
1408	6	EDS	22 x 12	DNA	NA	485	(1)	205	NA	620	
1408	7	EDS	22 x 12	DNA	NA	485	(1)	175	NA	540	
1408	8	EDS	22 x 12	DNA	NA	485	(1)	200	NA	600	
VAV-B5	**TOTAL**			**1165**	**NA**	**3880**	**3740**	**1235**	**NA**	**3740**	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

SYSTEM: AC-B1 & AC-B2 PAGE: 24

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1410	1	CD	16	DNA	DNA	690	570	200	200	730	
1410	2	CD	16	DNA	DNA	690	570	210	210	740	
VAV-B6	**TOTAL**			**415**	**415**	**1380**	**1140**	**410**	**410**	**1470**	
1408	1	EDS	26 x 12	DNA	NA	720	(1)	150	NA	520	
1408	2	EDS	26 x 12	DNA	NA	720	(1)	155	NA	545	
1408	3	EDS	26 x 12	DNA	NA	720	(1)	155	NA	530	
1408	4	EDS	26 x 12	DNA	NA	720	(1)	160	NA	555	
1408	5	EDS	26 x 12	DNA	NA	720	(1)	255	NA	890	
1408	6	EDS	26 x 12	DNA	NA	720	(1)	295	NA	1025	
VAV-B7	**TOTAL**			**1300**	**NA**	**4320**	**4065**	**1170**	**NA**	**4065**	
1412	1	WS	10	DNA	DNA	430	(1)	135	135	435	
1413	2	EDS	22 x 12	DNA	DNA	540	(1)	155	155	525	
1413	3	EDS	22 x 12	DNA	DNA	540	(1)	185	185	585	
VAV-B8	**TOTAL**			**453**	**453**	**1510**	**1545**	**475**	**475**	**1545**	

REMARKS:

(1) Pitot for total.

Silicon Valley Mechanical
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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AC-B3 PAGE: 25

EQUIPMENT DATA	AC-B3			
LOCATION	ROOF BLDG B			
SERVICE	BLDG B			
MANUFACTURER	DAIKIN			
MODEL NUMBER	MPS050F			
SERIAL NUMBER	234116			
FAN DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED**
TOTAL AIR CFM	17000	16931		
RETURN AIR CFM	DNA	NM		
OUTSIDE AIR CFM	1580	1608		
RPM	1327	1100		
ESP " W.G.	1.50	1.70		
DISCHARGE SP " W.G.	DNA	0.80		
SUCTION SP " W.G.	DNA	0.90		
COIL ΔP " W.G.	DNA	0.52		
FILTER ΔP " W.G.	DNA	0.10		
MOTOR DATA	**NAMEPLATE**	**TESTED (2)**	**NAMEPLATE**	**TESTED**
MOTOR MFG / FRAME	DAIKIN / 254T			
HORSEPOWER	15			
RPM	1765	1457		
VOLTAGE / PHASE	460 / 3	377		
AMPERAGE / SF	17.7 / 1.15	12.3		
NO. BELT / SIZE	1 / 5VX930			
MOTOR SHEAVE x BORE	1B5V68 x B 1-5/8			
FAN SHEAVE x BORE	1B5V90 x B 1-15/16			
NO. FILTER / TYPE / SIZE	4 / PLEATED / 18 x 24 x 2 8 / PLEATED / 24 x 24 x 2			

REMARKS :

(1) Final tested data taken with motor VFD at 54Hz.

(2) Final tested motor data taken from VFD.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AC-B3 PAGE: 26

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-A22	12 / 0.79	38	-0.20	1.959	1450	428	428	
VAV-A23	8 / 0.35	39	0.24	2.528	580	174	174	
VAV-A24	6 / 0.20	40	0.16	2.321	230	69	69	
VAV-A25	12 / 0.79	41	0.55	2.360	1480	444	444	
VAV-B27	8 / 0.35	6	-0.33	2.632	415	124	124	
VAV-B28	6 / 0.20	7	0.05	1.498	250	75	75	
VAV-B29	12 / 0.79	8	-0.41	2.007	1325	398	398	
VAV-B30	10 / 0.55	9	-0.19	2.990	820	250	250	
VAV-B31	6 / 0.20	10	0.10	3.737	115	35	NA	
VAV-B33	12 / 0.79	11	0.25	2.603	1290	386	386	
VAV-B34	24 x 16 / 2.67	13	-0.68	2.310	3960	1188	1188	
VAV-B35	20 x 16 / 2.22	14	0.29	3.433	3500	1050	1050	
VAV-B36	24 x 16 / 2.67	17	0.18	2.118	4080	1125	NA	
VAV-B38	8 / 0.35	18	-0.24	2.290	345	105	NA	
VAV-B39	8 / 0.35	12	-0.35	2.405	345	105	NA	
VAV-B42	14 / 1.07	255	0.27	2.691	1000	300	NA	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AC-B3 PAGE: 27

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1014	1	SW	24 x 12	DNA	DNA	505	(1)	134	134	485	
1014	2	SW	24 x 12	DNA	DNA	505	(1)	149	149	540	
1015	3	SW	24 x 12	DNA	DNA	220	(1)	63	63	230	
1015	4	SW	24 x 12	DNA	DNA	220	(1)	65	65	225	
VAV-A22	TOTAL			428	428	1450	1540	411	411	1480	
1202	1	CD	12	174	174	580	625	165	165	585	
VAV-A23	TOTAL			174	174	580	625	165	165	585	
1203	1	CD	8	69	69	230	260	83	83	225	
VAV-A24	TOTAL			69	69	230	260	83	83	225	
1201	1	CD	10	DNA	DNA	370	360	100	100	335	
1201	2	CD	10	DNA	DNA	370	420	115	115	400	
1201	3	CD	10	DNA	DNA	370	435	115	115	400	
1201	4	CD	10	DNA	DNA	370	420	105	105	395	
VAV-A25	TOTAL			444	444	1480	1635	435	435	1530	
1017	1	SW	10	124	124	415	465	125	125	425	
VAV-B27	TOTAL			124	124	415	465	125	125	425	

REMARKS:

(1) Pitot for total.

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AC-B3 PAGE: 28

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1100	1	SW	8	DNA	DNA	125	260	40	40	130	
1100	2	SW	8	DNA	DNA	125	110	33	33	120	
VAVB-28	**TOTAL**			**75**	**75**	**250**	**370**	**73**	**73**	**250**	
1303	1	SW	24 x 12	DNA	DNA	440	350	130	130	450	
1303	2	SW	24 x 12	DNA	DNA	440	300	120	120	420	
1303	3	SW	24 x 12	DNA	DNA	440	320	120	120	420	
VAV-B29	**TOTAL**			**398**	**398**	**1320**	**970**	**370**	**370**	**1290**	
1304	1	CD	14	DNA	DNA	410	370	115	115	390	
1314	2	CD	14	DNA	DNA	410	410	125	125	440	
VAV-B30	**TOTAL**			**250**	**250**	**820**	**780**	**240**	**240**	**830**	
1402	1	CD	8	35	NA	115	180	35	NA	110	
VAV-B31	**TOTAL**			**35**	**NA**	**115**	**180**	**35**	**NA**	**110**	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: AC-B3 PAGE: 29

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1105	1	CD	8	DNA	DNA	150	75	22	22	75	
1104	2	CD	8	DNA	DNA	150	75	22	22	75	
1101	3	EDS	12 x 10	DNA	DNA	165	150	45	45	150	
1101	4	EDS	12 x 10	DNA	DNA	165	200	60	60	200	
1101	5	EDS	12 x 10	DNA	DNA	165	160	51	51	160	
1101	6	EDS	12 x 10	DNA	DNA	165	150	46	46	150	
1101	7	EDS	12 x 10	DNA	DNA	165	230	75	75	230	
1101	8	EDS	12 x 10	DNA	DNA	165	150	45	45	150	
VAV-B33	**TOTAL**			**386**	**386**	**1290**	**1190**	**366**	**366**	**1190**	
1311	1	EDS	26 x 12	DNA	DNA	990	(1)	270	270	960	
1311	2	EDS	26 x 22	DNA	DNA	990	(1)	265	265	950	
1311	3	EDS	26 x 12	DNA	DNA	990	(1)	310	310	1080	
1311	4	EDS	26 x 12	DNA	DNA	990	(1)	230	230	835	
VAV-B34	**TOTAL**			**1188**	**1188**	**3960**	**3105**	**1075**	**1075**	**3825**	
1311	1	EDS	26 x 12	DNA	DNA	875	(1)	270	270	815	
1311	2	EDS	26 x 12	DNA	DNA	875	(1)	275	275	825	
1311	3	EDS	26 x 12	DNA	DNA	875	(1)	310	310	890	
1311	4	EDS	26 x 12	DNA	DNA	875	(1)	300	300	870	
VAV-B35	**TOTAL**			**1050**	**1050**	**3500**	**3220**	**1155**	**1155**	**3400**	

REMARKS:

(1) Pitot for total.

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AC-B3 PAGE: 30

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1311	1	EDS	22 x 12	DNA	NA	510	(1)	175	NA	690	
1311	2	EDS	22 x 22	DNA	NA	510	(1)	155	NA	605	
1311	3	EDS	22 x 12	DNA	NA	510	(1)	195	NA	780	
1311	4	EDS	22 x 12	DNA	NA	510	(1)	150	NA	590	
1311	5	EDS	22 x 12	DNA	NA	510	(1)	120	NA	470	
1311	6	EDS	22 x 12	DNA	NA	510	(1)	99	NA	385	
1311	7	EDS	22 x 12	DNA	NA	510	(1)	63	NA	250	
1311	8	EDS	22 x 12	DNA	NA	510	(1)	63	NA	250	
VAV-B36	**TOTAL**			**1125**	**NA**	**4080**	**3970**	**1020**	**NA**	**4020**	
1308	1	CD	8	DNA	NA	115	105	36	NA	110	
1309	2	CD	8	DNA	NA	115	115	39	NA	120	
1310	3	CD	8	DNA	NA	115	110	39	NA	120	
VAV-B38	**TOTAL**			**105**	**NA**	**345**	**330**	**114**	**NA**	**350**	
1305	1	CD	8	DNA	NA	115	95	33	NA	110	
1306	2	CD	8	DNA	NA	115	105	35	NA	110	
1307	3	CD	8	DNA	NA	115	110	40	NA	120	
VAV-B39	TOTAL			105	NA	345	310	108	NA	340	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AC-B3 PAGE: 30

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
IDF BLDG B	1	EDS	12 x 24	300	NA	1000	785	325	NA	1050	
VAV-B42	TOTAL			300	NA	1000	785	325	NA	1050	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/25/2015

SYSTEM: AC-B4 & AC-B5 PAGE: 31

EQUIPMENT DATA	AC-B4		AC-B5	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	BLDG B		BLDG B	
MANUFACTURER	TRANE		TRANE	
MODEL NUMBER	THC060F		THC120F	
SERIAL NUMBER	153210181L		153212888L	
FAN DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL AIR CFM	3000	3150	4000	4345
RETURN AIR CFM	DNA	NM	DNA	NM
OUTSIDE AIR CFM	40	477 (2)	30	517 (2)
RPM	1141	1080	1453	1690
ESP " W.G.	1.00	0.18	1.00	1.36
DISCHARGE SP " W.G.	DNA	0.09	DNA	0.37
SUCTION SP " W.G.	DNA	0.09	DNA	0.99
COIL ΔP " W.G.	DNA	0.31	DNA	0.32
FILTER ΔP " W.G.	DNA	0.34	DNA	0.08
MOTOR DATA	**NAMEPLATE**	**TESTED**	**NAMEPLATE (1)**	**TESTED**
MOTOR MFG / FRAME	MARATHON / 56		DNA	
HORSEPOWER	1		3.60	
RPM	1725	NM	DNA	HIGH SPEED
VOLTAGE / PHASE	460 / 3	494 / 495 / 497	460 / 3	490 / 490 / 490
AMPERAGE / SF	2.5 / 1.5	2.3 / 2.4 / 2.3	4.30 / DNA	2.3 / 2.3 / 2.2
NO. BELT / SIZE	1 / AX29		DIRECT DRIVE	
MOTOR SHEAVE x BORE	1VL34 x 5/8		DIRECT DRIVE	
FAN SHEAVE x BORE	AK49 x 3/4		DIRECT DRIVE	
NO. FILTER / TYPE / SIZE	4 / PLEATED / 16 x 25 x 2		2 / PLEATED / 20 x 30 x 2 3 / PLEATED / 20 x 25 x 2	

REMARKS :

(1) No access to motor, data taken from unit nameplate.

(2) Damper 100% closed, excess is due to leakage.

Silicon Valley Mechanical
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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: AC-B4 & AC-B5 PAGE: 32

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
1406	1	CD	16	1500			1565	
1406	2	CD	16	1500			1585	
AC-B4	TOTAL			3000			3150	
1409	1	EDS		2000	1340		2150	
1409	2	EDS		2000	1365		2195	
AC-B5	TOTAL			4000	2705		4345	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/23/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 33

EQUIPMENT DATA	AHU-1		AHU-2	
LOCATION	ROOF BLDG C		ROOF BLDG C	
SERVICE	BLDG C		BLDG C	
MANUFACTURER	YORK		YORK	
MODEL NUMBER	SOLUTION-XTO-78 x 96		SOLUTION-XTO-78 x 96	
SERIAL NUMBER	CHCMXT0262		CHCMXT0263	
FAN DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (1)**
TOTAL AIR CFM	20000	20092	20000	19923
RETURN AIR CFM	DNA	NM	DNA	NM
OUTSIDE AIR CFM	835	855	835	840
RPM	2097	1868	2097	1865
TSP " W.G. ESP " W.G.	4.58 / 2.50	2.67	4.58 / 2.50	2.75
DISCHARGE SP " W.G.	DNA	0.61	DNA	0.69
SUCTION SP " W.G.	DNA	2.06	DNA	2.06
COIL ΔP " W.G.	DNA	0.30	DNA	0.31
FILTER ΔP " W.G.	DNA	1.26 (2)	DNA	1.11 (2)
MOTOR DATA	**NAMEPLATE**	**TESTED (3)**	**NAMEPLATE**	**TESTED (3)**
MOTOR MFG / FRAME	TECO / 286T		TECO / 286T	
HORSEPOWER	30		30	
RPM	1770	1601	1770	1601
VOLTAGE / PHASE	460 / 3	414	460 / 3	414
AMPERAGE / SF	34.7 / 1.15	23.8	34.7 / 1.15	23.8
NO. BELT / SIZE	2 / BX55		2 / BX55	
MOTOR SHEAVE x BORE	2B5V110 x B 1-7/8		2B5V110 x B 1-7/8	
FAN SHEAVE x BORE	2B5V94 x B 2		2B5V94 x B 2	
NO. FILTER / TYPE / SIZE	4 / PLEATED / 20 x 20 x 2 & 4 / BOX / 20 x 20 x 2 4 / PLEATED / 20 x 20 x 2 & 4 / BOX / 20 x 20 x 2		4 / PLEATED / 20 x 20 x 2 & 4 / BOX / 20 x 20 x 2 4 / PLEATED / 20 x 20 x 2 & 4 / BOX / 20 x 20 x 2	

REMARKS :

(1) Final tested data taken with motor VFD at 54Hz.

(2) Final filter drop measured across both pre and box filters.

(3) Final tested motor data taken from VFD.

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 34

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-C1	16 / 1.40	12	0.39	2.091	3080	925	925	
VAV-C2	14 / 1.07	11	-1.13	2.493	2280	685	NA	
VAV-C3	8 / 0.35	10	-0.16	2.628	530	160	160	
VAV-C4	12 / 0.79	9	0.40	2.515	1355	410	410	
VAV-C5	6 / 0.20	8	-0.50	2.990	220	70	70	
VAV-C6	6 / 0.20	5	0.31	2.990	360	110	110	
VAV-C7	14 / 1.07	6	0.26	2.990	2600	840	840	
VAV-C8	12 / 0.79	7	-0.10	2.583	1380	550	NA	
VAV-C9	8 / 0.35	17	0.11	2.153	490	150	150	
VAV-C10	8 / 0.35	16	-0.52	1.239	525	160	160	
VAV-C11	16 / 1.40	15	0.36	1.839	2280	770	770	
VAV-C12	12 / 0.79	14	0.32	2.782	1680	505	NA	
VAV-C13	6 / 0.20	13	-0.19	3.641	345	105	NA	
VAV-C14	6 / 0.20	21	-0.56	2.952	230	70	NA	
VAV-C15	12 / 0.79	20	0.90	2.338	1250	375	375	
VAV-C16	12 / 0.79	19	-0.79	2.636	1350	585	585	
VAV-C17	8 / 0.35	18	0.19	2.305	850	255	NA	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/21/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 35

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1503	1	CD	12	DNA	DNA	385	390	97	97	370	
1503	2	CD	12	DNA	DNA	385	405	105	105	375	
1503	3	CD	12	DNA	DNA	385	410	100	100	380	
1503	4	CD	12	DNA	DNA	385	410	105	105	370	
1503	5	CD	12	DNA	DNA	385	440	105	105	400	
1503	6	CD	12	DNA	DNA	385	415	105	105	390	
1503	7	CD	12	DNA	DNA	385	420	110	110	385	
1503	8	CD	12	DNA	DNA	385	410	100	100	375	
VAV-C1	**TOTAL**			**925**	**925**	**3080**	**3300**	**827**	**827**	**3045**	
1503	1	CD	10	DNA	NA	285	35	88	NA	280	
1503	2	CD	10	DNA	NA	285	295	95	NA	290	
1503	3	CD	10	DNA	NA	285	295	88	NA	275	
1503	4	CD	10	DNA	NA	285	280	98	NA	290	
1503	5	CD	10	DNA	NA	285	315	82	NA	285	
1503	6	CD	10	DNA	NA	285	305	100	NA	310	
1503	7	CD	10	DNA	NA	285	325	98	NA	300	
1503	8	CD	10	DNA	NA	285	270	91	NA	290	
VAV-C2	**TOTAL**			**685**	**NA**	**2280**	**2120**	**753**	**NA**	**2320**	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 36

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1533	1	CD	10	DNA	DNA	265	300	74	74	265	
1533	2	CD	10	DNA	DNA	265	270	75	75	285	
VAV-C3	TOTAL			160	160	530	570	149	149	550	
1530	1A	SW	12 x 12	DNA	DNA	175	0	37	37	165	
1532	1	CD	8	DNA	DNA	220	165	70	70	235	
1532	2	CD	8	DNA	DNA	220	175	73	73	240	
1532	3	CD	8	DNA	DNA	220	170	71	71	235	
1532	4	CD	8	DNA	DNA	220	165	68	68	235	
1535	5	CD	14	DNA	DNA	300	490	89	89	300	
VAV-C4	TOTAL			410	410	1355		408	408	1410	
1531	1	CD	6	DNA	DNA	110	100	40	40	100	
1531	2	CD	6	DNA	DNA	110	105	36	36	105	
VAV-C5	TOTAL			70	70	220	205	76	76	205	
1526	1	CD	8	DNA	DNA	180	190	52	52	190	
1526	2	CD	8	DNA	DNA	180	165	49	49	165	
VAV-C6	TOTAL			110	110	360	335	101	101	355	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 37

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1522	1	CD	14	DNA	DNA	650	720	240	240	650	
1522	2	CD	14	DNA	DNA	650	720	240	240	650	
1522	3	CD	14	DNA	DNA	650	700	210	210	640	
1522	4	CD	14	DNA	DNA	650	700	210	210	640	
VAV-C7	**TOTAL**			**840**	**840**	**2600**	**2840**	**900**	**900**	**2580**	
1522	1	CD	12	DNA	NA	460	560	165	NA	460	
1522	2	CD	12	DNA	NA	460	600	170	NA	445	
1522	3	CD	12	DNA	NA	460	600	175	NA	465	
VAV-C8	**TOTAL**			**550**	**NA**	**1380**	**1760**	**510**	**NA**	**1360**	
1512	1	CD	10	DNA	DNA	245	250	70	70	250	
1512	2	CD	10	DNA	DNA	245	260	75	75	260	
VAV-C9	**TOTAL**			**150**	**150**	**490**	**510**	**145**	**145**	**510**	
1502	1	SW	16 x 16	160	160	525	820	150	150	530	
VAV-C10	**TOTAL**			**160**	**160**	**525**	**820**	**150**	**150**	**530**	

REMARKS:

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/20/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 38

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1503	1	CD	10	DNA	DNA	285	325	90	90	265	
1503	2	CD	10	DNA	DNA	285	305	84	84	275	
1503	3	CD	10	DNA	DNA	285	305	86	86	255	
1503	4	CD	10	DNA	DNA	285	300	83	83	255	
1503	5	CD	10	DNA	DNA	285	315	89	89	270	
1503	6	CD	10	DNA	DNA	285	330	94	94	280	
1503	7	CD	10	DNA	DNA	285	310	85	85	270	
1503	8	CD	10	DNA	DNA	285	300	83	83	265	
VAV-C11	**TOTAL**			**770**	**770**	**2280**	**2490**	**694**	**694**	**2135**	
1503	1	CD	10	DNA	NA	280	270	87	NA	285	
1503	2	CD	10	DNA	NA	280	260	82	NA	275	
1503	3	CD	10	DNA	NA	280	265	84	NA	280	
1503	4	CD	10	DNA	NA	280	275	83	NA	285	
1503	5	CD	10	DNA	NA	280	306	87	NA	295	
1503	6	CD	10	DNA	NA	280	60	78	NA	270	
VAV-C12	**TOTAL**			**505**	**NA**	**1680**	**1435**	**501**	**NA**	**1690**	
1506	1	CD	6	DNA	NA	115	80	35	NA	115	
1505	2	CD	6	DNA	NA	115	90	40	NA	115	
1504	3	CD	6	DNA	NA	115	90	40	NA	110	
VAV-C13	**TOTAL**			**105**	**NA**	**345**	**260**	**115**	**NA**	**335**	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AHU-1 & AHU-2 PAGE: 39

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1511	1	CD	8	DNA	NA	115	90	35	NA	110	
1513	2	CD	8	DNA	NA	115	100	35	NA	120	
VAV-C14	TOTAL			70	NA	230	190	70	NA	230	
1515	1	CD	12	DNA	DNA	625	400	165	165	610	
1515	2	CD	12	DNA	DNA	625	800	175	175	630	
VAV-C15	TOTAL			375	375	1250	1200	340	340	1240	
1517	1	SW	16 x 16	DNA	DNA	450	625	195	195	480	
1516	2	CD	12	DNA	DNA	450	635	200	200	450	
1516	3	CD	12	DNA	DNA	450	650	205	205	430	
VAV-C16	TOTAL			585	585	1350	1910	600	600	1360	
1514	1	CD	14	DNA	NA	425	690	140	NA	425	
1514	2	CD	14	DNA	NA	425	670	130	NA	425	
VAV-C17	TOTAL			255	NA	850	1360	280	NA	850	

REMARKS:

Silicon Valley Mechanical
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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 40

EQUIPMENT DATA	AHU-3		AHU-4	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	BLDG A & B		BLDG A & B	
MANUFACTURER	YORK		YORK	
MODEL NUMBER	SOLUTION-XT0-120 x 44		SOLUTION-XT0-120 x 44	
SERIAL NUMBER	CHCMXT0170		CHCMXT0171	
FAN DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (1)**
TOTAL AIR CFM	50000	51935	50000	51876
RETURN AIR CFM	DNA	NM	DNA	NM
OUTSIDE AIR CFM	1735	1737	1735	1807
RPM	431	1024	431	1024
TSP " W.G. ESP " W.G.	4.64 / 2.50	2.08	4.64 / 2.50	2.59
DISCHARGE SP " W.G.	DNA	1.07	DNA	1.46
SUCTION SP " W.G.	DNA	1.01	DNA	1.13
COIL ΔP " W.G.	DNA	0.38	DNA	0.36
FILTER ΔP " W.G.	DNA	0.82	DNA	0.91
MOTOR DATA	**NAMEPLATE**	**TESTED (2)**	**NAMEPLATE**	**TESTED (2)**
MOTOR MFG / FRAME	BALDOR / 364T		BALDOR / 364T	
HORSEPOWER	60		60	
RPM	1775	1780	1775	1779
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	68 / 1.15	58.0	68 / 1.15	62.8
NO. BELT / SIZE	3 / 5VX800		4 / 5VX730	
MOTOR SHEAVE x BORE	3R5V90 x R1 2-3/8		4Q5V75 x Q1 2-3/8	
FAN SHEAVE x BORE	3B5V154 x B 2-7/16		4B5V124 x B 2-7/16	
NO. FILTER / TYPE / SIZE	15 / PLEATED / 20 x 20 x 2 & 15 / BOX / 20 x 20 x 2 15 / PLEATED / 20 x 20 x 2 & 15 / BOX / 20 x 20 x 2		15 / PLEATED / 20 x 20 x 2 & 15 / BOX / 20 x 20 x 2 15 / PLEATED / 20 x 20 x 2 & 15 / BOX / 20 x 20 x 2	

REMARKS :

(1) Final tested data taken with motor VFD at 60 Hz.

(2) Final tested motor data taken from VFD.

Silicon Valley Mechanical
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JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 41

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-A1	10 / 0.35	11	-0.32	3.504	900	270	270	
VAV-A2	14 / 1.07	10	-0.05	2.085	1720	516	516	
VAV-A3	14 / 1.07	8	0.11	2.311	1040	312	312	
VAV-A4	14 / 1.07	7	0.04	1.259	1040	312	312	
VAV-A5	6 / 0.20	9	-0.85	2.990	300	90	90	
VAV-A6	8 / 0.35	6	-0.61	2.990	450	135	135	
VAV-A7	10 / 0.55	5	-0.47	2.990	950	285	285	
VAV-A8	16 / 1.40	12	-0.21	1.658	2260	678	NA	
VAV-A9	14 / 1.07	13	-0.18	2.416	2260	678	678	
VAV-A10	12 / 0.79	14	-0.15	1.224	1425	430	NA	
VAV-A11	6 / 0.20	15	0.56	0.710	340	105	NA	
VAV-A12	12 / 0.79	16	-0.02	1.739	1540	462	462	
VAV-A13	10 / 0.55	17	0.20	2.334	720	216	216	
VAV-A15	8 / 0.35	24	-0.41	2.482	560	168	168	
VAV-A17	10 / 0.55	26	-0.25	2.328	770	231	NA	
VAV-A18	10 / 0.55	27	0.08	2.536	900	270	NA	
VAV-A19	10 / 0.55	28	-0.16	2.598	770	231	NA	
VAV-A20	8 / 0.35	29	-0.31	2.327	440	132	132	
VAV-A26	12 / 0.79	37	0.33	2.657	1440	432	432	
VAV-A27	8 / 0.35	36	-0.07	1.683	325	98	98	
VAV-A28	14 / 1.07	34	-0.08	3.218	1985	595	595	
VAV-A29	12 / 0.79	33	-0.46	2.178	1550	465	NA	
VAV-A30	10 / 0.55	32	-0.14	5.522	440	132	NA	

REMARKS:

Silicon Valley Mechanical
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JCI DDC VAV DATA REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 42

UNIT	SIZE / AREA	ADDRESS	DPO	FLOW GAIN	MAX CFM	MIN CFM	HEAT CFM	NOTE
VAV-A31	10 / 0.55	31	0.14	2.380	830	249	NA	
VAV-A32	10 / 0.55	30	0.67	2.852	880	264	NA	
VAV-A34	10 / 0.55	35	0.16	3.165	640	192	NA	
VAV-B10	12 / 0.79	28	-0.28	1.887	1320	395	NA	
VAV-B11	14 / 1.07	27	-0.19	2.021	1500	451	NA	
VAV-B12	12 / 0.79	29	-0.28	2.000	1320	400	NA	
VAV-B13	12 / 0.79	30	-0.07	2.196	1320	400	NA	
VAV-B14	12 / 0.79	31	-0.28	1.884	1320	400	NA	
VAV-B15	12 / 0.79	32	0.04	2.000	1320	400	NA	
VAV-B16	12 / 0.79	33	-1.18	2.000	1320	400	NA	
VAV-B17	12 / 0.79	34	-0.45	1.470	1320	400	NA	
VAV-B18	8 / 0.35	35	-0.02	2.804	345	104	104	
VAV-B19	12 / 0.79	40	-0.45	1.707	1320	400	NA	
VAV-B20	12 / 0.79	39	0.06	1.639	1320	400	NA	
VAV-B21	12 / 0.79	38	-1.08	1.495	1320	400	NA	
VAV-B22	14 / 1.07	36	-4.01	1.681	2605	781	NA	
VAV-B23	12 / 0.78	5	0.54	2.290	2370	712	712	
VAV-B24	16 / 1.40	41	-0.33	2.259	2850	855	NA	
VAV-B25	20 / 2.18	15	0.04	3.265	3420	1026	1026	
VAV-B26	14 / 1.07	16	-0.29	2.134	2500	750	750	
VAV-B37	12 / 0.79	37	-0.20	1.938	1320	400	NA	
VAV-B41	14 / 1.07	4	0.27	3.397	1510	453	NA	

REMARKS:

Silicon Valley Mechanical
2087 Ringwood Ave. Suite 50 San Jose, CA 95131-1785

VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/23/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 43

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1028	1	EDS	22 x 12	DNA	DNA	450	405	170	170	590	
1028	2	EDS	22 x 12	DNA	DNA	450	235	100	100	340	
VAV-A1	TOTAL			270	270	900	640	270		930	
1027	1	EDS	22 x 12	DNA	DNA	430	(1)	195	195	600	
1027	2	EDS	22 x 12	DNA	DNA	430	(1)	200	200	630	
1027	3	EDS	22 x 12	DNA	DNA	430	(1)	55	55	150	
1027	4	EDS	22 x 12	DNA	DNA	430	(1)	115	115	355	
VAV-A2	TOTAL			516	516	1720	2070	565	565	1735	
1215	1	CD	10	DNA	DNA	260	315	79	79	265	
1215	2	CD	10	DNA	DNA	260	250	70	70	235	
1215	3	CD	10	DNA	DNA	260	365	79	79	265	
1215	4	CD	10	DNA	DNA	260	265	76	76	260	
VAV-A3	TOTAL			312	312	1040	1195	304	304	1025	
1215	1	CD	10	DNA	DNA	260	270	69	69	270	
1215	2	CD	10	DNA	DNA	260	240	68	68	240	
1215	3	CD	10	DNA	DNA	260	270	80	80	270	
1215	4	CD	10	DNA	DNA	260	255	73	73	245	
VAV-A4	TOTAL			312	312	1040	1035	290	290	1035	

REMARKS:

(1) Pitot for total.

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/23/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 44

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1215	1	CD	8	DNA	DNA	150	170	46	46	155	
1215	2	CD	8	DNA	DNA	150	135	36	36	140	
VAV-A5	TOTAL			90	90	300	305	82	82	295	
1218	1	CD	12	135	135	450	460	130	130	460	
VAV-A6	TOTAL			135	135	450	460	130	130	460	
1219	1	SW	20 x 12	DNA	DNA	475	465	135	135	465	
1219	2	SW	20 x 12	DNA	DNA	475	520	150	150	520	
VAV-A7	TOTAL			285	285	950	985	285	285	985	
1026	1	EDS	22 x 12	DNA	NA	565	475	140	NA	520	
1026	2	EDS	22 x 12	DNA	NA	565	625	190	NA	600	
1026	3	EDS	22 x 12	DNA	NA	565	690	210	NA	620	
1026	4	EDS	22 x 12	DNA	NA	565	460	140	NA	510	
VAV-A8	TOTAL			678	NA	2260	2250	680	NA	2250	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 45

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1026	1	EDS	22 x 12	DNA	DNA	565	600	175	175	570	
1026	2	EDS	22 x 12	DNA	DNA	565	585	175	175	555	
1026	3	EDS	22 x 12	DNA	DNA	565	585	160	160	550	
1026	4	EDS	22 x 12	DNA	DNA	565	425	125	125	515	
VAV-A9	TOTAL			678	678	2260	2190	636	636	2190	
1024	1	EDS	22 x 12	430	NA	1425	1350	420	NA	1350	
VAV-A10	TOTAL			430	NA	1425	1350	420	NA	1350	
1025	1	EDS	12 x 12	105	NA	340	325	120	NA	325	
VAV-A11	TOTAL			105	NA	340	325	120	NA	325	
1022	1	EDS	22 x 12	DNA	DNA	410	230	50	50	150	
1022	2	EDS	22 x 12	DNA	DNA	410	210	45	45	140	
1022	3	EDS	22 x 12	DNA	DNA	360	1475	235	235	800	
1022	4	EDS	22 x 12	DNA	DNA	360	865	140	140	470	
VAV-A12	TOTAL			462	462	1540	2810	470	470	1560	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/23/2015

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AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1021	1	EDS	22 x 12	DNA	DNA	360	400	130	130	400	
1021	2	EDS	22 x 12	DNA	DNA	360	340	100	100	340	
VAV-A13	TOTAL			216	216	720	740	230	230	740	
1005	1	CD	10	DNA	DNA	280	300	80	80	300	
1005	2	CD	10	DNA	DNA	280	275	76	76	275	
VAV-A15	TOTAL			168	168	560	575	156	156	575	
1204	1	CD	12	DNA	NA	385	330	115	NA	385	
1204	2	CD	12	DNA	NA	385	385	110	NA	375	
VAV-A17	TOTAL			231	NA	770	715	225	NA	770	
1205	1	CD	12	DNA	NA	450	345	125	NA	455	
1205	2	CD	12	DNA	NA	450	450	135	NA	485	
VAV-A18	TOTAL			270	NA	900	795	260	NA	940	
1204	1	CD	10	DNA	NA	385	290	105	105	370	
1204	2	CD	10	DNA	NA	385	370	125	125	405	
VAV-A19	TOTAL			231	NA	770	660	230	230	775	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/27/2015

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AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1204	1	CD	8	DNA	DNA	220	190	62	62	210	
1204	2	CD	8	DNA	DNA	220	200	60	60	215	
VAV-A20	TOTAL			132	132	440	390	122	122	425	
1207	1	CD	10	DNA	DNA	360	340	100	100	360	
1207	2	CD	10	DNA	DNA	360	350	100	100	370	
1207	3	CD	10	DNA	DNA	360	300	110	110	325	
1207	4	CD	10	DNA	DNA	360	330	105	105	335	
VAV-A26	TOTAL			432	432	1440	1320	415	415	1380	
1208	1	CD	10	98	98	325	355	100	100	355	
VAV-A27	TOTAL			98	98	325	355	100	100	355	
1206	1	SW	18	595	595	1985	1530	600	600	1950	
VAV-A28	TOTAL			595	595	1985	1530	600	600	1950	
1206	1	CD	16	465	NA	1550	1600	480	NA	1500	
VAV-A29	TOTAL			465	NA	1550	1600	480	NA	1500	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 48

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1213	1	CD	8	DNA	NA	220	190	65	NA	220	
1213	2	CD	8	DNA	NA	220	190	66	NA	220	
VAV-A30	TOTAL			132	NA	440	360	131	NA	440	
1217	1	CD	12	DNA	NA	340	145	110	NA	330	
1222	2	CD	10	DNA	NA	150	67	50	NA	155	
1217	3	CD	12	DNA	NA	340	135	100	NA	315	
VAV-A31	TOTAL			249	NA	830	347	260	NA	800	
1221	1	CD	12	DNA	NA	440	365	125	NA	405	
1221	2	CD	12	DNA	NA	440	405	140	NA	445	
VAV-A32	TOTAL			264	NA	880	770	265	NA	450	
1214	1	CD	10	DNA	NA	320	325	86	NA	310	
1214	2	CD	10	DNA	NA	320	385	94	NA	350	
VAV-A34	TOTAL			192	NA	640	710	180	NA	660	
CHAMBER	1	DUCT	16	395	NA	1320	1420	390	NA	1360	
VAV-B10	TOTAL			395	NA	1320	1420	390	NA	1360	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/21/2015

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AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1406	1	CD	16	DNA	NA	750	700	200	NA	700	
1406	2	CD	16	DNA	NA	750	735	225	NA	735	
VAV-B11	TOTAL				NA	1500	1470	425	NA	1470	
CHAMBER	1	CD	16	400	NA	1320	1275	370	NA	1345	
VAV-B12	TOTAL			400	NA	1320	1275	370	NA	1345	
CHAMBER	1	CD	16	400	NA	1320	1310	375	NA	1310	
VAV-B13	TOTAL			400	NA	1320	1310	375	NA	1310	
CHAMBER	1	CD	16	400	NA	1320	1380	405	NA	1325	
VAV-B14	TOTAL			400	NA	1320	1380	405	NA	1325	
CHAMBER	1	CD	16	400	NA	1320	1320	380	NA	1320	
VAV-B15	TOTAL			400	NA	1320	1320	380	NA	1320	
CHAMBER	1	CD	16	400	NA	1320	1330	440	NA	1330	
VAV-B16	TOTAL			400	NA	1320	1330	440	NA	1330	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 50

AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
CHAMBER	1	CD	16	400	NA	1320	1000	375	NA	1360	
VAV-B17	TOTAL			400	NA	1320	1000	375	NA	1360	
1404	1	CD	8	DNA	DNA	145	175	45	45	155	
1404	2	CD	8	DNA	DNA	145	180	49	49	155	
1403	3	CD	6	DNA	DNA	55	80	13	13	55	
VAV-B18	TOTAL			104	104	345	435	107	107	365	
CHAMBER	1	CD	16	400	NA	1320	1445	380	NA	1340	
VAV-B19	TOTAL			400	NA	1320	1445	380	NA	1340	
CHAMBER	1	CD	16	400	NA	1320	1400	375	NA	1290	
VAV-B20	TOTAL			400	NA	1320	1400	375	NA	1290	
CHAMBER	1	CD	16	400	NA	1320	1580	370	NA	1300	
VAV-B21	TOTAL			400	NA	1320	1580	370	NA	1300	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

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AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1401C	1	CD	12	DNA	NA	510	440	155	NA	490	
1401C	2	CD	12	DNA	NA	510	390	140	NA	490	
1401	3	CD	12	DNA	NA	510	400	140	NA	510	
1401	4	CD	12	DNA	NA	510	420	150	NA	510	
1401	5	CD	12	DNA	NA	510	370	130	NA	485	
1407	6	CD	6	DNA	NA	85	80	35	NA	85	
VAV-B22	TOTAL			781	NA	2605	2100	750	NA	2570	
THERMAL LAB	1	CD	10	DNA	DNA	395	280	93	93	360	
THERMAL LAB	2	CD	10	DNA	DNA	395	440	140	140	430	
THERMAL LAB	3	CD	10	DNA	DNA	395	440	110	110	420	
THERMAL LAB	4	CD	10	DNA	DNA	395	350	94	94	400	
THERMAL LAB	5	CD	10	DNA	DNA	395	310	85	85	360	
THERMAL LAB	6	CD	10	DNA	DNA	395	305	95	95	400	
VAV-B23	TOTAL			712	712	2370	2125	747	747	2370	

REMARKS:

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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/21/2015

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AREA	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
SERVED	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
1401	1	CD	12	DNA	NA	475	310	145	NA	500	
1401	2	CD	12	DNA	NA	475	225	140	NA	490	
1401	3	CD	12	DNA	NA	475	485	140	NA	500	
1401	4	CD	12	DNA	NA	475	655	140	NA	500	
1401	5	CD	12	DNA	NA	475	280	130	NA	440	
1401	6	CD	12	DNA	NA	475	415	135	NA	480	
VAV-B24	**TOTAL**			**855**	**NA**	**2850**	**2370**	**830**	**NA**	**2910**	
1312	1	EDS	26 x 12	DNA	DNA	855	595	160	160	595	
1312	2	EDS	26 x 12	DNA	DNA	855	1220	325	325	1220	
1312	3	EDS	26 x 12	DNA	DNA	855	520	140	140	525	
1312	4	EDS	26 x 12	DNA	DNA	855	1090	290	290	1090	
VAV-B25	**TOTAL**			**1026**	**1026**	**3420**	**3425**	**915**	**915**	**3425**	
1312	1	EDS	26 x 12	DNA	DNA	625	(1)	110	110	400	
1312	2	EDS	26 x 12	DNA	DNA	625	(1)	185	185	665	
1312	3	EDS	26 x 12	DNA	DNA	625	(1)	170	170	620	
1312	4	EDS	26 x 12	DNA	DNA	625	(1)	260	260	945	
VAV-B26	**TOTAL**			**750**	**750**	**2500**	**2628**	**725**	**725**	**2630**	

REMARKS:

(1) Pitot for total

Silicon Valley Mechanical
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VAV DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/21/2015

SYSTEM: AHU-3 & AHU-4 PAGE: 53

AREA SERVED	OUTLET / INLET			DESIGN			PRE	FINAL			NOTE
	NO.	TYPE	SIZE	MIN CLG	MAX HTG	MAX CLG	MAX CLG	MIN CLG	MAX HTG	MAX CLG	
CHAMBER	1	CD	16	400	NA	1320	1380	410	NA	1320	
VAV-B37	TOTAL			**400**	**NA**	**1320**	**1380**	**410**	**NA**	**1320**	
ELECTRICAL	1	EDS	16 x 16	453	NA	1510	1550	460	NA	1550	
VAV-B41	TOTAL			**453**	**NA**	**1510**	**1550**	**460**	**NA**	**1550**	

REMARKS:

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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: EF-2, EF-3 & EF-4 PAGE: 54

EQUIPMENT DATA	EF-2		EF-3		EF-4	
LOCATION	ROOF BLDG A		ROOF BLDG B		ROOF BLDG C	
SERVICE	A2 RESTROOM		B RESTROOM		C RESTROOM	
MANUFACTURER	GREENHECK		GREENHECK		GREENHECK	
MODEL NUMBER	GB-141-5-X		GB-141-5-X		GB-141-5-X	
SERIAL NUMBER	13973486 141		14308414 161		13973488 141	
TYPE	MUSHROOM		UTILITY		MUSHROOM	
MOTOR MFG / FRAME	MARATHON / 48Z		WEG / 143 5T		MARATHON / 48Z	
MOTOR HP	1/2		1/2		1/2	
MOTOR RPM	1725		1760		1725	
VOLTAGE / PHASE	115 / 1		460 / 3		120 / 1	
FULL LOAD AMPS / SF	7.2 / 1.25		1.51 / 1.15		7.2 / 1.25	
MOTOR SHEAVE x BORE	VP34 x 1/2		1VP40 x 7/8		VP34 x 1/2	
FAN SHEAVE x BORE	AK39 x 5/8		2-1/4 x 3/4		AK49 x 3/4	
NO. BELT / SIZE	1 Ax20		1 / Ax24		1 / 4L230	
SHEAVE CL DISTANCE	5-1/2		9-1/8		5-1/4	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL CFM	1380	1265	1360	1310	1305	1320
MOTOR RPM	1725	1728	1760	1760	1725	1115
FAN RPM	1177	1557	1140	1724	1158	1750
ESP " W.G.	0.75	0.47	0.75	0.66	0.75	0.35
DISCHARGE SP " W.G.	DNA	0.05	DNA	0.20	DNA	0.02
SUCTION SP " W.G.	DNA	0.42	DNA	0.44	DNA	0.33
VOLTAGE	115	112	460	480 / 481 / 481	120	122
AMPERAGE	7.2	6.4	1.51	1.0 / 0.9 / 1.0	7.2	6.2
PHASE	1	1	3	3	1	1

REMARKS:

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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: EF-2, EF-3 & EF-4 PAGE: 55

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
2021	1	CEG	14	600			545	
2013	2	CEG	14	600			555	
2014A	3	WE	6	180			165	
EF-2	TOTAL			1380			1265	
1103	1	WE	6	260			250	
1106	2	CEG	14	500			525	
1107	3	CEG	14	500			535	
EF-3	TOTAL			1360			1310	
1524	1	CEG	8	135			145	
1524	2	CEG	12	480			445	
1523	3	CEG	6	80			85	
1525	4	CEG	8	135			135	
1525	5	CEG	12	480			510	
EF-4	TOTAL			1310			1320	

REMARKS:

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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: EF-5, EF-6 & EF-7 PAGE: 56

EQUIPMENT DATA	EF-5		EF-6		EF-7	
LOCATION	ROOF BLDG B		LASER LAB 1221		SOLDER 2015C	
SERVICE	MACHINE SHOP FUME HOOD		LASER LAB 1221		SOLDER 2015C	
MANUFACTURER	GREENHECK		GREENHECK		NEDERMAN	
MODEL NUMBER	USF-308-10-B1-7		G-143HP-VG		N10	
SERIAL NUMBER	14252889		14308316		583762	
TYPE	UTILITY		MUSHROOM		INLINE / CENTRIFUGAL	
MOTOR MFG / FRAME	WEG / 56H		MARATHON / DNA		MOTEK / DNA	
MOTOR HP	3/4		1/2		3/4	
MOTOR RPM	1770		300 - 1725		3400	
VOLTAGE / PHASE	460 / 3		120 / 1		115 / 1	
FULL LOAD AMPS / SF	1.31 / 1.25		6.2 / DNA		8.8 / DNA	
MOTOR SHEAVE x BORE	2-1/4 x 3/4		DIRECT DRIVE		DIRECT DRIVE	
FAN SHEAVE x BORE	1VP40 x 5/8		DIRECT DRIVE		DIRECT DRIVE	
NO. BELT / SIZE	1 / AX23		DIRECT DRIVE		DIRECT DRIVE	
SHEAVE CL DISTANCE	6		DIRECT DRIVE		DIRECT DRIVE	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL CFM	800	870	875	805	705	705
MOTOR RPM	1770	1780	300 - 1725	1714	3400	3400
FAN RPM	2623	2317	1687	1714	3230	3400
ESP " W.G.	2	0.64	1.25	0.45	DNA	0.92
DISCHARGE SP " W.G.	DNA	0.20	DNA	0.05	DNA	0.38
SUCTION SP " W.G.	DNA	0.44	DNA	0.40	DNA	0.54
VOLTAGE	460	480 / 479 / 480	120	112	115	117
AMPERAGE	1.31	1.2 / 1.2 / 1.3	6.2	4.6	8.8	6.5
PHASE	3	3	1	1	1	1

REMARKS:

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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: EF-5, EF-6 & EF-7 PAGE: 57

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
1219	1	HOOD		800	1020		870	
EF-5	TOTAL			800	1020		870	
1221	1	CD	12	875	805		805	
EF-6	TOTAL			875	805		805	
2015C	1	DUCT	4	705	705		705	
EF-7	TOTAL			705	705		705	

REMARKS:

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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: EF-8, EF-9 & EF-10 PAGE: 58

EQUIPMENT DATA	EF-8		EF-9		EF-10	
LOCATION	MAC OS LAB 1215		IOS LAB 1204		ROOF BLDG B	
SERVICE	MAC OS LAB 1215		IOS LAB 1204		BLDG B	
MANUFACTURER	NEDERMAN		NEDERMAN		GREENHECK	
MODEL NUMBER	N10		N10		SBE-3H48-100	
SERIAL NUMBER	583762		583762		14251388 15H	
TYPE	INLINE / CENTRIFUGAL		INLINE / CENTRIFUGAL		PROP	
MOTOR MFG / FRAME	MOTEK / DNA		MOTEK / DNA		BALDOR / 215T	
MOTOR HP	3/4		3/4		10	
MOTOR RPM	3400		3400		1770	
VOLTAGE / PHASE	115 / 1		115 / 1		460 / 3	
FULL LOAD AMPS / SF	8.8 / DNA		8.8 / DNA		12.5 / 1.15	
MOTOR SHEAVE x BORE	DIRECT DRIVE		DIRECT DRIVE		2VP56 x 1-3/8	
FAN SHEAVE x BORE	DIRECT DRIVE		DIRECT DRIVE		11.0 x 2B-SK	
NO. BELT / SIZE	DIRECT DRIVE		DIRECT DRIVE		2 / BX55	
SHEAVE CL DISTANCE	DIRECT DRIVE		DIRECT DRIVE		15-1/2	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL CFM	705	700	705	700	25000	25080
MOTOR RPM	3400	3400	3400	3400	1770	1781
FAN RPM	3230	3400	833	3400	833	828
ESP " W.G.	DNA	0.82	DNA	0.92	1	0.95
DISCHARGE SP " W.G.	DNA	0.36	DNA	0.38	DNA	0.07
SUCTION SP " W.G.	DNA	0.46	DNA	0.54	DNA	0.87
VOLTAGE	115	117	115	117	460	490 / 490 / 492
AMPERAGE	8.8	6.5	8.8	6.6	12.5	10.6 / 9.9 / 10.3
PHASE	1	1	1	1	3	3

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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/7/2015

SYSTEM: EF-8, EF-9 & EF-10 PAGE: 59

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
1215	1	DUCT	4	705	700		700	
EF-8	TOTAL			705	700		700	
1204	1	DUCT	4	705	700		700	
EF-9	TOTAL			705	700		700	
BLDG B	1	DUCT	54 x 55	25000			25080	
EF-10	TOTAL			25000			25080	

REMARKS:

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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: EF-11, EF-12 & EF-13 PAGE: 60

EQUIPMENT DATA	EF-11		EF-12		EF-13	
LOCATION	ROOF BLDG B		ROOF BLDG B		ROOF BLDG B	
SERVICE	BLDG B		BLDG B		BLDG B	
MANUFACTURER	GREENHECK		GREENHECK		GREENHECK	
MODEL NUMBER	SBE-3H48-100		SBE-3H48-100		SBE-3H48-100	
SERIAL NUMBER	14251386 15H		14251385 15H		14251387 15H	
TYPE	PROP		PROP		PROP	
MOTOR MFG / FRAME	BALDOR / 215T		BALDOR / 215T		BALDOR / 215T	
MOTOR HP	10		10		10	
MOTOR RPM	1770		1770		1770	
VOLTAGE / PHASE	460 / 3		460 / 3		460 / 3	
FULL LOAD AMPS / SF	12.5 / 1.15		12.5 / 1.15		12.5 / 1.15	
MOTOR SHEAVE x BORE	2VP56 x 1-3/8		2VP56 x 1-3/8		2VP56 x 1-3/8	
FAN SHEAVE x BORE	11.0 x 2B-SK		11.0 x 2B-SK		11.0 x 2B-SK	
NO. BELT / SIZE	2 / BX55		2 / BX55		2 / BX55	
SHEAVE CL DISTANCE	15-1/2		15-1/2		15-1/2	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL CFM	25000	25110	25000	24960	25000	25005
MOTOR RPM	1770	1780	1770	1780	1770	1781
FAN RPM	833	828	833	827	833	828
ESP " W.G.	1	0.93	1	0.92	1	0.95
DISCHARGE SP " W.G.	DNA	0.08	DNA	0.08	DNA	0.08
SUCTION SP " W.G.	DNA	0.85	DNA	0.84	DNA	0.87
VOLTAGE	460	488 / 489 / 491	460	489 / 490 / 491	460	484 / 485 / 485
AMPERAGE	12.5	10.3 / 9.7 / 10.6	12.5	10.4 / 9.7 / 10.4	12.5	10.5 / 9.9 / 10.4
PHASE	3	3	3	3	3	3

REMARKS:

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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: EF-11, EF-12 & EF-13 PAGE: 61

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
BLDG B	1	DUCT	54 x 55	25000			25110	
EF-11	TOTAL			25000			25110	
BLDG B	1	DUCT	54 x 55	25000			24960	
EF-12	TOTAL			25000			24960	
BLDG B	1	DUCT	54 x 55	25000			25005	
EF-13	TOTAL			25000			25005	

REMARKS:

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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: EF-14, EF-15 & EF-16 PAGE: 62

EQUIPMENT DATA	EF-14		EF-15		EF-16	
LOCATION	ROOF BLDG C		ROOF BLDG C		ROOF BLDG C	
SERVICE	BLDG C		BLDG C		BLDG C	
MANUFACTURER	GREENHECK		GREENHECK		GREENHECK	
MODEL NUMBER	SBE-3H30-50		SBE-3H30-50		SBE-3H30-50	
SERIAL NUMBER	14251390 15H		14251391 15H		14251389 15H	
TYPE	PROP		PROP		PROP	
MOTOR MFG / FRAME	MARATHON / 184T		MARATHON / 184T		MARATHON / 184T	
MOTOR HP	5		5		5	
MOTOR RPM	1755		1755		1755	
VOLTAGE / PHASE	460 / 3		460 / 3		460 / 3	
FULL LOAD AMPS / SF	6.3 / 1.15		6.3 / 1.15		6.3 / 1.15	
MOTOR SHEAVE x BORE	VP65 x 1-1/8		VP65 x 1-1/8		VP65 x 1-1/8	
FAN SHEAVE x BORE	BK80 x QT1		BK80 x QT1		BK80 x QT1	
NO. BELT / SIZE	1 / BX38		1 / BX38		1 / BX38	
SHEAVE CL DISTANCE	9-3/4		9-3/4		9-3/4	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL CFM	10000	10310	10000	10368	10000	10345
MOTOR RPM	1755	1781	1755	1781	1755	1782
FAN RPM	1357	1364	1357	1363	1357	1364
ESP " W.G.	1	0.89	1	0.88	1	0.86
DISCHARGE SP " W.G.	DNA	0.04	DNA	0.04	DNA	0.04
SUCTION SP " W.G.	DNA	0.85	DNA	0.84	DNA	0.82
VOLTAGE	460	491 / 490 / 492	460	491 / 491 / 493	460	491 / 492 / 492
AMPERAGE	6.3	4.0 / 3.9 / 4.0	6.3	4.0 / 3.9 / 3.9	6.3	4.0 / 3.9 / 3.9
PHASE	3	3	3	3	3	3

REMARKS:

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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 9/24/2015

SYSTEM: EF-14, EF-15 & EF-16 PAGE: 63

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
BLDG C	1	DUCT	33 x 36	10000			10310	
EF-14	TOTAL			10000			10310	
BLDG C	1	DUCT	33 x 36	10000			10368	
EF-15	TOTAL			10000			10368	
BLDG C	1	DUCT	33 x 36	10000			10345	
EF-16	TOTAL			10000			10345	

REMARKS:

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AIR APPARATUS REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: EF-17 & EF-18 PAGE: 64

EQUIPMENT DATA	EF-17		EF-18			
LOCATION	ROOF BLDG C		ROOF BLDG A			
SERVICE	BDLG C		TOILET 1007/1008 & LOCKER 1005			
MANUFACTURER	GREENHECK		GREENHECK			
MODEL NUMBER	SBE-3H30-50		G-103HP-VG			
SERIAL NUMBER	14251392 15H		14308377			
TYPE	PROP		MUSHROOM			
MOTOR MFG / FRAME	MARATHON / 184T		GREENHECK			
MOTOR HP	5		1/4			
MOTOR RPM	1755		300-1725			
VOLTAGE / PHASE	460 / 3		120 / 1			
FULL LOAD AMPS / SF	6.3 / 1.15		3.5			
MOTOR SHEAVE x BORE	VP65 x 1-1/8		DIRECT DRIVE			
FAN SHEAVE x BORE	BK80 x QT1		DIRECT DRIVE			
NO. BELT / SIZE	1 / BX38		DIRECT DRIVE			
SHEAVE CL DISTANCE	9-3/4		DIRECT DRIVE			
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
TOTAL CFM	10000	10330	300	294		
MOTOR RPM	1755	1780	300-1725	1414		
FAN RPM	1357	1362	1684	1414		
ESP " W.G.	1	0.88	1	0.27		
DISCHARGE SP " W.G.	DNA	0.04	DNA	0.05		
SUCTION SP " W.G.	DNA	0.84	DNA	0.22		
VOLTAGE	460	491 / 490 / 493	120	112		
AMPERAGE	6.3	4.0 / 3.9 / 3.9	3.5	1.1		
PHASE	3	3	1	1		

REMARKS:

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AIR DISTRIBUTION REPORT

PROJECT: Apple SD01 DATE: 10/1/2015

SYSTEM: EF-17 & EF-18 PAGE: 65

AREA SERVED	OUTLET / INLET			DESIGN	PRELIMINARY	PRELIMINARY	FINAL	NOTE
	NO.	TYPE	SIZE	CFM	CFM	CFM	CFM	
BDLG C	1	DUCT	33 x 36	10000			10330	
EF-17	TOTAL			10000			10330	
1005	1	CEG	6	100	120		98	
1007	2	CEG	6	100	120		100	
1008	3	CEG	6	100	120		96	
EF-18	TOTAL			300	360		294	

REMARKS:

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PUMP APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: PAGE: 66

PUMP DATA	HHWP-1A		HHWP-2A	
LOCATION	ROOF BLDG A		ROOF BLDG A	
SERVICE	B-1		B-2	
MANUFACTURER	BELL & GOSSET		BELL & GOSSET	
SERIES / MODEL NUMBER	E-90 / 1AAB		E-90 / 1AAB	
SERIAL OR ID NUMBER	PV6068-1-B51		PV6068-2-B51	
GPM / FT HEAD	50 / 55		50 / 55	
MOTOR MFG / FRAME	BALDOR / 56J		BALDOR / 56J	
MOTOR HP / RPM	1.5 / 3500		1.5 / 3500	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
GPM	50	48	50	47
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	1.9 / 1.15	1.9	1.9 / 1.15	1.9
PUMP RPM	3500	3537	3500	3536
DISCHARGE - PSIG	DNA	40	DNA	40
SUCTION - PSIG	DNA	16	DNA	15
Δ PRESSURE - PSIG	24 X 2.31 = 55.44 FT. HEAD		25 X 2.31 = 57.75 FT. HEAD	
	BLOCK TIGHT TEST		**BLOCK TIGHT TEST**	
DISCHARGE - PSIG	57.5		58	
SUCTION - PSIG	28		28.5	
Δ PRESSURE - PSIG	29.5 X 2.31 = 68 FT. HEAD		29.5 X 2.31 = 68.14 FT. HEAD	
IMPELLER DIAMETER	4.25		4.25	

REMARKS:

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PUMP APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: HHWP-1B & HHWP-2B PAGE: 67

PUMP DATA	HHWP-1B		HHWP-2B	
LOCATION	ROOF		ROOF	
SERVICE	B-1		B-2	
MANUFACTURER	BELL & GOSSET		BELL & GOSSET	
SERIES / MODEL NUMBER	E-90 / 1.5AA		E-90 / 1.5AA	
SERIAL OR ID NUMBER	PV6385-1		PV6385-2	
GPM / FT HEAD	75 / 55		75 / 55	
MOTOR MFG / FRAME	BALDOR / 56J		BALDOR / 56J	
MOTOR HP / RPM	2 / 3600		2 / 3600	
TEST DATA	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
GPM	75	82	75	82
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	2.5 / 1.15	2.2	2.5 / 1.15	2.2
PUMP RPM	3600	3511	3600	3508
DISCHARGE - PSIG	DNA	35	DNA	33
SUCTION - PSIG	DNA	13	DNA	11
Δ PRESSURE - PSIG	22 X 2.31 = 50.82 FT. HEAD		22 X 2.31 = 50.82 FT. HEAD	
	BLOCK TIGHT TEST		**BLOCK TIGHT TEST**	
DISCHARGE - PSIG	51.5		49.5	
SUCTION - PSIG	23		21.5	
Δ PRESSURE - PSIG	28.5 X 2.31 = 65.83 FT. HEAD		28 X 2.31 = 64.68 FT. HEAD	
IMPELLER DIAMETER	4.25		4.25	

REMARKS:

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PUMP APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: CHWP-1 & CHWP-2 PAGE: 68

PUMP DATA	CHWP-1		CHWP-1	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	CH-1, 2 & 3		CH-1, 2 & 3	
MANUFACTURER	BELL & GOSSET		BELL & GOSSET	
SERIES / MODEL NUMBER	E-1510 / 3BD 9.375 SSF		E-1510 / 3BD 9.375 SSF	
SERIAL OR ID NUMBER	PH015346-A		PH015346-A	
GPM / FT HEAD	230 / 90		230 / 90	
MOTOR MFG / FRAME	BALDOR / 254T		BALDOR / 254T	
MOTOR HP / RPM	15 / 1765		15 / 1765	
TEST DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (2)**
GPM	230	300	230	226
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	18.1 / 1.15	12.8	18.1 / 1.15	12.8
PUMP RPM	1765	1778	1765	1778
DISCHARGE - PSIG	DNA	66.5	DNA	49
SUCTION - PSIG	DNA	28	DNA	42
Δ PRESSURE - PSIG	38.5 X 2.31 = 88.93 FT. HEAD		7 X 2.31 = 16.17 FT. HEAD	
	BLOCK TIGHT TEST		**BLOCK TIGHT TEST**	
DISCHARGE - PSIG	73			
SUCTION - PSIG	34.5			
Δ PRESSURE - PSIG	38.5 X 2.31 = 88.93 FT. HEAD		X 2.31 = FT. HEAD	
IMPELLER DIAMETER	9			

REMARKS:

(1) One pump running at 60Hz.

(2) All three pumps running at 60Hz.

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PUMP APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: CHWP-1 & CHWP-2 PAGE: 69

PUMP DATA	CHWP-2		CHWP-2	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	CH-1, 2 & 3		CH-1, 2 & 3	
MANUFACTURER	BELL & GOSSET		BELL & GOSSET	
SERIES / MODEL NUMBER	E-1510 / 3BD 9.375 SSF		E-1510 / 3BD 9.375 SSF	
SERIAL OR ID NUMBER	PH015346-C		PH015346-C	
GPM / FT HEAD	230 / 90		230 / 90	
MOTOR MFG / FRAME	BALDOR / 254T		BALDOR / 254T	
MOTOR HP / RPM	15 / 1765		15 / 1765	
TEST DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (2)**
GPM	230	300	230	212
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	18.1 / 1.15	13	18.1 / 1.15	13
PUMP RPM	1765	1778	1765	1778
DISCHARGE - PSIG	DNA	67	DNA	49
SUCTION - PSIG	DNA	28	DNA	42
Δ PRESSURE - PSIG	39 X 2.31 = 90.09 FT. HEAD		7 X 2.31 = 16.17 FT. HEAD	
	BLOCK TIGHT TEST		**BLOCK TIGHT TEST**	
DISCHARGE - PSIG	73			
SUCTION - PSIG	34			
Δ PRESSURE - PSIG	39 X 2.31 = 90.09 FT. HEAD		X 2.31 = FT. HEAD	
IMPELLER DIAMETER	9			

REMARKS:

(1) One pump running at 60Hz.

(2) All three pumps running at 60Hz.

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PUMP APPARATUS REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: CHWP-3 PAGE: 70

PUMP DATA	CHWP-3		CHWP-3	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	CH-1, 2 & 3		CH-1, 2 & 3	
MANUFACTURER	BELL & GOSSET		BELL & GOSSET	
SERIES / MODEL NUMBER	E-1510 / 3BD 9.375 SSF		E-1510 / 3BD 9.375 SSF	
SERIAL OR ID NUMBER	PH015346-B		PH015346-B	
GPM / FT HEAD	230 / 90		230 / 90	
MOTOR MFG / FRAME	BALDOR / 254T		BALDOR / 254T	
MOTOR HP / RPM	15 / 1765		15 / 1765	
TEST DATA	**DESIGN**	**TESTED (1)**	**DESIGN**	**TESTED (2)**
GPM	230	300	230	213
VOLTAGE / PHASE	460 / 3	460	460 / 3	460
AMPERAGE / SF	18.1 / 1.15	12.8	18.1 / 1.15	12.8
PUMP RPM	1765	1778	1765	1778
DISCHARGE - PSIG	DNA	66	DNA	49
SUCTION - PSIG	DNA	27.5	DNA	42
Δ PRESSURE - PSIG	38.5 X 2.31 = 88.93 FT. HEAD		7 X 2.31 = 16.17 FT. HEAD	
	BLOCK TIGHT TEST		**BLOCK TIGHT TEST**	
DISCHARGE - PSIG	73			
SUCTION - PSIG	34.5			
Δ PRESSURE - PSIG	38.5 X 2.31 = 88.93 FT. HEAD		X 2.31 = FT. HEAD	
IMPELLER DIAMETER	9			

REMARKS:

(1) One pump running at 60Hz.

(2) All three pumps running at 60Hz.

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FLUID FLOW MEASURING STATION REPORT

PROJECT: Apple SD01 DATE: 10/8/2015

SYSTEM: Chilled Water PAGE: 71

SERVICE OR DESIGNATION	SIZE	MFG. / MODEL	DESIGN GPM	FINAL ADJ. % OR ° CLOSED	FINAL VALVE ΔP	FINAL GPM	NOTE
AHU-1	3	TA	92	8.0	0.80	83	
AHU-2	3	TA	92	8.0	0.80	83	
AHU-3	4	GRUVLOK / GBV4G	230	6.0	1.30	240	
AHU-4	4	GRUVLOK / GBV4G	230	4.0	4.5	240	

REMARKS:

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CHILLER TEST REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: CH-1, CH-2 & CH-3 PAGE: 72

UNIT DATA	CH-1		CH-2	
LOCATION	ROOF BLDG B		ROOF BLDG B	
SERVICE	CHILLED WATER		CHILLED WATER	
MANUFACTURER	YORK		YORK	
TYPE / SIZE	EVAP / 100		EVAP / 100	
MODEL NUMBER	YLAA		YLAA	
SERIAL OR I.D. NUMBER	YLAA010DSE			
EVAPORATOR	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
GPM	230	226	230	212
DELTA PRESSURE FT HEAD	DNA	9.24	DNA	8
ENTERING PRESSURE FT HEAD	DNA	57	DNA	55.5
LEAVING PRESSURE FT HEAD	DNA	53	DNA	52
ENTERING TEMPERATURE °F	54	54	54	54
LEAVING TEMPERATURE °F	44	44	44	44
CONDENSER	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
GPM				
DELTA PRESSURE FT HEAD				
ENTERING PRESSURE FT HEAD				
LEAVING PRESSURE FT HEAD				
ENTERING TEMPERATURE °F				
LEAVING TEMPERATURE °F				

REMARKS:

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CHILLER TEST REPORT

PROJECT: Apple SD01 DATE: 9/26/2015

SYSTEM: CH-1, CH-2 & CH-3 PAGE: 73

UNIT DATA	CH-3			
LOCATION	ROOF BLDG B			
SERVICE	CHILLED WATER			
MANUFACTURER	YORK			
TYPE / SIZE	EVAP / 100			
MODEL NUMBER	YLAA			
SERIAL OR I.D. NUMBER	YLAA010DSE			
EVAPORATOR	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
GPM	230	213		
DELTA PRESSURE FT HEAD	DNA	8		
ENTERING PRESSURE FT HEAD	DNA	55.5		
LEAVING PRESSURE FT HEAD	DNA	52		
ENTERING TEMPERATURE °F	54	54		
LEAVING TEMPERATURE °F	44	44		
CONDENSER	**DESIGN**	**TESTED**	**DESIGN**	**TESTED**
GPM				
DELTA PRESSURE FT HEAD				
ENTERING PRESSURE FT HEAD				
LEAVING PRESSURE FT HEAD				
ENTERING TEMPERATURE °F				
LEAVING TEMPERATURE °F				

REMARKS:

ER