

Ldn Consulting, Inc.

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December 19, 2018

Lauren Schulte
Woodcrest Homes
1410 Main Street, Suite C
Ramona, CA 920659

Subject: Lavender & Olive Major Use Permit Event Noise Assessment – County of San Diego

Ldn Consulting is pleased to submit the following noise evaluation for the special events located at 633 Montecito Way, Ramona, in the unincorporated part of San Diego County. The parcel is 5.016 acres and currently includes a single-family dwelling (SFD), swimming pool, several patios, septic/reserve field (for the residence), and landscaping. The purpose of this study is to determine the property line noise levels during an event located at the site.

Project Description/Purpose

Lavender & Olive (L&O) will provide a public event space, available to rent seven (7) days a week from 10am to 10pm. Events held at L&O will include: weddings, corporate gatherings, birthdays, community events, and various other social gatherings. The overall project site is shown in Figure 1 and the general event area is identified. The event area layout is provided in Figure 2.

Events at L&O will allow a maximum capacity of 225 people, including employees and subcontracted staff. Up to 18 (14 trailer and 4 B&B) guests will have the option to stay a maximum of two nights in a self-contained trailer or at the B&B, prior to and/or after the event, with departure occurring the next day. The overnight accommodations would consist of the use of the SFD to include a Bed and Breakfast (B&B), with a maximum occupancy of six (6) people (including the owners) and seven (7) vintage trailers for optional wedding party overnight stays (maximum capacity = 2 person per trailer).

All noise generating sources (live music, DJ, background music, etc.) will respect all applicable noise curfew time frames.

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GENERAL NOTES

- Signage identifying the property is not located within the tract assessment and must appropriate setbacks for its height.
- Tank is stored in shed or open trailer.
- Springs are used to clean black and hoses, they are kept in covered bins in back corner. Bedding material is contained in manufactured bags and collected in hay barn.
- Since all events are performed under natural lighting, outdoor lighting is provided on an as need basis used only during special events, in times of the year where it would be too dark to see safely. Up to four medium sized light towers, not to exceed 10' tall, are placed along the pathway between the existing trails and the parking lot. No light shall spill onto or beyond the property line.

MANURE MANAGEMENT PLAN

Copper Meadows will abide by all Manure Management guidelines as stated in 31306.

In lieu of storing accumulated manure, waste is collected daily and disposed through a manure separator within the western 20 acres. This method of manure management complies with a recommendation obtained from the Regional Water Quality Board. This will help prevent the violation of rules and reduces unwanted concentration of odors.

Any and all manure management areas shall meet the Animal Enclosure setbacks.

ZONING STATEMENT

I, the property owner, understand that the Horse Stable proposed at 833 Montecito Way, Ramona, CA 92065, shall comply with the requirements of the County of San Diego Chapter Ordinance, Short-term Ordinance, Withdrawal Protection Ordinance, Zoning Ordinance, and regulations related to Noise Abatement and Control, Public Safety Matter and All Contaminants, Code and Vector Control of the San Diego County Code of Regulatory Ordinances.

If the Horse Stable permitted and installed on my property at any time does not meet the requirements of these ordinances, I understand that the County of San Diego will take enforcement action to bring the Horse Stable into compliance with current requirements.

Signed, _____ Printed Name _____ Date _____

SPECIAL EVENT DESCRIPTION

Copper Meadows (CM) is a Family Experiential Equestrian Facility located at 833 Montecito Way, Ramona, CA. Hosting approximately 20 acres over six special events, CM hosts three events per year: March, June and September. Each event lasts up to five consecutive days in length, with a minimum of one week between each event. Each event encompasses a specific theme and includes a variety of activities for participants and spectators. On average there are 125 participants with an additional 250 observers per event.

Other activities held at CM (not subject to Section 6700) include "unscripted" events such as Look Before You Leap and "Sun Series". These would be considered clinics or private training sessions.

Hours of operation are from 7am till dusk, with all events starting after 8am and ending by 5pm.

Access to the property is via Montecito Way through one of two driveways. There is ample on-site parking for all participants + spectators via Two parking lots that total over 3 acres with an entire 4.5 acres for horse trailers, loading docks and potential overflow parking.

PLOT PLAN ABBREVIATIONS & SPECIAL SYMBOLS

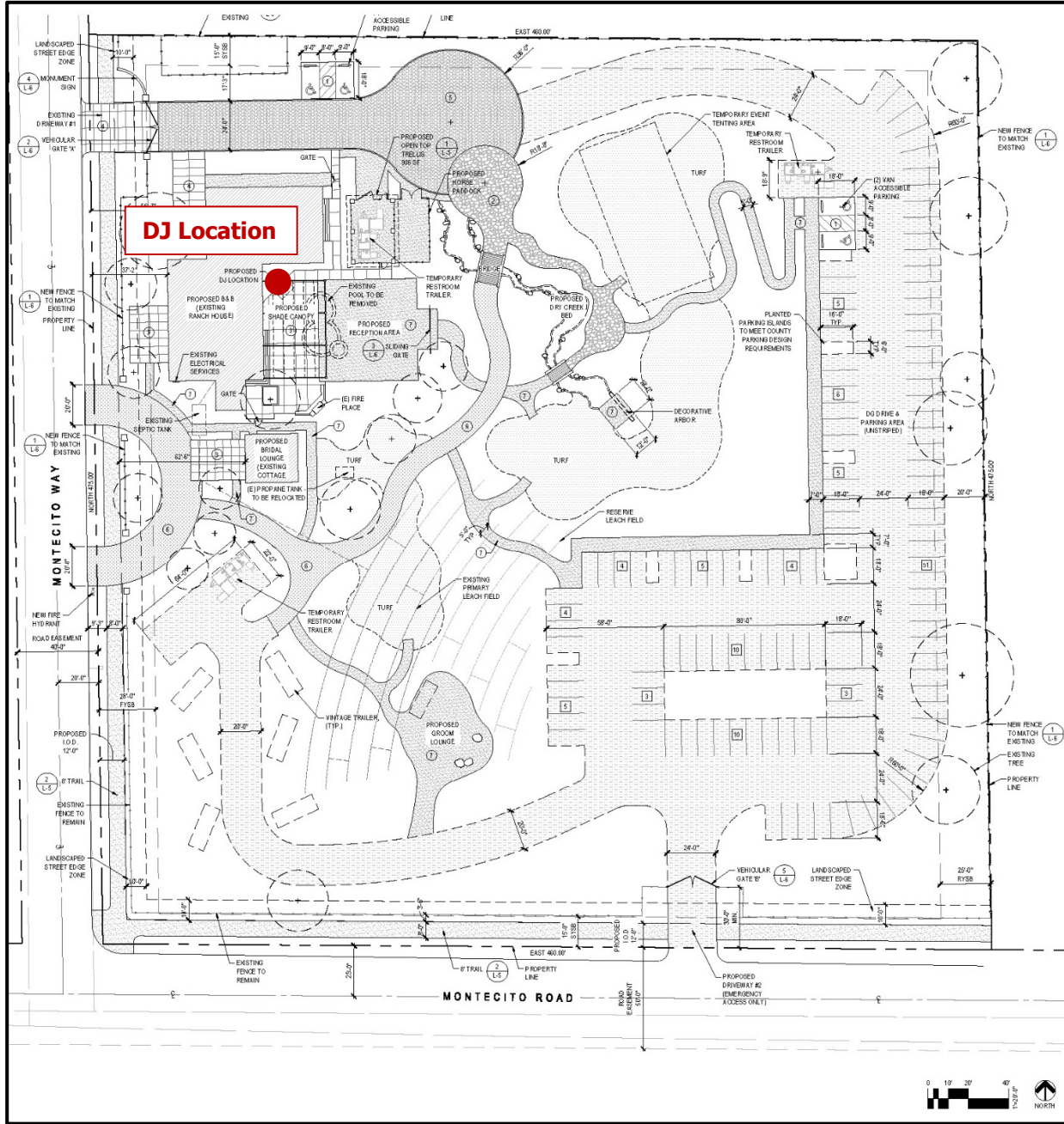
FPP	FIRE PLAN POSTING
X	ANNOUNCER'S SPEAKER
H	HOSE BIB
L	10' x 35' LOADING AREA (SEE NORTHWEST VACANT LAND AREA CAN BE USED AN ADDITIONAL LOADING AREAS)
O	INDOOR LIGHTING
M	MOBILE LIGHT TOWER

PROPERTY OWNED UNDER SAME OWNERSHIP AS SUBJECT PROPERTY

SUBJECT PROPERTY

PLOT PLAN

Figure 2: Event Area Layout



Operational Noise Standards

Section 36.404 of the County of San Diego Noise Ordinance provides performance standards and noise control guidelines for determining and mitigating non-transportation, or stationary, noise source impacts to adjacent properties. The purpose of the noise ordinance is to protect, create and maintain an environment free from noise and vibration that may jeopardize the health or welfare, or degrade the quality of life. The noise level limits are provided in Table 1 below.

Table 1: San Diego County Code Section 36.404
SOUND LEVEL LIMITS IN DECIBELS (dBA)

ZONE		APPLICABLE LIMIT ONE-HOUR AVERAGE SOUND LEVEL (DECIBELS)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, and R-U Use Regulations with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
R-RO, R-C, R-M, C-30, S-86, R-V, R-U and V5. Use Regulations with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
S-94, V4, and all other commercial zones.	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
V1, V2	7 a.m. to 7 p.m.	60
V1, V2	7 p.m. to 10 p.m.	55
V1	10 p.m. to 7 a.m.	55
V2	10 p.m. to 7 a.m.	50
V3	7 a.m. to 10 p.m.	70
	10 p.m. to 7 a.m.	65
M-50, M-52, M-54	Anytime	70
S-82, M-58, and all other industrial zones.	Anytime	75

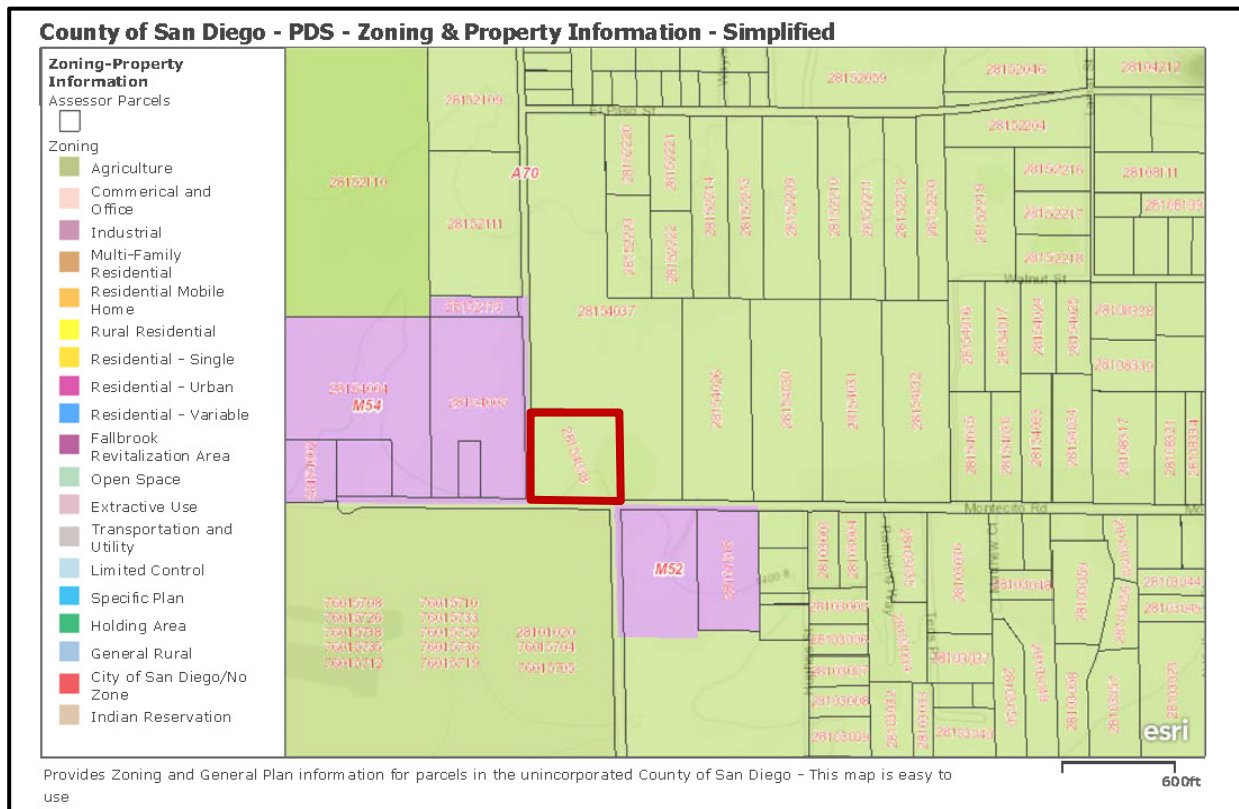
(a) If the measured ambient level exceeds the applicable limit noted above, the allowable one hour average sound level shall be the ambient noise level, plus three decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating.

(b) The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones; provided however, that the one-hour average sound level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone which the extractive industry is actually located.

The project site as well as all adjacent land to the northwest, northeast, south and east are zoned A-70. The properties to the west and southeast are zoned M-54 and M-52, respectively. The applicable hourly property line standards are 45 dBA for the most restrictive nighttime hours of 10 pm to 7 am and 50 dBA during the daytime hours of 7 am and 10 pm at the properties zoned A-70. The properties zoned M-52 and M-54 have a noise threshold of 70 dBA, anytime.

The Project events only occur during the daytime, typically 7 am through 10 pm and the HVAC could operate during the nighttime hours of 10pm to 7am. Thus, the daytime noise level limits at the properties zoned A-70 is 50 dBA (daytime) and 45 dBA (nighttime). The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. Therefore, the daytime noise level limits at the properties to the west and southeast (zoned M52 and M54) would be 60 dBA (daytime) and 57.5 dBA (nighttime). The zoning and land uses surrounding the site is shown in Figure 3.

Figure 3: Zoning and Land Uses Surrounding the Site



Noise Levels from Events

To determine the noise level environment during the events and potential noise impacts, noise measurements were taken at five locations at the nearest property lines to the west, north and east, as can be seen in Figure 3. The noise measurements were taken on Tuesday, September 4th to capture the planned events. The operational noise levels consisted of a DJ system between 3 pm and 4 pm.

The noise measurements were taken using a Larson-Davis LxT - Type 1 sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form at a distance of 25 feet from the speakers with the noise meter located centrally between both speakers. The remainder of the noise measurements, taken at the property lines, were taken using Larson-Davis Sparks - Type 2 sound level meters. The sound level meters were equipped with a windscreen during all measurements. The sound level meters were calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 150.

Initial noise measurements were taken at a distance of 25 feet from the speakers were found to be an average of 80.5 dBA. This resulted in an overall noise level of 54.9 dBA at monitoring location 2, located directly north of the proposed DJ location. The noise levels at the northern property line was blocked or substantially reduced by existing structure and an 8 foot high fencing at the proposed temporary restroom trailer (as can be seen in Figure 3).

The volume on the DJ system was then reduced until the noise level at the sound level meter, located 25 feet away, averaged 75.6 dBA. The music was then repeated at the same volume to gather the measurements along the western, northern and eastern property lines. The results from the noise testing with the volume adjusted and the shielding from the residential structure and 8 foot fencing are provided in Table 2 for all the monitoring locations. The noise monitoring results are provided in ***Attachment A***.

It should be noted: during the measurements, along the southern property line, background noise from air traffic and adjacent vehicular traffic on Montecito Way impeded the measurements. Thus, the results at the southern property line shown in Table 2 are based on the results found along the eastern property line (i.e., monitoring location M4).

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Figure 3: Noise Monitoring Locations

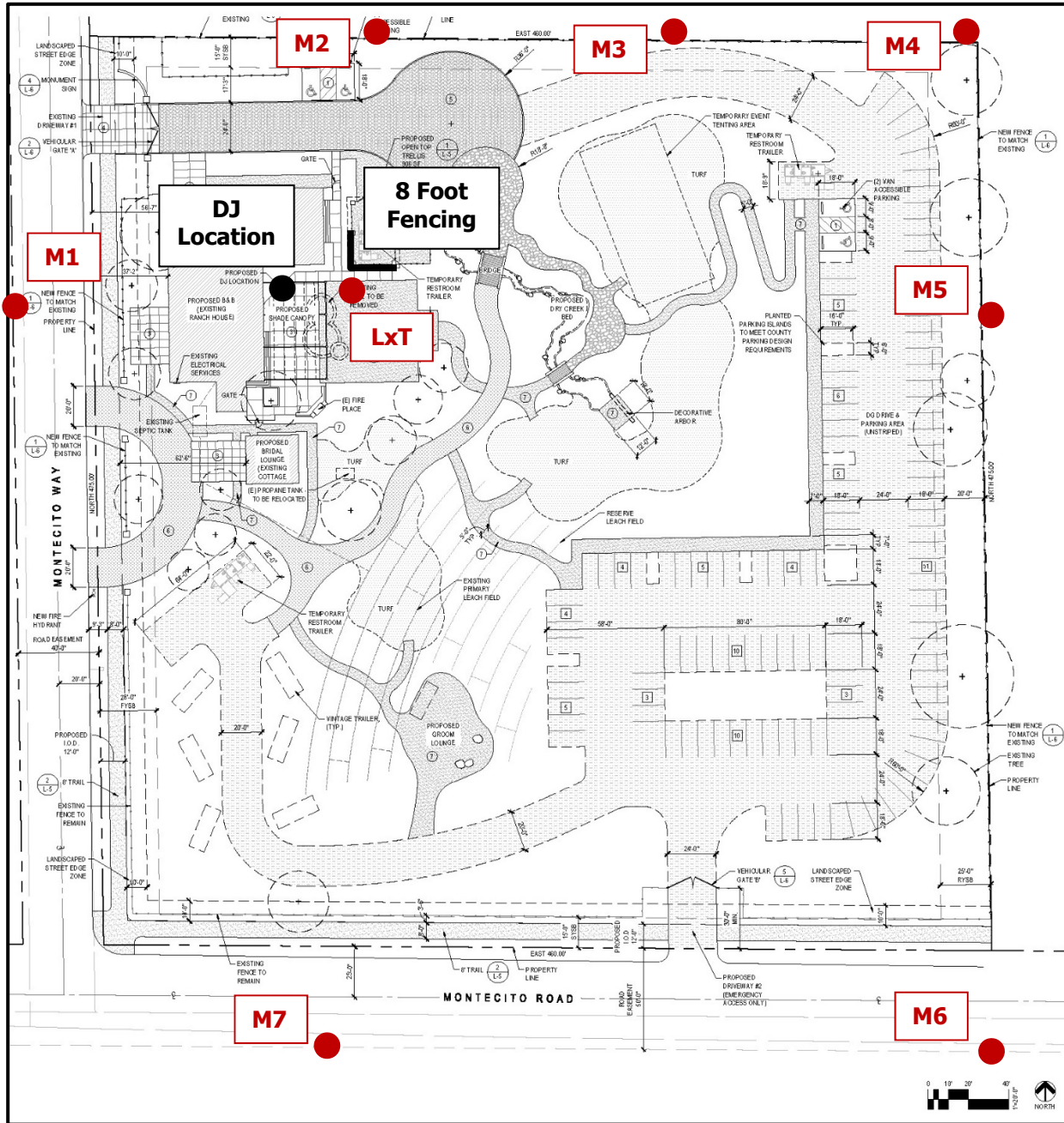


Table 2: Noise Level Measurements

Noise Measurement	Property Line	Distance to Event Noise (Feet)	Overall Noise Levels (dBA Leq)	Daytime Property Line Threshold (dBA Leq)	Complies with Property Line Thresholds
LxT	In Front of Speakers	25	75.6	n/a	n/a
M1	West	135	51.2	60	Yes
M2	North	135	50.2	50	Yes
M3	North	205	48.8	50	Yes
M4	Northeast	360	46.6	50	Yes
M5	East	350	48.3	50	Yes
M6	Southeast	490	45.4*	60	Yes
M7	South	370	47.8*	50	Yes

*Attempted noise measurements at Monitoring locations M6 and M7 were corrupted due to traffic along the adjacent roadway and the anticipated Noise Levels provided are based on measurements taken at M5 and increased distance.

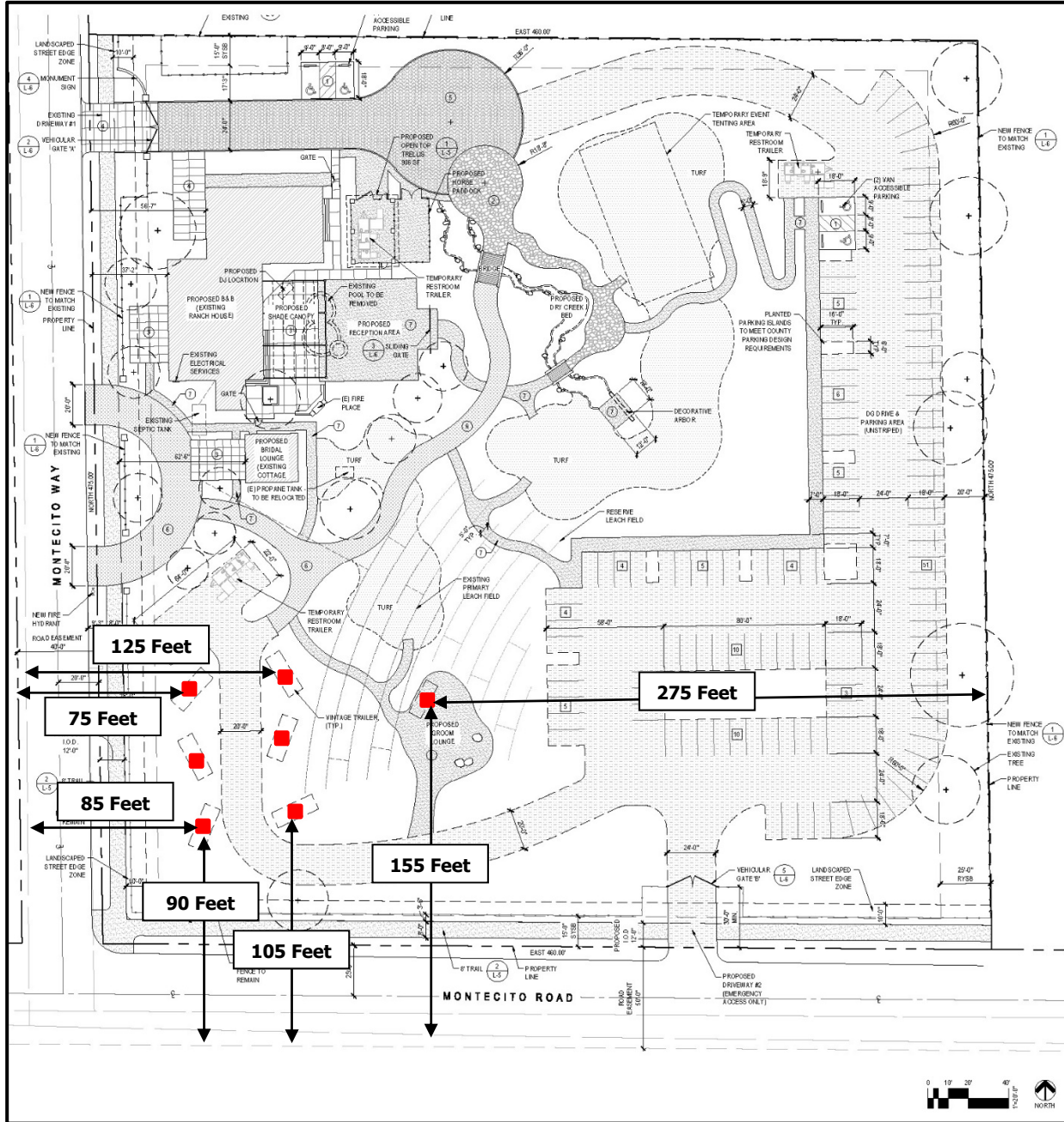
It was determined, based on the on-site measurements that the proposed event activities would be in compliance with the County's 50 dBA CNEL daytime noise standard with the noise levels from the DJ speakers were limited to 75 dBA at a distance of 25 feet in front of the speakers. The event noise would not comply with the County's 45 dBA nighttime standards. Therefore, it is recommended that events end prior to 10 pm to remain in compliance with the County's more restrictive nighttime standard of 45 dBA.

Noise Levels from HVAC

Mini HVAC systems will be included on the seven guest trailers located in the southwestern portion of the site. The project proponent has specified Atwood HVAC units (16,000 BTU Equivalent Air Conditioner (13.5k System)) with a reference noise level of 66 dBA at 3-feet (*Source: Atwood Air Conditioners – Retrieved September 2018*). The manufacturer's specifications and noise levels are provided in **Attachment B**. The locations of the proposed HVAC units are shown in Figure 4.

The HVAC units may operate during the nighttime hours of 10:00 pm and 7:00 am. The noise levels for each source along with the calculated cumulative noise levels are based upon a conservative approach that all the noise producing equipment is operating at the same time. The western and southern property lines are the closest to the noise sources and considered to be the areas for potential impacts. The zoning for the western property line is M-54 with a nighttime standard of 57.5 dBA. The southern property line is zoned A-70 with a 45 dBA nighttime standard.

Figure 4: Locations of the proposed HVAC Units



Using a point-source noise prediction model, calculations of the expected operational noise impacts were completed. The reference noise levels provided by the manufacturer are measured at a distance of 3-feet from the condenser units. The results of the propagated noise levels for the southern and western property lines are shown in Table 3 and Table 4. The operational noise levels are in compliance with both the daytime and nighttime property line thresholds and no impacts are anticipated.

Table 3: HVAC Noise Levels (Southern Property Line)

Source	Distance to Observer Location (Feet)	Reference Noise Level (dBA) *	Reference Distance (Feet)	Noise Reduction Due to Distance (dBA)	Property Line Noise Level (dBA)
AC Units	90	66	3	-29.5	36.5
	105			-30.9	35.1
	125			-32.4	33.6
	135			-33.1	32.9
	160			-34.5	31.5
	165			-34.8	31.2
	155			-34.3	31.7
Combined Cumulative Noise Level at Property Line:					42.1

Table 4: HVAC Noise Levels (Western Property Line)

Source	Distance to Observer Location (Feet)	Reference Noise Level (dBA) *	Reference Distance (Feet)	Noise Reduction Due to Distance (dBA)	Property Line Noise Level (dBA)
AC Units	75	66	3	-28.0	38.0
	80			-28.5	37.5
	85			-29.0	37.0
	125			-32.4	33.6
	125			-32.4	33.6
	125			-32.4	33.6
	200			-36.5	29.5
Combined Cumulative Noise Level at Property Line:					43.9

Cumulative Operational Noise

It is possible to calculate the cumulative noise levels from the proposed project at the nearest property lines from the proposed noise sources. It should be noted: only the HVAC operations will occur during the nighttime hours and no impact was anticipated as identified above. Table 5 shows the cumulative noise levels from the daytime operations for the nearest potential affect property line to the south. The cumulative noise level was found to be 50 dBA and will meet the County's daytime thresholds. Additionally, the noise sources will not be operating continuously, therefore, no Impacts are anticipated and no mitigation is required.

Table 5: Cumulative Noise Levels (Southern Property Line)

Noise Source	Noise Level @ Property Line (dBA)
HVAC	42.1
Events	47.8
Cumulative Noise Level (dBA)	48.8
County Daytime Threshold (dBA)	50
Impact	No

Based upon the property line noise levels determined above none of the proposed noise sources directly or cumulatively exceeds the property line standards at the shared commercial and residential property lines. Therefore, the proposed development related operational noise levels comply with the daytime and nighttime noise standards at the adjacent property lines. No Impacts are anticipated and no mitigation is required.

Construction Noise Levels

The project is only proposing minimal earthwork to create small pads for the proposed guest trailers, the tent area and reconstruction of the pool area. The earthwork will be done with a single skip loader and will occur all in a single phase. No water truck will be required due to the size of the sight, access to a water supply line and the fact that the earthwork operations will only occur for a few weeks. Based on noise emissions from empirical data the reference noise level for the skip loader is anticipated to be 74 dBA at a distance of 50 feet. The earthwork activities are located at distances of 75-150 from the nearest property lines.

Based on the limited equipment list and empirical noise levels, no impacts are anticipated and no mitigation is needed to meet the County's 75-dBA 8-hour standard and no impacts are anticipated and no mitigation is required to comply with Section 36.409 of the County of San Diego Noise Ordinance. No blasting or impulsive noise is proposed for this project. Therefore, the project would not create any impulsive noise levels that exceed Section 36.410 of the County of San Diego Noise Ordinance.

Transportation Noise Levels

To determine if direct or cumulative off-site noise level increases associated with the proposed project would create traffic noise impacts. The traffic volumes for the existing conditions were compared with the traffic volume increase of existing plus the proposed project. The project's traffic assessment states that the proposed project generates 180 daily trips for a special event (Source: Lavender & Olive Event Focused Traffic Analysis – Darnell and Associates, 2018). The existing average daily traffic volumes, according to SANDAG, are 600 along Montecito Way and 1,100 ADT along Montecito Road adjacent to the site.

Typically, the minimum change in sound level that the human ear can detect is approximately 3 decibels. This requires a project to double (or add 100%) to the traffic volumes to have a direct impact of 3 dBA CNEL or be a major contributor to the cumulative traffic volumes. The project will add less than a 30% increase to the exiting roadway volumes and no direct impacts are anticipated. Cumulatively the traffic volumes along the roadway segments are expected to potentially double but the project related increase would be minimal (less than 15%) of the overall increase and therefore no impacts are anticipated. The project related traffic noise level increases on the two adjacent roadways can be seen in Table 6.

Table 6: Traffic Related Noise Levels (dBA CNEL)

Roadway Segment	Existing Noise Level @ 50-Feet	Existing + Project Noise Level @ 50-Feet	Project Increase	Cumulative Noise Level @ 50-Feet	Cumulative + Project Noise Level @ 50-Feet	Project Increase
Montecito Way	54.9	56.0	1.1	57.9	58.5	0.6
Montecito Road	59.8	60.5	0.7	62.8	63.2	0.4
Sound Levels provided are worst-case and do not take into account topography or shielding from barriers.						

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Based on the findings, the project is in compliance with the County's Noise Element of the General Plan and the Noise Ordinance. If you have any questions, please contact me directly at (760) 473-1253 or jlouden@ldnconsulting.net.

Sincerely,
Ldn Consulting, Inc.

DRAFT

Jeremy Loudon, Principal

Attachments: A - Noise Measurement Results
 B – HVAC Noise Specifications

General Information			
Serial Number			02412
Model			LxT1
User			
Job Description			
Location			
File Name			LxT_Data.227

Start Time	Tuesday, 2018 September 4	15:16:16
Stop Time	Tuesday, 2018 September 4	16:04:09
Run Time		00:47:53
Pre Calibration		
Post Calibration		
Calibration Deviation		

Note

Overall Data			
Leq		75.6	dBA
Lmax	(4 Sep 2018 15:52:06)	88.6	dBA
Lpeak (max)	(4 Sep 2018 15:50:41)	103.4	dBA
Lmin	(4 Sep 2018 16:02:42)	40.6	dBA
LE		115.1	dBA
SE		36.0	mPa ² hr
SE(8)		360.8	mPa ² hr
SE(40)		1.8	Pa ² hr
Overload?			No

1/1 Spectra												
Freq. (Hz)	8.0	16.0	31.5	63.0	125	250	500	1000	2000	4000	8000	16K
Leq	7.3	5.6	23.8	67.7	64.0	60.2	70.9	74.9	74.0	74.2	69.3	55.0
Max	7.3	4.7	26.9	70.1	65.2	60.7	73.3	86.7	81.1	79.4	74.7	62.1
Min	7.3	4.7	4.3	16.6	20.5	26.1	31.6	33.4	35.0	33.6	25.9	16.7
1/3 Spectra												
Freq. (Hz)	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
Leq	3.4	2.4	1.7	0.8	0.6	1.3	4.2	8.8	23.7	41.0	62.0	66.3
Max	3.4	2.4	1.7	0.7	-0.1	-0.9	-1.5	3.8	26.9	38.9	65.8	68.3
Min	3.4	2.4	1.7	0.7	-0.1	-0.9	-1.7	-2.3	1.1	2.8	8.7	11.5
Freq. (Hz)	100	125	160	200	250	315	400	500	630	800	1000	1250
Leq	61.2	58.5	57.2	50.1	52.6	58.8	63.3	66.9	67.4	67.6	71.9	70.2
Max	62.2	60.7	57.7	44.6	53.3	59.5	62.4	67.3	72.4	76.4	85.4	80.3
Min	11.8	14.6	18.1	18.5	20.5	23.2	25.2	25.9	27.3	27.7	28.2	29.9
Freq. (Hz)	1600	2000	2500	3150	4000	5000	6300	8000	10K	12.5K	16K	20K
Leq	69.2	70.2	67.7	68.8	70.0	69.4	66.7	64.2	60.5	54.6	39.2	26.8
Max	78.9	77.3	72.9	74.3	75.5	75.3	72.1	69.4	66.6	61.7	45.8	32.7
Min	29.3	29.1	31.1	30.2	28.2	26.1	23.5	20.5	16.9	14.0	11.1	9.5

General Information			
Serial Number			02995
Model			706
User			
Job Description			
Location			
Start Time	Thursday, 23 August 2018	14:28:40	
Stop Time	Thursday, 23 August 2018	22:52:40	
Run Time		08:24:00	
Pre Calibration			
Post Calibration			
Calibration Deviation			
Sample Interval			

Note

Results			
		Dose 1	
Dose		13.9	%
Projected Dose		13.2	%
Leq		51.2	dBA
TWA		51.2	dBA
TWA (8)		51.4	dBA
Lmax		73.7	dBA
Lpeak (max)		110.2	dB
SEA		---	dB
Lmin		40.0	dBA
Lep (8)		51.4	dBA
SE		0.0	Pa ² hr
Overload?		No	

General Information			
Serial Number			02996
Model			706
User			
Job Description			
Location			
Start Time	Tuesday, 4 September 2018	15:19:28	
Stop Time	Tuesday, 4 September 2018	16:10:28	
Run Time		00:51:00	
Pre Calibration			
Post Calibration			
Calibration Deviation			
Sample Interval			

Note

Results			
		Dose 4	
Dose		0.1	%
Projected Dose		1.0	%
Leq		50.2	dBA
TWA		50.2	dBA
TWA (8)		47.2	dBA
Lmax		79.1	dBA
Lpeak (max)		110.8	dB
SEA		---	dB
Lmin		39.6	dBA
Lep (8)		45.2	dBA
SE		0.0	Pa ² hr
Overload?			No

General Information			
Serial Number			02998
Model			706
User			
Job Description			
Location			
Start Time	Tuesday, 4 September 2018	15:21:43	
Stop Time	Tuesday, 4 September 2018	16:11:43	
Run Time			00:50:00
Pre Calibration			
Post Calibration			
Calibration Deviation			
Sample Interval			

Note

Results			
		Dose 4	
Dose		0.0	%
Projected Dose		0.3	%
Leq		48.8	dBA
TWA		48.8	dBA
TWA (8)		45.2	dBA
Lmax		65.7	dBA
Lpeak (max)		102.6	dB
SEA		---	dB
Lmin		36.6	dBA
Lep (8)		39.6	dBA
SE		0.0	Pa ² hr
Overload?			No

General Information			
Serial Number			21731
Model			703+
User			
Job Description			
Location			
Start Time	Tuesday, 4 September 2018	15:24:34	
Stop Time	Tuesday, 4 September 2018	16:13:34	
Run Time			00:49:00
Pre Calibration			
Post Calibration			
Calibration Deviation			
Sample Interval			

Note

Results			
		Dose 4	
Dose		0.5	%
Projected Dose		4.6	%
Leq		46.6	dBA
TWA		46.6	dBA
TWA (8)		44.7	dBA
Lmax		80.3	dBA
Lpeak (max)		111.2	dB
SEA		---	dB
Lmin		40.4	dBA
Lep (8)		51.7	dBA
SE		0.0	Pa ² hr
Overload?			No

General Information			
Serial Number			21732
Model			703+
User			
Job Description			
Location			
Start Time	Tuesday, 4 September 2018	15:25:57	
Stop Time	Tuesday, 4 September 2018	16:14:57	
Run Time			00:49:00
Pre Calibration			
Post Calibration			
Calibration Deviation			
Sample Interval			

Note

Results			
		Dose 4	
Dose		0.1	%
Projected Dose		0.9	%
Leq		48.3	dBA
TWA		48.3	dBA
TWA (8)		44.5	dBA
Lmax		75.0	dBA
Lpeak (max)		112.9	dB
SEA		---	dB
Lmin		37.4	dBA
Lep (8)		44.5	dBA
SE		0.0	Pa ² hr
Overload?			No



16 & 18K EQUIVALENT AIR CONDITIONERS



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Best Function



More Features

CLASS LEADING AIR CONDITIONERS



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Atwood offers 2 class leading AC models:

- 16,000 BTU Equivalent Air Conditioner (13.5k System)
 - Outperforms leading competitors 15k units
 - Can be started with a 2,000w generator
 - Run dual AC's on one 30 amp circuit
- 18,000 BTU Equivalent Air Conditioner (15.0k System)
 - Industries most powerful air conditioner
 - Comes standard with a heat pump



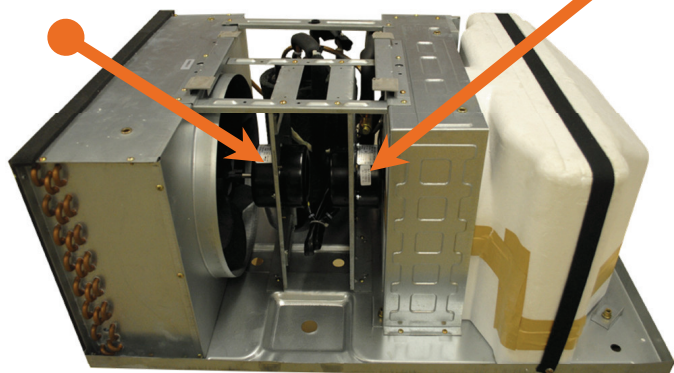
Plus you get...

- The quietest
- The lightest
- And the most features

DUAL MOTOR DESIGN



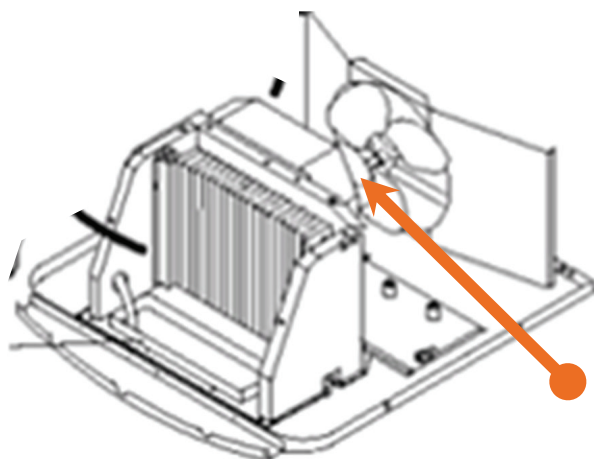
askforatwood.com



Dual Motor Design

- Separate condenser fan and blower fan motors
- Lower AMP draw
- Ultra quiet
- Allows for a consistent condenser fan speed regardless of blower fan speed

Brand X



Single Motor Design

- One motor runs condenser and blower
- Heavy AMP draw
- Loud
- Condenser fan and blower forced to run at the same speed (inefficient)



- Testing was performed inside an environmental chamber at Progressive Engineering in Goshen, IN
- The Atwood Aircommand 16.0k Equivalent (13.5k) was tested against the Dometic 15.0k Brisk Air II.
- The same Fifth Wheel was used to test both air conditioner units.
- Items tested:
 - Cooling Performance
 - AMP Draw
 - Air Flow
 - Noise Level

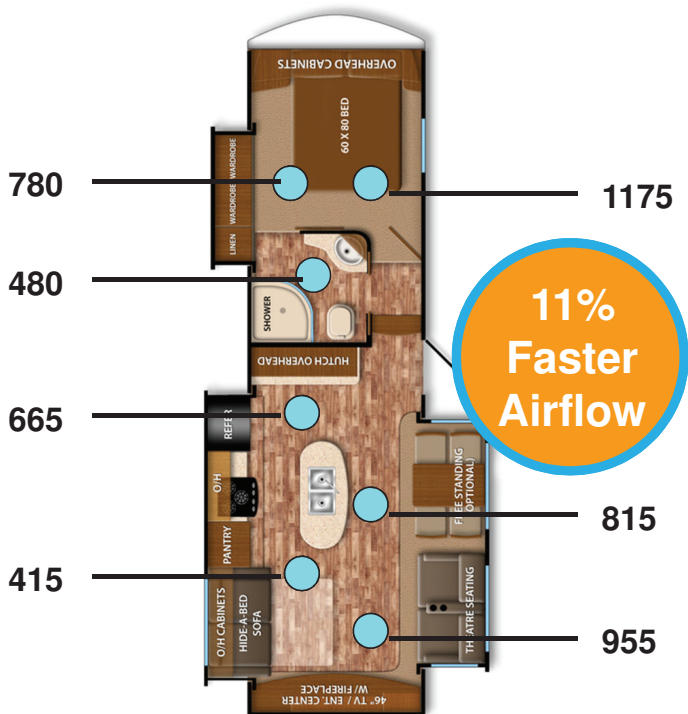


AIR FLOW COMPARISON



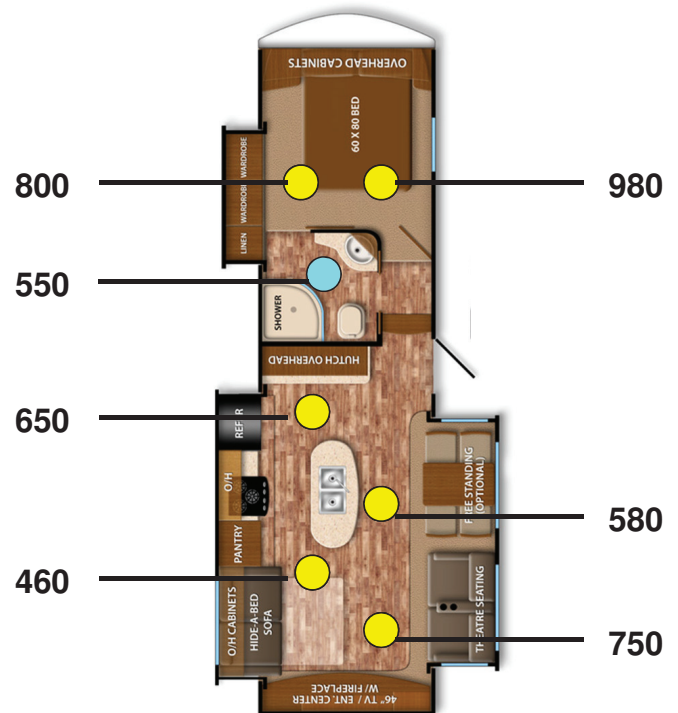
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**ATWOOD
AIRCOMMAND 16.0K EQ**



TOTAL AIRFLOW = 5,285

**DOMETIC
BRISK AIR II (15.0K)**



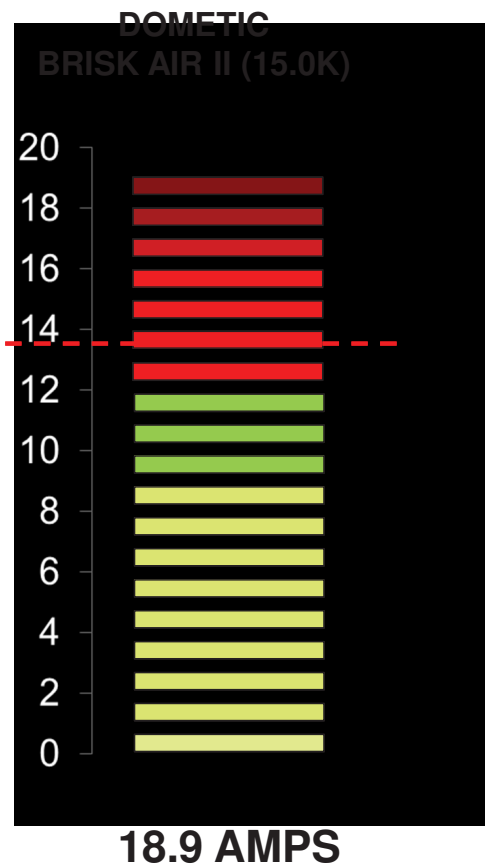
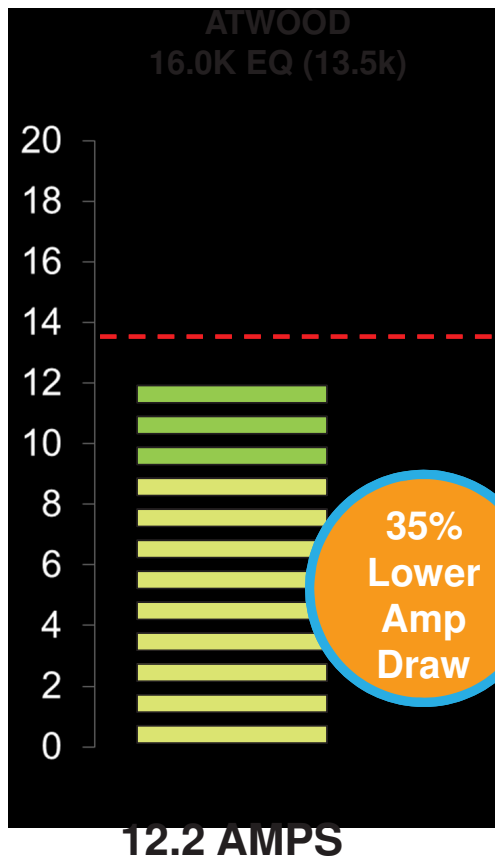
TOTAL AIRFLOW = 4,770

Testing Parameters: An airflow meter (Anemometer) was used to measure the approximate speed of the air exiting each of the 7 air ducts throughout the test unit.

POWER DRAW (~108)



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What Can You Run On 30 Amp Service?

ATWOOD

Air Conditioner	12 Amps
Refrigerator	4 Amps
Microwave	8 Amps
Television	2 Amps
Computer	2 Amps

DOMETIC

Air Conditioner	19 Amps
Refrigerator	4 Amps
Microwave	8 Amps
Television	2 Amps
Computer	2 Amps

NOISE TESTING



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**ATWOOD
AIRCOMMAND 16.0K EQ**



Twice
As Quiet

NOISE LEVEL = 64 - 67db

**DOMETIC
BRISK AIR II (15.0K)**



NOISE LEVEL = 77 - 80dB

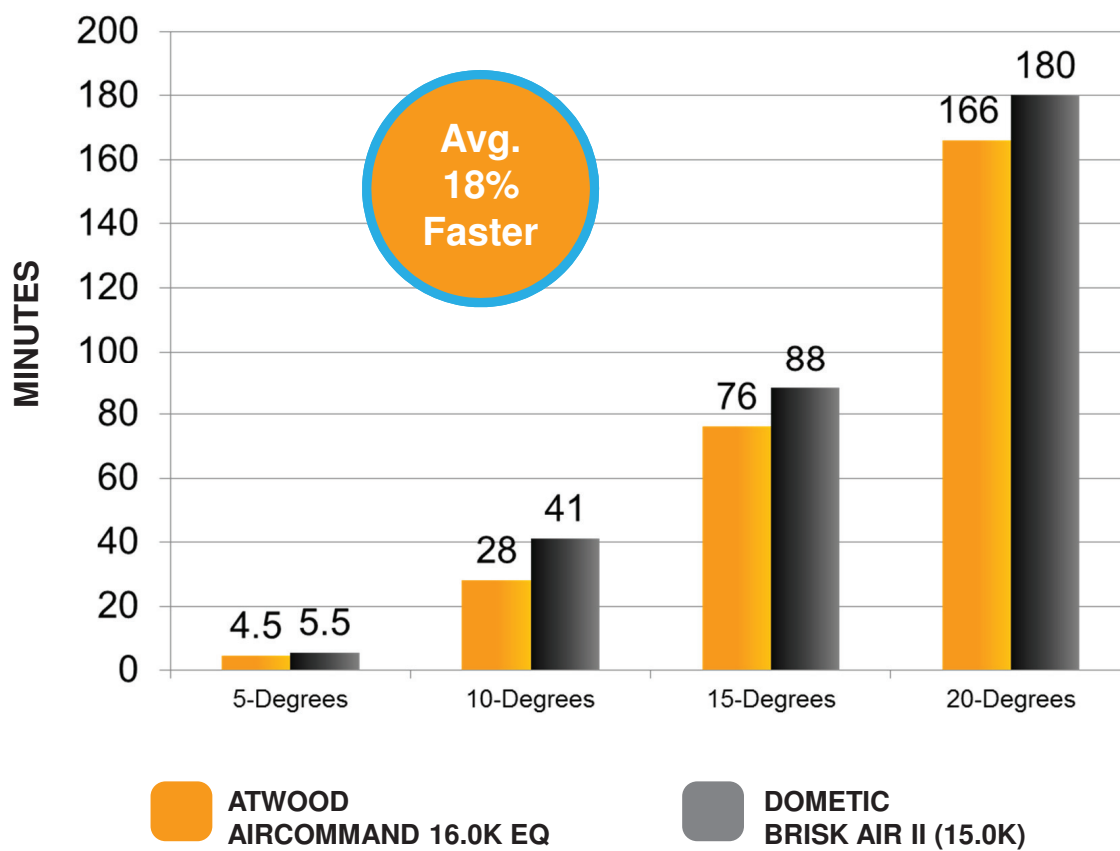
(NOTE: 10dB is considered to be twice as loud)

Testing Parameters: An iPhone loaded with the "Decibel 10th" App was used to measure the decibel level. The air conditioners were set on the high setting, and the iPhone was placed in the same location for both tests.

TIME TO COOL



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PERFORMANCE RESULTS



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	Atwood Air Command 13.5k (16k EQ)	Dometic Brisk Air II 15.0k
Cooling Performance Test (Ambient Temperature ~108°)		
Avg. AMP Draw	12.2 AMPS	18.9 AMPS
Temperature Drop @ 5 Min.	5.1°	4.8°
Temperature Drop @ 10 Min.	6.9°	6.6°
Temperature Drop @ 20 Min.	8.9°	8.8°
Temperature Drop @ 40 Min.	11.5°	9.7°
Temperature Drop @ 1 Hour	13.6°	12.6°
Temperature Drop @ 2 Hours	17.9°	16.9°
Temperature Drop @ 3 Hours	20.7°	19.9°
Temperature Drop @ 4 Hours	22.4°	21.8°
Time to Drop Temperature 5°	4.5 Min.	5.5 Min.
Time to Drop Temperature 10°	28 Min.	41 Min.
Time to Drop Temperature 15°	76 Min.	88 Min.
Time to Drop Temperature 20°	166 Min.	180 Min.
Air Flow Test (Feet Per Minute)		
Living Area (4 Vents)	2,850	2,440
Bedroom (2 Vents)	1,955	1,780
Bathroom (1 Vent)	480	550
Total Airflow (7 Vents)	5,285	4,770
Noise Test (Decibels)		
Decibels	66 dB	77 dB

MODELS



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Non-ducted air system with flip down thermostat and remote control



Ducted air system with wall mount thermostat and remote control