



**Evergreen Commercial Development Project
Initial Study/Mitigated Negative Declaration**

Appendix H

**Evergreen Commercial Development Project
Noise and Vibration Study**

Rincon Consultants, Inc.

May 2022



SALEM
engineering group, inc.

8711 Monroe Court, Suite A
Rancho Cucamonga, CA 91730
(909) 980-6455 Office
(909) 980-6435 Fax

May 16, 2022

Job No. 3-417-0790

Ms. Karen Levitt Ortiz
Evergreen Devco, Inc.
2390 East Camelback Road, Suite 410
Phoenix, AZ 85016

Subject: NOISE AND VIBRATION STUDY
Proposed Evergreen Commercial Development
East Corner of Central Avenue and Cambern Avenue
Lake Elsinore, California

Dear Ms. Levitt Ortiz:

At your request and authorization, a Noise and Vibration Study for the above-referenced project was conducted. The report was most recently revised to address changes to the site, and to incorporate peer review comments based on an updated Traffic Impact Analysis report (TIA). The purpose of this study is to analyze the project's noise and vibration impacts related to both temporary construction activity and long-term operation of the project. The project involves development to include a 43,050-square foot grocery store, a 4,116-square foot car wash, a 4,088-square foot convenience store with eight fueling pumps and sixteen fuel dispensers, and two drive-thru quick-serve restaurants (approximately 3,000 square feet each). The remainder of the subject property would be paved and utilized as parking lots including a total of 368 parking spaces.

As detailed in the following, the proposed project would generate both temporary construction-related noise and long-term noise associated with operation of the project. Construction noise would not exceed Lake Elsinore Municipal Code noise standards at the nearby land uses, and impacts from construction noise would be less than significant.

Combined operational activities on the project would generate noise levels up to 58 dBA Leq at adjacent residential uses to the east. The combined operational noise from the car wash, vacuums, drive-thru speaker boxes, loading docks, and mechanical equipment would not comply with Lake Elsinore's daytime and nighttime noise standards. Please refer to the following report for proposed recommendations (detailed following Tables 13 and 14 of following report and Section 5 Conclusions) that would achieve project compliance, therefore allowing the Project to be consistent with the Lake Elsinore noise standards. Please refer to the following report for additional report conclusions.

We appreciate the opportunity to assist you with this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (909) 980-6455.

Respectfully submitted,

SALEM Engineering Group, Inc.

A handwritten signature in dark ink, appearing to read 'Maria G. Ruvalcaba', is written over a light blue horizontal line.

Maria G. Ruvalcaba, EP
Project Manager



Evergreen Commercial Development Project

Noise and Vibration Study

prepared for

Salem Engineering Group
13355 Noel Road, Suite 1100
Dallas, Texas 75240
Contact: Maria Ruvalcaba

prepared by

Rincon Consultants, Inc.
4825 J Street, Suite 200
Sacramento, California 95819

May 2022

Table of Contents

1	Project Description and Impact Summary	1
1.1	Introduction	1
1.2	Project Summary.....	1
2	Background	6
2.1	Overview of Sound Measurement	6
2.2	Vibration	7
2.3	Sensitive Receivers.....	8
2.4	Project Noise Setting.....	8
2.5	Applicable Regulatory Setting.....	10
3	Methodology	16
3.1	Construction Noise.....	16
3.2	Groundborne Vibration.....	17
3.3	Operational Noise Sources.....	18
3.4	Traffic Noise	20
3.5	Significance Thresholds.....	24
4	Impact Analysis	26
4.1	Item 1 – Temporary and Permanent Noise Increase	26
4.2	Item 2 – Vibration	35
4.3	Item 3 – Airport Noise.....	36
4.4	Item 4 - Land Use Compatibility.....	36
5	Conclusions	37
6	References	38

Tables

Table 1	Summary of Impacts	1
Table 2	Project Site Vicinity Sound Level Monitoring Results	10
Table 3	Sound Level Monitoring Traffic Counts	10
Table 4	City of Lake Elsinore Noise and Land Use Compatibility Matrix	11
Table 5	City of Lake Elsinore Interior Noise Standards.....	12
Table 6	City of Lake Elsinore Municipal Code Exterior Noise Limits.....	13
Table 7	Vibration Levels Measured during Construction Activities.....	17
Table 8	Maximum Vibration Levels for Preventing Damage	17
Table 9	Human Response to Steady State Vibration.....	18
Table 10	Human Response to Transient Vibration.....	18

Table 11	HVAC Noise Levels	20
Table 12	Project Roadway Segment Volumes (Average Daily Traffic [ADT])	22
Table 13	Operational Noise Levels at Off-site Land Uses	28
Table 14	Operational Noise Levels at Off-site Land Uses with Recommendations.....	29
Table 15	Traffic Noise Levels (L_{dn} at 50 feet)	33

Figures

Figure 1	Regional Location	2
Figure 2	Project Site Location	3
Figure 3	Site Plan.....	5
Figure 4	Noise Measurement Locations	9
Figure 5	Modeled Receivers and Noise Contours.....	27
Figure 6	Modeled Receivers and Daytime Mitigated Noise Contours with Recommendations	31

Appendices

Appendix A	Project Phasing Plans
Appendix B	Noise Measurement Data
Appendix C	Roadway Construction Noise Model (RCNM) Results
Appendix D	Car Wash Specifications
Appendix E	Vacuum Specifications
Appendix F	Speaker Box Specifications
Appendix G	HVAC Specifications
Appendix H	SoundPLAN Modeling Results
Appendix I	Traffic Noise Modeling Results
Appendix J	Construction Vibration Modeling Results

1 Project Description and Impact Summary

1.1 Introduction

This study analyzes the potential noise and vibration impacts of the proposed Evergreen Commercial Development Project (project) in the City of Lake Elsinore, Riverside County, California. The purpose of this study is to analyze the project's noise and vibration impacts related to both temporary construction activity and long-term operation of the project. Table 1 provides a summary of project impacts.

Table 1 Summary of Impacts

Impact Statement	Level of Significance	Applicable Recommendations
Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Less Than Significant Impact (Construction) Less Than Significant Impact with Recommendations (Operation)	- Limit car wash operational hours to daytime only (7:00 a.m. to 10:00 p.m.); and - Construction twelve-foot-tall soundwall at the eastern car wash tunnel exit extending for 20 feet to the south.
Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact	None
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	None
Would the project conflict with land use compatibility guidelines for noise?	No conflict	None

1.2 Project Summary

Project Location

The 8.863-acre project site is located in the City of Lake Elsinore in Riverside County, California. The project site lies on the southeast corner of Central Avenue and Cambern Avenue and consists of five contiguous rectangular-shaped parcels of undeveloped land (Riverside County Assessor's Parcel Numbers [APNs] 377-020-014, 377-020-016, 377-020-017, 377-020-018, and 377-020-019). The project site is currently vacant. Surrounding land uses include existing residential neighborhoods adjacent to the east and south of the project site. Planned general commercial uses are located to the north and west of the project site across Central Avenue and Cambern Avenue, respectively. The project site is currently vacant. Interstate 15 (I-15) is approximately 0.3 mile west of the project. Figure 1 shows the project site's regional location, and Figure 2 shows an aerial view of the project site and surrounding area.

Figure 1 Regional Location



Imagery provided by Esri and its licensors © 2021.

★ Project Location

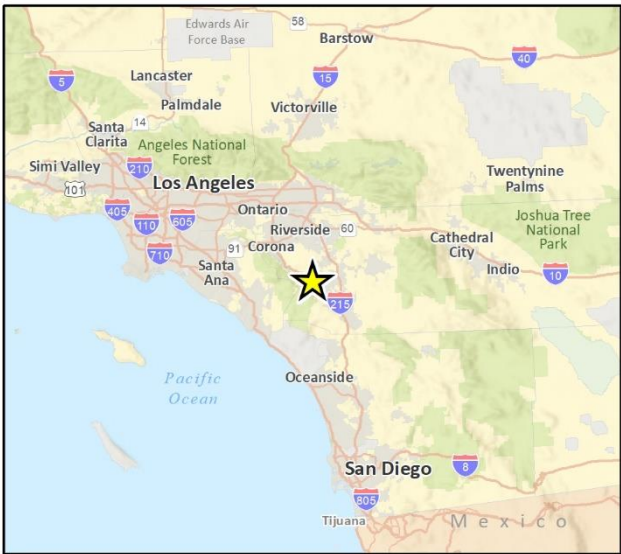


Fig 1 Regional Location

Figure 2 Project Site Location



Imagery provided by Google Earth and its licensors © 2021.

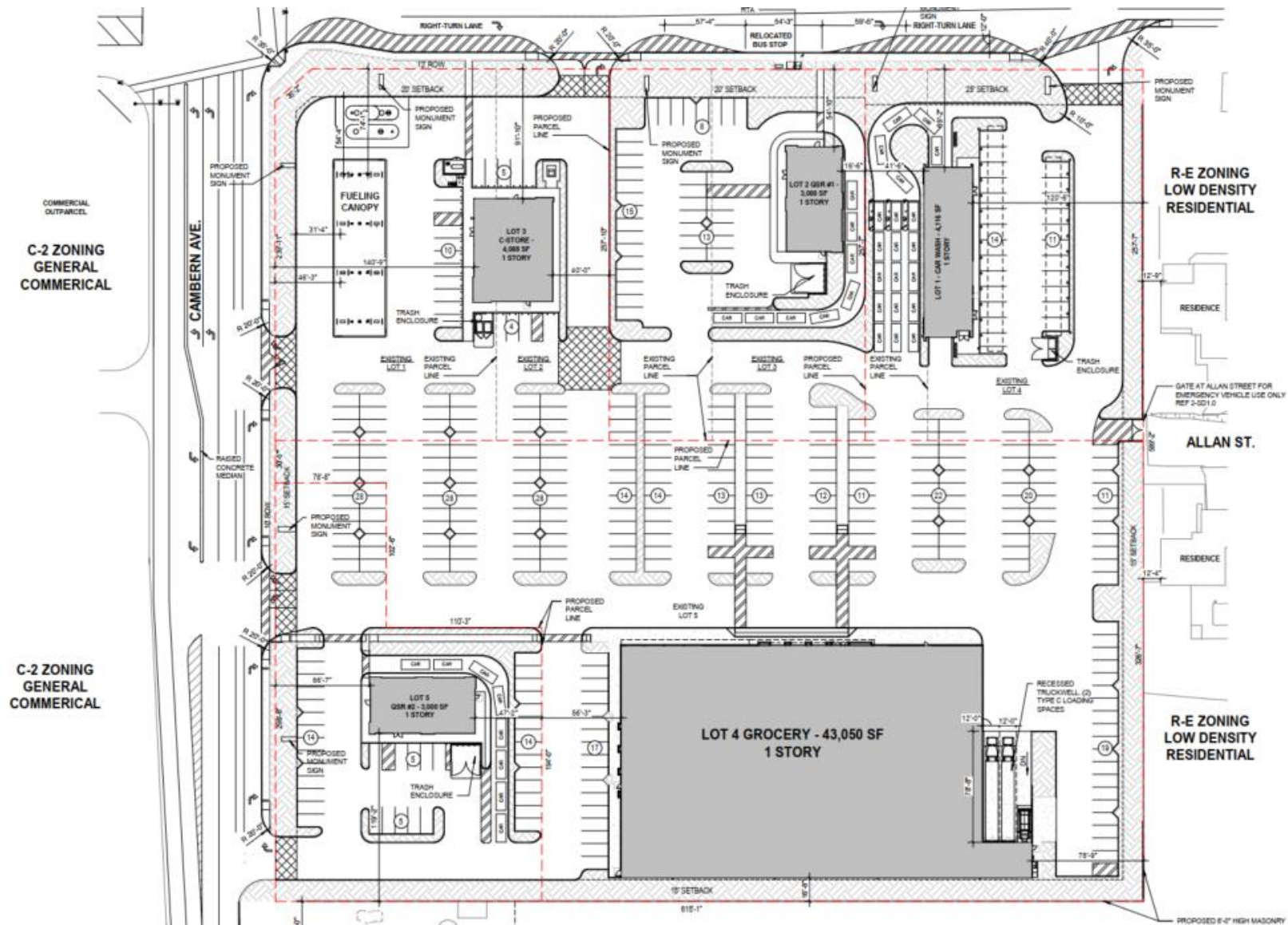
Fig. 2 Project Location

Project Description

The project involves development of five lots with six commercial buildings/structures (totaling 57,254 square feet). These commercial buildings include a 43,050-square foot grocery store, a 4,116-square foot car wash, a 4,088-square foot convenience store with eight fueling stations (sixteen total dispensers), and two drive-thru restaurants (3,000 square feet each). The remainder of the project site would be paved and utilized as parking lots for the various businesses on the property. A total of 368 parking spaces would be distributed throughout the project site. The project site would include five ingress/egress points - three on Cambern Avenue and two on Central Avenue. An eight (8) foot tall block wall along the eastern and southern project boundary lines is proposed. An emergency access gate is proposed at the terminus of Allan Street along on the eastern project boundary.¹ Additional improvements would include curb and sidewalk enhancements and landscaping. The project would be constructed in two phases. The lots adjacent to Central Avenue would be developed in the first phase of construction and the remainder of the site constructed as the second phase. Phasing plans are shown in Appendix A. Figure 3 shows the project plan layout.

¹ The emergency access gate would be a gate with metal bars and would not have any significant impact on the noise environment of the site.

Figure 3 Site Plan



2 Background

2.1 Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; reducing the energy in half would result in a 3 dBA decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud ([10.5x the sound energy] Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner in which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures. The amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can substantially alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA’s guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. Typically, L_{eq} is summed over a one-hour period. L_{max} is the highest root mean squared (RMS) sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours; it is also measured using Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA or less. The relationship between the peak-hour L_{eq} value and the L_{dn} /CNEL depends on the distribution of traffic during the day, evening, and night. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 60-plus CNEL range. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

2.2 Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2020). When a building is affected by

vibration, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may actually amplify the vibration level due to structural resonances of the floors and walls.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

2.3 Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land. The City of Lake Elsinore General Plan identifies noise sensitive uses as schools, hospitals, residences, libraries, and recreation areas (City of Lake Elsinore 2011). Sensitive receivers in the area include single-family residences adjacent to the east and south of the project site.

Vibration sensitive receivers are similar to noise sensitive receivers, such as residences and institutional uses (e.g., schools, libraries, and religious facilities). The City of Lake Elsinore General Plan identifies “concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices” as potential vibration sensitive receivers but indicates the list is not exclusive (City of Lake Elsinore 2011). However, vibration sensitive receivers also include buildings where vibrations may interfere with vibration-sensitive equipment, affected by levels that may be well below those associated with human annoyance (FTA 2018; Caltrans 2013).

2.4 Project Noise Setting

The most common source of noise in the project site vicinity is vehicular traffic from Central Avenue. To characterize ambient sound levels at and near the project site, three 15-minute sound level measurements were conducted on July 19, 2021, using an Extech (Model 407780A) ANSI Type 2 integrating sound level meter. Noise Measurement (NM) 1 was taken at the eastern boundary of the project site north of Allan Street to capture noise levels at adjacent residential uses, which are currently exposed to noise from Central Avenue, the busiest street next to the project site. NM2 and NM3 were taken at the eastern and southern boundaries, respectively, to capture ambient noise levels at the adjacent residences to the project site. Table 2 summarizes the results of the noise measurements, and Table 3 shows the recorded traffic volumes on Central Avenue during NM1. Figure 4 shows the noise measurement locations.

Figure 4 Noise Measurement Locations

Table 2 Project Site Vicinity Sound Level Monitoring Results

Measurement Location	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L _{eq} (dBA)	L _{min} (dBA)	L _{max} (dBA)
1	Eastern property boundary adjacent to residences north of Allan Street	9:30 – 9:45 a.m.	Approximately 150 feet to centerline of Central Avenue	57	42	74
2	Eastern property boundary adjacent to residences south of Allan Street	9:07 – 9:22 a.m.	Approximately 400 feet to centerline of Central Avenue	46	40	53
3	Southern project boundary adjacent to residences	9:58 – 10:13 a.m.	Approximately 100 feet to centerline of Cambern Avenue	57	47	71

Sound level measurements were conducted on July 19, 2021. Detailed sound level measurement data are included in Appendix B, and noise measurement locations are shown in Figure 4.

Table 3 Sound Level Monitoring Traffic Counts

Measurement	Roadway	Traffic	Autos	Medium Trucks	Heavy Trucks
1	Central Avenue	15-minute count	459	0	18
		One-hour Equivalent	1,836	0	72
Percent			96%	0%	4%

Traffic counts were conducted on July 19, 2021. Detailed sound level measurement data are included in Appendix B, and noise measurement locations are shown in Figure 4.

2.5 Applicable Regulatory Setting

Lake Elsinore General Plan

The City of Lake Elsinore General Plan (City of Lake Elsinore 2011) establishes land use compatibility criteria in terms of the Day-Night Noise Level (L_{dn}) for various development types, including commercial uses, which are shown in Table 4. The City has adopted a land use compatibility threshold of 70 dB L_{dn} as “clearly compatible” for exterior areas of commercial retail land uses. In addition, the City has adopted interior and exterior noise standards, which are shown in Table 5.

Table 4 City of Lake Elsinore Noise and Land Use Compatibility Matrix

Land Use Categories		Day-Night Noise Level (L _{dn})						
Categories	Uses	<55	55-60	60-65	65-70	70-75	75-80	>80
Residential	Single Family, Duplex, Multiple Family	A	A	B	B	C	D	D
	Mobile Home	A	A	B	C	C	D	D
Commercial Regional, District	Hotel, Motel, Transient Lodging	A	A	B	B	C	C	D
Commercial Regional, Village District, Special	Commercial Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
Commercial, Industrial, Institutional	Office Building, Research and Development, Professional Offices, City Office Building	A	A	A	B	B	C	D
Commercial Regional, Institutional Civic Center	Amphitheater, Concert Hall, Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial Recreation	Children's Amusement Park, Miniature Golf, Course, Go-cart Track, Equestrian Center, Sports Club	A	A	A	B	B	D	D
Commercial General, Special Industrial, Institutional	Automobile Service Station, Auto Dealership, Manufacturing, Warehousing, Wholesale, Utilities	A	A	A	A	B	B	B
Institutional General	Hospital, Church, Library, Schools, Classroom	A	A	B	C	C	D	D
Open Space	Parks	A	A	A	B	C	D	D
Open Space	Golf Course, Cemeteries, Nature Centers, Wildlife Reserves, Wildlife Habitat	A	A	A	A	B	C	C
Agriculture	Agriculture	A	A	A	A	A	A	A

Zone A Clearly Compatible: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any noise insulation requirements.

Zone B Normally Compatible: New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Zone C Normally Incompatible: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

Zone D Clearly Incompatible: New construction or development should generally not be undertaken.

Source: City of Lake Elsinore General Plan 2011, Table 3-1

Table 5 City of Lake Elsinore Interior Noise Standards

Land Use Categories		Energy Average LDN	
Categories	Uses	Interior ¹	Exterior ²
Residential	Single Family, Duplex, Multiple Family	45 ^{3,5}	60
	Mobile Homes	–	60 ⁴
Commercial, Institutional	Hotel, Motel, Transient Lodging	45 ⁵	–
	Hospital, School's classroom	45	–
	Church, Library	45	–

Interpretation:

¹ Indoor environment excluding: Bathrooms, toilets, closets, corridors.

² Outdoor environment limited to: Private yard of single family, multi-family private patio or balcony which is served by a means of exit from inside, Mobile Home Park.

³ Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of UBC.

⁴ Exterior noise level should be such that interior noise level will not exceed 45 CNEL.

⁵ As per California Administrative Code, Title 24, Part 6, Division T25, Chapter 1, Subchapter 1, Article 4, Section T25-28.

Source: Lake Elsinore General Plan 2011

Lake Elsinore Municipal Code

Operation Noise Limits

Chapter 17.176 of the Lake Elsinore Municipal Code pertains to noise control in Lake Elsinore. The Lake Elsinore Municipal Code establishes exterior and interior noise limits for non-transportation noise sources by receiving land use. Table 6 outlines Lake Elsinore's exterior noise level standards contained in Lake Elsinore Municipal Code Section 17.176.060. No person is allowed to operate, or cause to be operated, any source of sound at any location within incorporated Lake Elsinore or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, either incorporated or unincorporated, to exceed:

- The noise standard for that land use as specified in Table 6 for a cumulative period of more than 30 minutes in any hour; or
- The noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour; or
- The noise standard plus 10 dB for a cumulative period of more than 5 minutes in any hour; or
- The noise standard plus 15 dB for a cumulative period of more than 1 minute in any hour; or
- The noise standard plus 20 dB or the maximum measured ambient level, for any period of time.

Table 6 City of Lake Elsinore Municipal Code Exterior Noise Limits

Receiving Land Use Category	Time Period	Noise Level (dBA)
Single-Family Residential	10:00 p.m. – 7:00 a.m.	40
	7:00 a.m. – 10:00 p.m.	50
Multiple Dwelling Residential	10:00 p.m. – 7:00 a.m.	45
	7:00 a.m. – 10:00 p.m.	50
Limited Commercial and Office	10:00 p.m. – 7:00 a.m.	55
	7:00 a.m. – 10:00 p.m.	60
General Commercial	10:00 p.m. – 7:00 a.m.	60
	7:00 a.m. – 10:00 p.m.	65
Light Industrial	Anytime	70
Heavy Industrial	Anytime	75

¹ The Municipal Code defines a commercial area as a “property which is zoned for commercial purpose”; it defines a residential area as a “property which is zoned for residential uses.”

Source: Lake Elsinore Municipal Code Section 17.176.060, Table 1

If the measured ambient level differs from that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be adjusted in five dB increments in each category as appropriate to encompass or reflect said ambient noise level.

If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus six dB shall apply.

Construction/Demolition Noise Limits

Lake Elsinore Municipal Code Section 17.176.080 pertains specifically to prohibited acts related to noise.

Subsection 17.176.080(E) relates to loading and unloading activities and states:

Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line of at any time to violate the provisions of LEMC 17.176.060(A).

Subsection 17.176.080(F) relates to construction/demolition activities and states:

1. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays, such that the sound therefrom creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the City.
2. Noise Restrictions at Affected Properties. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected residential properties will not exceed those listed in the following schedule:

Residential Properties

Mobile Equipment: Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:

	Type I Areas Single-Family Residential	Type II Areas Multifamily Residential	Type III Areas Semi-Residential/ Commercial
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays	60 dBA	65 dBA	70 dBA

Stationary Equipment: Maximum noise levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment:

	Type I Areas Single-Family Residential	Type II Areas Multifamily Residential	Type III Areas Semi-Residential/ Commercial
Daily, except Sundays and Legal Holidays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 7:00 p.m. to 7:00 a.m. and all day Sunday and Legal Holidays	50 dBA	55 dBA	60 dBA

In summary, for single-family residential properties, the City of Lake Elsinore applies a daytime exterior noise level limit of 75 dBA to mobile construction equipment operating for durations of 10 days or less and a noise level limit of 60 dBA for stationary equipment operating for durations of 10 days or more daily except Sundays and legal holidays. The City also applies an exterior noise level limit of 60 dBA for mobile equipment and 50 dBA for stationary equipment during nighttime hours and all day on Sundays and legal holidays for single-family residential properties.

Business Properties

Mobile Equipment: Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:

- Daily, including Sundays and Legal Holidays, all hours: 85 dBA

Stationary Equipment: Maximum noise levels for repetitively scheduled and relatively long-term operation of stationary equipment:

- Daily, including Sundays and Legal Holidays, all hours: 75 dBA

3. All mobile or stationary internal combustion engine powered equipment or machinery shall be equipped with suitable exhaust and air intake silencers in proper working order.

Lake Elsinore Municipal Code Section 17.176.080 (G) relates to vibration and states:

Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way.

Lake Elsinore Municipal Code Section 17.176.080 (M) relates to air-condition or air-handling equipment:

Operating or permitting the operation of any air-conditioning or air-handling equipment in such a manner as to exceed any of the following sound levels:

- Measured at any point on the neighboring property line, 5 feet above grade level, no closer than three (3) feet from any wall shall not exceed 55 dBA.
- Center of neighboring patio, five (5) feet above grade level, no closer than three (3) feet from any wall shall not exceed 50 dBA.
- Outside the neighboring living area window nearest the equipment locations, not more than three (3) feet from the window opening, but at least three (3) feet from any other surface shall not exceed 50 dBA.

Lake Elsinore Municipal Code Section 17.176.090 (A) relates to refuse collection activities:

1. No person shall collect refuse with a refuse collection vehicle between the hours of 7:00 p.m. and 7:00 a.m. within or adjacent to a residential area or noise sensitive zone.
2. No person authorized to engage in waste disposal service or garbage collection shall operate any truck-mounted waste or garbage loading and/or compacting equipment or similar device in any manner so as to create any noise exceeding the following levels, measured at a distance of 50 feet from the equipment in an open area:
 - a. New equipment purchased or leased on or after a date six months from the effective date of the ordinance codified in this chapter: 80 dBA.
 - b. New equipment purchased or leased on or after 36 months from the effective date of the ordinance codified in this chapter: 75 dBA.
 - c. Existing equipment, on or after five years from the effective date of the ordinance codified in this chapter: 80 dBA.

3 Methodology

3.1 Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise-sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FHWA 2018). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels.

Construction activity would result in temporary noise in the project site vicinity, exposing surrounding nearby receivers to increased noise levels. Construction noise would typically be higher during the heavier periods of initial construction (i.e., site preparation and grading) and would be lower during the later construction phases (i.e., building construction and paving). Typical heavy construction equipment during project grading could include dozers, loaders, graders, and dump trucks. It is assumed that diesel engines would power all construction equipment. Construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the 8-hour operating day.

The project would be constructed over two phases. The lots adjacent to Central Avenue would be constructed during the first phase and the lots containing the proposed grocery store and quick service restaurant on the southern portion of the project site would be constructed during the second phase. Noise levels at the nearest sensitive receivers would be loudest when construction occur near to single-family residences to the east and south of the project site. Construction equipment would be located as close as 20 feet to these properties but over the course of a typical construction day would typically be located at an average distance farther away due to the nature of construction and the lot size of the project. For example, during a typical construction day, the equipment may operate across the horizontal and vertical distance of the site (630 and 600 feet) from a nearby noise receiver. Therefore, it is assumed that the acoustical center would be at an average distance of 150 feet from adjacent single-family residences.

Construction noise is typically loudest during activities that involve excavation and move soil, such as site preparation and grading. A typical construction scenario would include a grader, a dozer, a front-end loader, a scraper, and a dump truck working during grading to excavate and move soil. At a distance of 50 feet, a grader, a dozer, a front-end loader, a scraper, and a dump truck would generate a noise level of 84 dBA L_{eq} and at a distance of 150 feet, noise levels would attenuate to 74 dBA L_{eq} (RCNM calculations are included in Appendix C).

3.2 Groundborne Vibration

The project does not include any substantial vibration sources associated with operation. Thus, construction activities have the greatest potential to generate groundborne vibration affecting nearby receivers, especially during grading and excavation of the project site. The greatest vibratory source during construction within the project vicinity would be a vibratory roller. Neither blasting nor pile driving would be required for construction of the project. Construction vibration estimates are based on vibration levels reported by Caltrans and the FTA (Caltrans 2020, FTA 2018). Table 7 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (FTA 2018).

Table 7 Vibration Levels Measured during Construction Activities

Equipment	PPV at 25 ft. (in/sec)
Large Vibratory Roller	0.211
Small Vibratory Roller	0.101
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003
Source: FTA 2018	

Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities, such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation, are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* and the Federal Transit Administration and the FTA *Transit Noise and Vibration Impact Assessment Manual* (Caltrans 2020; FTA 2018). Maximum recommended vibration limits for structures are identified in Table 8.

Table 8 Maximum Vibration Levels for Preventing Damage

Type of Situation	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Source: Caltrans 2020		

Based on Caltrans recommendations, limiting vibration levels to below 0.1 in/sec PPV at residential structures would prevent structural damage regardless of building construction type. These limits are applicable regardless of the frequency of the source. However, as shown in Table 9 and

Table 10, potential human annoyance associated with vibration is usually different if it is generated by a steady state or a transient vibration source.

Table 9 Human Response to Steady State Vibration

PPV (in/sec)	Human Response
0.01	Barely perceptible
0.04	Distinctly perceptible
0.10	Strongly perceptible
0.40	Severe
Source: Caltrans 2020	

Table 10 Human Response to Transient Vibration

PPV (in/sec)	Human Response
0.04	Barely perceptible
0.25	Distinctly perceptible
0.90	Strongly perceptible
2.00	Severe
Source: Caltrans 2020	

As shown in Table 10, the vibration level threshold at which transient vibration sources (such as construction equipment) are considered to be distinctly perceptible is 0.25 in/sec PPV. This analysis uses the distinctly perceptible threshold for purposes of assessing vibration impacts.

3.3 Operational Noise Sources

On site-noise sources were modeled with SoundPLAN. Propagation of modeled stationary noise sources was based on ISO Standard 9613-2, "Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation." The assessment methodology assumes that all receivers would be downwind of stationary sources. This is a worst-case assumption for total noise impacts since only some receivers would be downwind at any one time.

On-site noise source would include general conversations, landscape maintenance, waste hauling, car wash facilities (blowers and vacuums), drive-thru speaker boxes, loading docks, and the heating, ventilation, and air conditioning (HVAC) equipment. There are no large gathering areas on the project site, and conversational noise would be transient in nature as people transit from vehicles to the store or fuel pumps. Therefore, general conversations would not represent a substantial noise source. Landscape maintenance and waste hauling are regulated by the noise ordinance with allowable hours and other limitations as discussed in Lake Elsinore Municipal Codes 17.176.080(L) and 17.176.090(A). Thus, the primary noise sources of concern would be associated with the car wash, vacuums, drive-thru speaker boxes, loading docks, and mechanical equipment.

Car Wash Equipment

The primary noise-generating components of the car wash would be the blowers used to dry the cars. For this analysis, a PDQ LaserWash 360 with eight (four at five feet from the tunnel exit and four at ten feet from the tunnel exit) on-board dryers as the blowers was assumed. According to the

manufacturer's specifications (see Appendix D for manufacturer's specifications), the blowers generate a noise level of 88 dBA L_{eq} at five feet from the exit. This analysis also conservatively assumes the equipment would operate continuously for a full hour (100 percent for 60 minutes) during all hours of operation. For this analysis, the car wash would be operational during the daytime hours of 7:00 a.m. to 10:00 p.m. only. The car wash would not operate during the nighttime hours of 10:00 p.m. to 7:00 a.m.

Vacuums

The project would include 25 vacuums (individual units to clean car interiors) located outside to the west of the car wash. The project would include a mechanical room that would house the motor and generate negligible noise levels associated with the motor. For this analysis, a J.E. Adams Industries' Commercial VACs is assumed for the project vacuums (see Appendix E for manufacturer's specifications). The product used for modeling is Model No. 9235-2, which has a sound power level of 73.8 dBA at the vacuum nozzle. This analysis conservatively assumes the equipment would operate continuously for a full hour (100 percent for 60 minutes) during daytime hours of operation.

Speaker Box Noise

The project would involve the construction of two fast-food drive-thru restaurants and three automated car wash lanes that would generate noise from idling passenger vehicles, engine ignition, microphones, and conversation. For the purposes of this analysis, the fast-food restaurants were assumed to operate 24 hours a day and the automated car wash lanes were assumed to operate during daytime hours. The project's fast-food drive-thru restaurants and car wash were assumed to use a drive-thru speaker similar to a 3M XT-1 Intercom System. Fast-food restaurants would have a single drive-thru lane with a single speaker box and the car wash would have three speaker boxes associated with the three automated car wash lanes. According to 3M's specifications for the system, the speaker would generate a noise level of 65 dBA L_{eq} at a distance of four feet (see Appendix F for manufacturer's specifications).

Parking Lot Noise

The project would involve the construction of 368 parking spaces throughout the project site. For the purpose of this analysis, the parking lots were assumed to have vehicles 24 hours a day. Parking lot noise ranges from 30-63 dBA at 100 feet. The loudest sources of noise are from car alarms, while quieter noise sources include automobiles traveling at 14 miles per hour (Gordon Bricken & Associates 1996).

Loading Docks

The project includes loading docks in the rear of the proposed grocery store building. In order to evaluate noise from truck delivery, the analysis utilizes measurements of reference noise level taken at an Albertson's Shopping Center in San Diego in 2011 (Ldn Consulting 2011). The measurements include truck drive-by noise, truck loading/unloading, and truck engine noise. The exterior noise levels for a single truck drive-by noise and a single truck's engine idling noise were measured at 66.5 dBA L_{eq} at a distance of 25 feet from the loading dock. The on-site maneuvering associated with the delivery trucks consists of the truck entering the site, traveling toward and backing into the loading dock. A truck would take approximately five minutes to drive in the site and position itself into a bay, 30 to 45 minutes to be unloaded or loaded, and another five minutes to exit the bay secure doors, complete necessary paperwork, and drive out of the site. Therefore, it would take

40 to 55 minutes for one truck to complete a delivery or pickup. As such, each loading dock is anticipated to accommodate only one truck per hour. During typical loading/unloading of a truck, the engine would only idle for five minutes in compliance with state air quality requirements. As a result, it was assumed that each truck engine would be operating for up to 15 minutes of the total time required during the delivery process (five minutes at arrival, five minutes of idling, and five minutes at departure). Accounting for the limited time of loading dock operation, average hourly noise levels would equate to 60.5 dBA L_{eq} at a distance of 25 feet for each loading dock. This analysis conservatively assumes the loading dock area would operate three bays during daytime hours of operation.

Heating, Ventilation, and Air Conditioning Units

HVAC units would be associated with proposed on-site commercial buildings. The AC condensers associated with commercial buildings are anticipated to be roof mounted. Specific planning data for the future HVAC systems are not available at this stage of project design; however, new development typically requires one ton of HVAC per 600 square feet of building space. This analysis conservatively assumes the fast-food restaurant in the southern portion of the site and the fast-food restaurant in the northern portion of the site would have a 5-ton condenser. The proposed convenience store and car wash were assumed to have two 3-ton condensers each. The proposed grocery store was assumed to have seven 10-ton condensers. Based on review of various manufacturer specifications, representative sound power levels for the 10-ton Trane T/YHC120E of 87 dB was selected for analysis. The manufacturer's noise data is provided below in Table 11 (see Appendix G for manufacturer's specifications)

Based on review of various manufacturer specifications, representative sound power levels for the 2-ton Carrier 38HRD024 of 68 dB, 3-ton Carrier 38HDR036 of 70 dB, and 3-ton Carrier 38HDR060 of 72 dB was selected for analysis. The manufacturer's noise data is provided below in Table 11 (see Appendix g for manufacturer's specifications). For a conservative scenario, the units were assumed to operate at 100 percent of an hour for 24 hours. All HVAC units were modeled as being one foot above rooftop elevation. Noise propagation was estimated in SoundPLAN using algorithms from ISO Standard 9613-2, "Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation."

Table 11 HVAC Noise Levels

Representative Unit	Noise Levels in dB ¹ Measured at Octave Frequencies							Overall Noise Level (dBA)
	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	
38HDR036 (3-ton)	65.0	61.5	63.5	65.0	64.5	61.0	54.5	70
38HDR060 (5-ton)	63.0	61.5	64.0	66.5	66.0	64.5	55.5	72
T/YHC120E (10-ton)	87.0	91.0	85.0	80.0	77.0	73.0	66.0	87

Hz = Hertz; KHz = kilohertz

See Appendix G for manufactures specifications.

3.4 Traffic Noise

The project would generate new vehicle trips that would increase noise levels on nearby roadways. As discussed in the project Traffic Impact Analysis, the project is anticipated to generate 4,924 daily two-way vehicle trips (Urban Crossroads, Inc. 2022). Roadway segment volumes with and without

project-generated traffic are shown in Table 12. Noise affecting the project site is primarily associated with traffic on Central Avenue.

The project's contribution to traffic noise levels was determined by comparing the predicted noise levels at a reference distance of 50 feet from the roadway centerline for existing, existing plus ambient growth plus Phase 1 and buildout, and existing plus ambient growth plus project plus cumulative with and without project-generated traffic. The vehicle classification mix for modeling assumes 97 percent automobiles, 2 percent medium trucks, and 1 percent heavy trucks for all roadways modeled. Roadway noise modeling worksheets are included in Appendix I.

Table 12 Project Roadway Segment Volumes (Average Daily Traffic [ADT])

Roadway	Segment	Speed (mph)	Existing	Existing Plus Project (Phase 1)	Existing Plus Project (Buildout)	EAP	EAP (Phase 1) Plus Project	EAP (Buildout) Plus Project	EAPC	EAPC (Phase 1) Plus Project	EAPC (Buildout) Plus Project
Riverside Drive	Strickland Avenue to Collier Avenue	40	32,050	32,350	32,800	34,123	34,423	34,873	40,804	41,104	41,554
	Strickland Avenue to the west	40	29,450	29,650	29,950	31,117	31,317	31,617	35,705	35,905	36,205
Collier Avenue	Avenue 48 to Avenue 50	40	34,350	34,750	35,250	36,657	37,057	37,557	44,347	44,747	45,247
Central Avenue	Collier Avenue to I-15 on ramps	40	38,450	38,950	39,600	41,160	41,660	42,810	52,227	52,727	53,377
	Dexter Avenue to Cambern Avenue	45	52,650	54,150	56,200	58,444	59,944	61,994	70,996	72,496	74,546
	Cambren Avenue to Driveway 4	45	43,350	44,200	44,550	46,315	47,165	47,515	56,211	57,061	57,411
	Driveway 4 to Driveway 5	45	43,350	43,800	43,750	45,503	45,953	45,903	55,399	55,849	55,799
	Driveway 5 to Conrad Avenue	45	43,350	43,750	44,100	45,897	46,297	46,647	55,793	56,193	56,543
	Conrad Avenue to Rosetta Canyon Road	55	42,850	43,100	43,500	45,219	45,469	45,869	54,557	54,807	55,207
	Rosetta Canyon Road to the east	60	38,600	38,800	39,100	40,659	40,859	41,159	45,991	46,191	46,491
Camino Del Norte	Main Street to 2 nd Street	55	12,400	12,700	13,150	13,680	13,980	14,430	15,418	15,718	16,168
Dexter Avenue	2 nd Street to 3 rd Street	40	11,300	11,600	12,050	12,520	12,820	13,270	14,258	14,558	15,008
	3 rd Street to Central Avenue	40	8,450	8,600	8,850	9,185	9,335	9,585	9,185	9,335	9,585
	Central Avenue to the north	40	18,950	19,050	19,200	19,968	20,068	20,218	21,870	21,970	22,120

Roadway	Segment	Speed (mph)	Existing	Existing Plus Project (Phase 1)	Existing Plus Project (Buildout)	EAP	EAP (Phase 1) Plus Project	EAP (Buildout) Plus Project	EAPC	EAPC (Phase 1) Plus Project	EAPC (Buildout) Plus Project
3 rd Street	Dexter Avenue to Cambern Avenue	45	3,550	3,700	3,950	4,094	4,244	4,494	5,832	5,982	6,232
	Cambarn Avenue to Conrad Avenue	25	900	1,000	1,000	932	1,032	1,032	1,898	1,998	1,998
Cambarn Avenue	3 rd Street to Driveway 3	25	2,850	2,950	3,250	3,346	3,446	3,746	8,074	8,174	8,474
	Driveway 3 to Driveway 2	40	2,850	2,950	3,400	3,485	3,585	4,035	8,213	8,313	8,763
	Driveway 2 to Driveway 1	40	2,850	2,950	4,350	4,495	4,595	5,995	9,223	9,323	10,723
	Driveway 1 to Central Avenue	40	2,850	3,700	5,350	5,480	6,330	6,980	10,208	11,058	11,708
Conrad Avenue	Central Avenue to 3 rd Street	40	1,750	1,850	1,770	1,810	1,910	1,910	2,178	2,278	2,278
Rosetta Canyon Road	Central Avenue to the south	40	5,950	5,980	6,100	6,317	6,467	6,667	11,161	11,221	11,311
Source: Urban Crossroads, Central & Cambarn Retail Traffic Analysis, 2022											
EAP=Existing Plus Ambient Growth Plus Project											
EAPC=Existing Plus Ambient Growth Plus Project Plus Cumulative											

3.5 Significance Thresholds

The following thresholds are based on Lake Elsinore noise standards and Appendix H of the California Environmental Quality Act (CEQA) Guidelines. Noise impacts would be considered significant if:

- **Item 1:** The project would result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
 - Based on Lake Elsinore Municipal Code Chapter 17.176.080(F), construction noise would be significant if:
 - Noise levels at adjacent residential properties exceed 75 dBA, daily except Sundays and legal holidays for mobile equipment;
 - Noise levels at adjacent residential properties exceed 60 dBA, daily except Sundays and legal holidays for stationary equipment
 - Based on Lake Elsinore Municipal Code Chapter 17.176.060 (see Table 6), operational noise would be significant if:
 - Noise levels exceed 56 dBA from 7:00 a.m. to 10:00 p.m. or 46 dBA from 10:00 p.m. to 7:00 a.m. at residential uses when accounting for the 6 dBA adjustment applied to a land use on a boundary between two different land use zones;
 - Noise levels exceed 65 dBA from 7:00 a.m. to 10:00 p.m. or 60 dBA from 10:00 p.m. to 7:00 a.m. at general commercial uses.
 - Traffic-related noise impacts would be considered significant if project-generated traffic would result in exposure of sensitive receivers to an unacceptable increase in noise levels.
 - For purposes of this analysis, a significant impact would occur if project-related traffic increases the ambient noise environment of noise-sensitive land uses by 3 dBA or more if the locations are subject to noise levels in excess of conditionally compatible levels, or by 5 dBA or more if the locations are not subject to noise levels in excess of the conditionally compatible levels identified in the City of Lake Elsinore General Plan.
- **Item 2:** The project would result in the generation of excessive groundborne vibration or groundborne noise levels.
 - Vibration levels equal to, or below 0.5 in./sec. PPV at residential structures would prevent structural damage for most residential building and vibration levels equal to or less than 2.0 in./sec. PPV would prevent damage to more substantial construction, such as high-rise, commercial, and industrial buildings. However, for people, the vibration level threshold at which transient, or temporary, vibration sources are considered to be distinctly perceptible is 0.25 in./sec. PPV. This analysis uses the threshold of 0.25 in./sec. PPV at or beyond the property boundary, pursuant to Lake Elsinore Municipal Code 17.176.080(G) for purposes of assessing construction vibration impacts at surrounding properties as it would protect structures as well as limit the vibrations to local residents to less than significant levels.
- **Item 3:** For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use

airport, if the project exposes people residing or working in the project area to excessive noise levels.

- **Item 4 (Land Use Compatibility):** The project's on-site uses would be inconsistent with Lake Elsinore land use noise compatibility standards if exterior areas of the project are subject to noise levels in excess of 80 dBA L_{dn} (the normally compatible noise level for commercial retail land use).

4 Impact Analysis

4.1 Item 1 – Temporary and Permanent Noise Increase

Item: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (*Less Than Significant Impact with Recommendations*)

Construction

As described in Section 3.1, at a distance of 50 feet, a dozer and front-end loader would generate a noise level of 81.4 dBA L_{eq} . It is assumed that over the course of a typical construction day the construction equipment would operate at an average distance of 150 feet from adjacent single-family residences. Project construction noise would result in a noise level of 72 dBA L_{eq} at 150 feet for construction Phases 1 and 2. For residential land uses, Lake Elsinore's construction noise limit is 75 dBA; therefore, project construction noise levels would not exceed construction noise thresholds during both Phases of construction. Therefore, impacts from construction noise would be less than significant.

Operation

The project would introduce sources of operational noise to the site, including car wash, vacuums, drive-thru speaker boxes, loading docks, and mechanical equipment. Assumptions for these sources are discussed in Section 3.3. The combined noise levels generated by their operation at the nearest properties are shown in Table 13. Receiver locations and noise level contours are shown on Figure 5. Appendix H shows the SoundPLAN modeling result sheets.

Figure 5 Modeled Receivers and Noise Contours

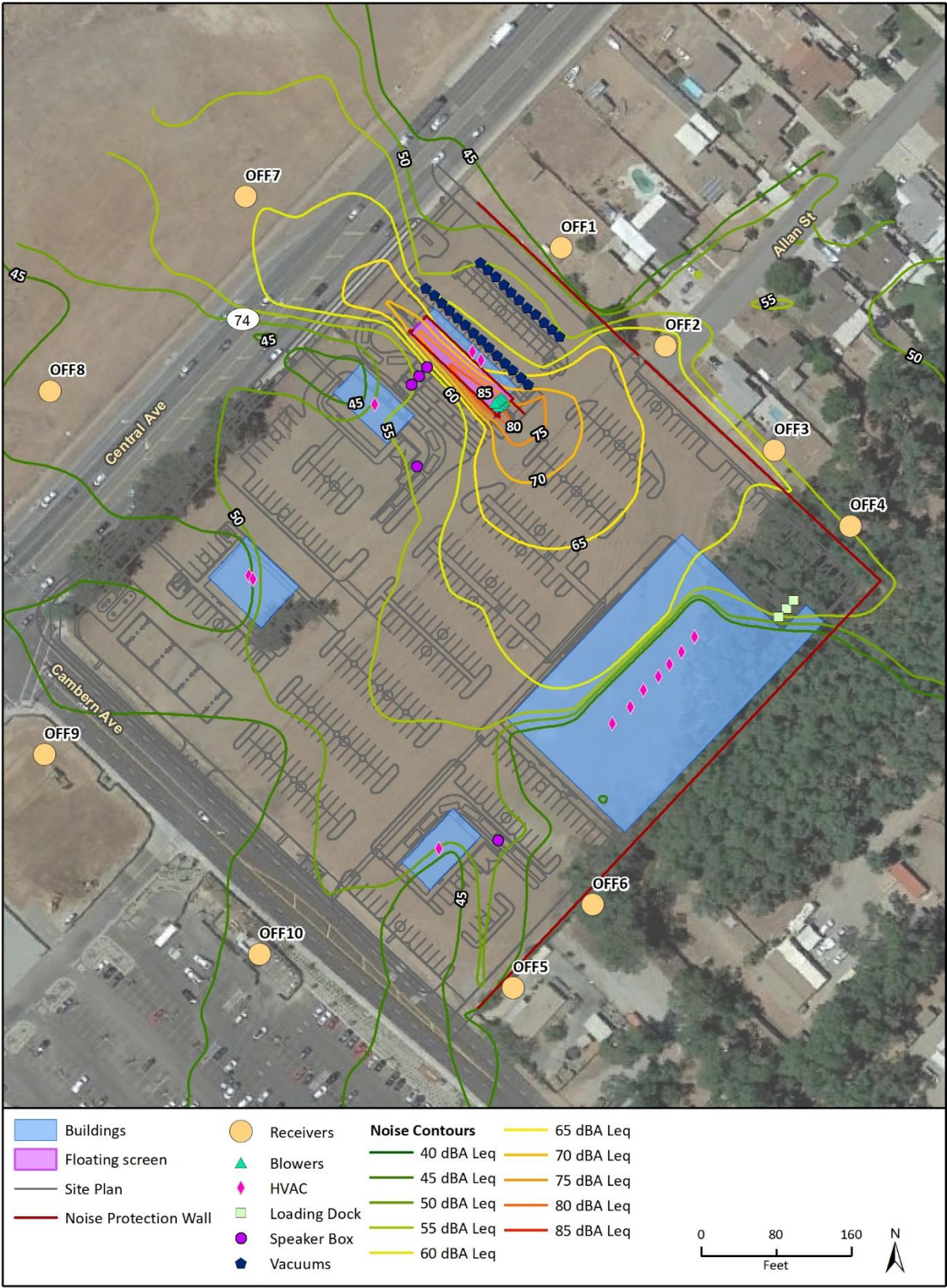


Table 13 Operational Noise Levels at Off-site Land Uses

Receiver	Description	Noise Level (dBA L _{eq})			
		Daytime	Nighttime ¹	Exceeds Daytime Threshold ²	Exceeds Nighttime Threshold ³
R-1	Residence-east	41	34	No	No
R-2	Residence-east	61	33	Yes	No
R-3	Residence-east	52	34	No	No
R-4	Residence-east	53	38	No	No
R-5	Residence-south	39	36	No	No
R-6	Residence-south	40	36	No	No
R-7	Vacant- north	59	33	No	No
R-8	Vacant- north	46	32	No	No
R-9	Commercial- west	34	33	No	No
R-10	Commercial- west	48	34	No	No

¹Combined noise levels reflect that the car wash and loading dock are not in operation.

² Daytime thresholds would be exceeded if exterior noise levels exceed 56 dBA at residential uses and 65 dBA at commercial uses from 7:00 a.m. to 10:00 p.m.

³ Nighttime thresholds would be exceeded if exterior noise levels exceed 46 dBA at residential uses and 60 dBA at commercial uses from 10:00 p.m. to 7:00 a.m.

See Figure 5 for receiver locations.

As shown in Table 13, combined operational activities on the project site would generate noise levels up to 61 dBA L_{eq} at nearby residential properties during daytime hours and up to 38 dBA L_{eq} during the nighttime hours. The combined operational noise from car wash, vacuums, drive-thru speaker boxes, loading docks, and mechanical equipment would exceed Lake Elsinore's daytime noise standard of 56 dBA at three residential receivers (one to the east and two to the south of the project site). However, nighttime noise levels would not exceed the nighttime noise standard of 46 dBA at all residences adjacent to the project site.

Recommendation

The following recommendation would reduce car wash noise levels at adjacent residential properties:

NOI-1 CAR WASH NOISE REDUCTION

Operational noise from the project would exceed Lake Elsinore daytime and nighttime standards at adjacent residences. The following recommendations would ensure the project would comply with Lake Elsinore nighttime noise standards:

- Construct a twelve (12)-foot-tall soundwall along the eastern curb of the car wash tunnel exit for a distance of 20 feet to the south to shield residential receivers east of the project site. The soundwall shall connect to the car wash building at the tunnel exit;
- Limit car wash operations to daytime hours of 7:00 a.m. to 10:00 p.m.

As shown in Table 14 and Figure 6, with the inclusion of a soundwall at the car wash tunnel exit and limiting car wash operations to the daytime hours, project noise levels would comply with daytime and nighttime noise limits, and the project would be consistent with the Lake Elsinore noise standards.

Table 14 Operational Noise Levels at Off-site Land Uses with Recommendations

Receiver	Description	Noise Level (dBA L_{eq})			
		Daytime	Nighttime without Car Wash	Exceed Daytime Threshold ¹	Exceed Nighttime Thresholds? ²
R-1	Residence-east	41	34	No	No
R-2	Residence-east	53	33	No	No
R-3	Residence-east	46	34	No	No
R-4	Residence-east	48	38	No	No
R-5	Residence-south	40	36	No	No
R-6	Residence-south	42	36	No	No
R-7	Vacant-north	59	33	No	No
R-8	Vacant-north	48	32	No	No
R-9	Commercial-west	38	33	No	No
R-10	Commercial-west	50	34	No	No

¹ Daytime thresholds would be exceeded if exterior noise levels exceed 56 dBA at residential uses and 65 dBA at commercial uses from 7:00 a.m. to 10:00 p.m.

² Nighttime thresholds would be exceeded if exterior noise levels exceed 46 dBA at residential uses and 60 dBA at commercial uses from 10:00 p.m. to 7:00 a.m.

See Figure 6 for receiver locations.

Off-site Traffic Noise

The project would generate new vehicle trips that would increase noise levels on nearby roadways. As discussed in the project Traffic Impact Analysis, the project is anticipated to generate 2,024 daily vehicle trips which would be a net increase of 4,924 trips (Urban Crossroads, Inc. 2022). Roadway segment volumes with and without project-generated traffic scenarios are shown in Table 15.

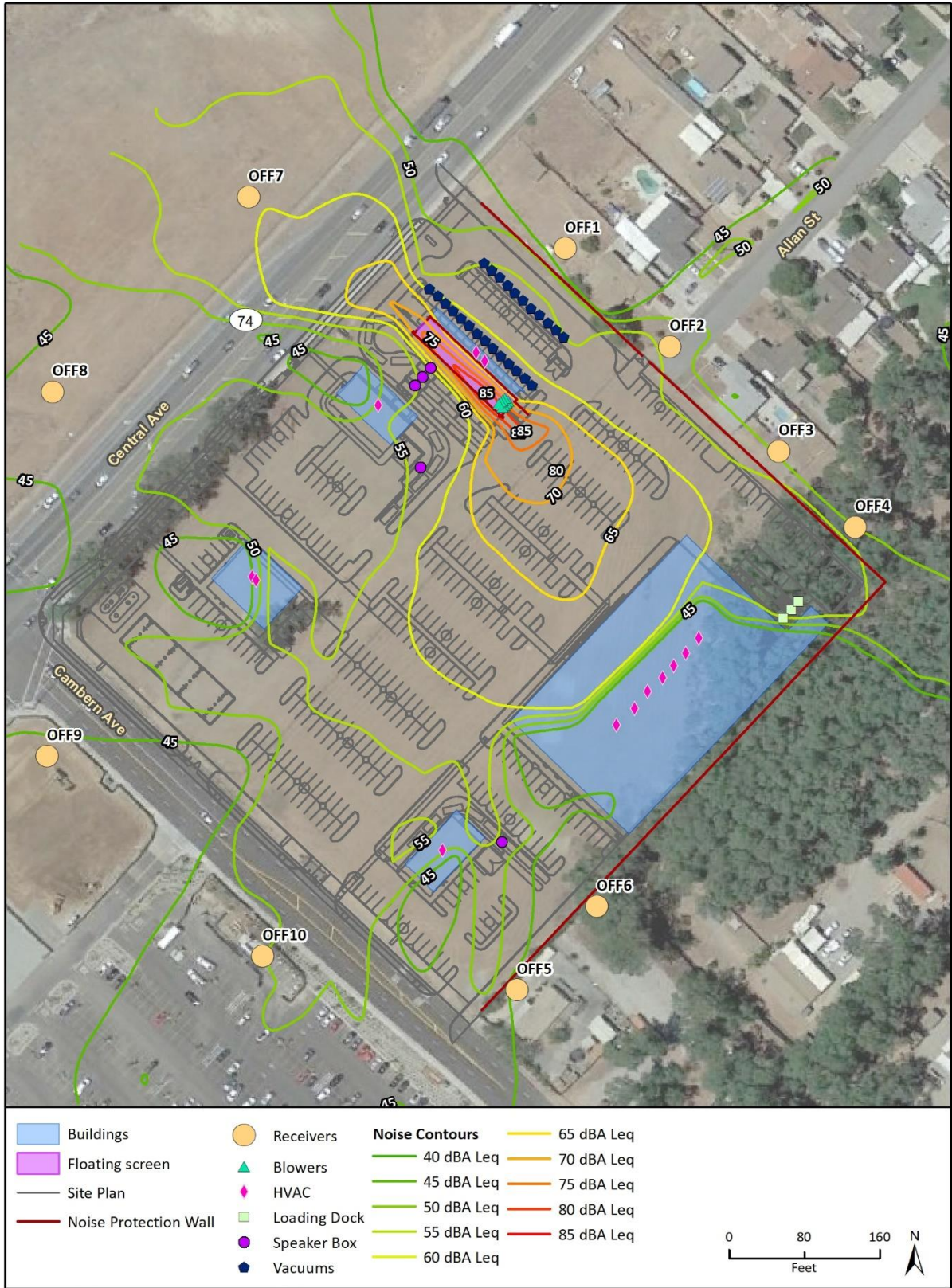
The primary factor affecting offsite noise levels would be increased traffic volumes due to the project. Noise levels with and without project generated traffic scenarios were developed based on algorithms and reference levels from the FHWA's Traffic Noise Model. Noise levels with and without project-generated traffic scenarios are shown in Table 15. As shown, traffic noise increases would range from less than 1 dBA to 2 dBA for all but one of the segments analyzed which would not exceed the 3 dBA criterion for offsite traffic noise impacts. The segment of Cambern Avenue from Central Avenue to Driveway 1 shows an increase of 3 dBA, however, noise levels would not exceed 5 3 dBA, and commercial uses are adjacent to this roadway segment and noise sensitive uses would not be exposed to this project generated traffic noise increase. Therefore, impacts would be less than significant.

Parking Lot Noise

The project would generate noise from parking lot activity such as car alarms, car horns, and door slams. Parking lot noise would range from 30 to 63 dBA at 100 feet (Gordon Bricken & Associates 1996). Parking lot noise would occur within 15 feet of the nearest property line. Therefore, noise

levels would range from 47 to 80 dBA at 15 feet. However, parking lot noise sources would be instantaneous noise sources, such as car door slams and horns, that would not result in an exceedance of the hourly noise level limits in Chapter 17.176.060 of the City's Municipal Code.

Figure 6 Modeled Receivers and Daytime Mitigated Noise Contours with Recommendations



This page intentionally left blank.

Table 15 Traffic Noise Levels (L_{dn} at 50 feet)

Roadway	Segment	Existing	Existing Plus Project (Phase 1)	Δ	Existing Plus Project (Buildout)	Δ	EAP	EAP (Phase 1) Plus Project	Δ	EAP (Buildout) Plus Project	Δ	EAPC	Δ	EAPC (Phase 1) Plus Project	Δ	EAPC (Buildout) Plus Project	Δ
Riverside Drive	Strickland Avenue to Collier Avenue	70	70	<1	70	<1	70	70	<1	70	<1	71	71	<1	71	<1	70
	Strickland Avenue to the west	69	69	<1	70	<1	70	70	<1	70	<1	70	70	<1	70	<1	70
Collier Avenue	Avenue 48 to Avenue 50	71	71	<1	71	<1	71	72	<1	72	<1	72	72	<1	72	<1	71
Central Avenue	Collier Avenue to I-15 on ramps	72	72	<1	72	<1	72	72	<1	72	<1	73	73	<1	73	<1	72
	Dexter Avenue to Cambern Avenue	74	74	<1	74	<1	74	74	<1	74	<1	75	75	<1	75	<1	74
	Cambern Avenue to Driveway 4	73	73	<1	73	<1	73	73	<1	73	<1	74	74	<1	74	<1	73
	Driveway 4 to Driveway 5	73	73	<1	73	<1	73	73	<1	73	<1	74	74	<1	74	<1	73
	Driveway 5 to Conrad Avenue	73	73	<1	73	<1	73	73	<1	73	<1	74	74	<1	74	<1	73
	Conrad Avenue to Rosetta Canyon Road	74	74	<1	75	<1	75	75	<1	75	<1	75	75	<1	76	<1	75
	Rosetta Canyon Road to the east	75	75	<1	75	<1	75	75	<1	75	<1	76	76	<1	76	<1	75
Camino Del Norte	Main Street to 2 nd Street	68	68	<1	68	<1	68	68	<1	69	<1	69	69	<1	69	<1	68
Dexter Avenue	2 nd Street to 3 rd Street	65	65	<1	66	<1	65	66	<1	66	<1	66	66	<1	66	<1	65
	3 rd Street to Central Avenue	64	64	<1	64	<1	64	64	<1	64	<1	64	64	<1	64	<1	64
	Central Avenue to the north	68	68	<1	68	<1	68	69	<1	69	<1	69	69	<1	69	<1	68
3 rd Street	Dexter Avenue to Cambern Avenue	60	60	<1	60	<1	60	60	<1	61	<1	62	62	<1	62	<1	60
	Cambern Avenue to Conrad Avenue	54	54	<1	54	<1	54	54	<1	54	<1	57	57	<1	57	<1	54
Cambern Avenue	3 rd Street to Driveway 3	59	59	<1	60	1	60	60	<1	60	<1	64	64	<1	64	<1	59
	Driveway 3 to Driveway 2	59	59	<1	60	1	60	60	<1	61	1	64	64	<1	64	<1	59
	Driveway 2 to Driveway 1	59	59	<1	61	2	61	61	<1	63	1	64	64	<1	65	1	59
	Driveway 1 to Central Avenue	59	60	<1	62	3	62	63	1	63	1	65	65	<1	65	1	59
Conrad Avenue	Central Avenue to 3 rd Street	57	57	<1	57	<1	57	57	<1	57	<1	58	58	<1	58	<1	57
Rosetta Canyon Road	Central Avenue to the south	62	63	<1	63	<1	63	63	<1	63	<1	65	65	<1	65	<1	62

EAP = Existing Plus Ambient Growth Plus Project
EAPC = Existing Plus Ambient Growth Plus Project Plus Cumulative
Δ = change in traffic noise levels
Source: Urban Crossroads, Central & Cambern Retail Traffic Analysis, 2022

This page intentionally left blank.

4.2 Item 2 – Vibration

Item: Would the project result in generation of excessive groundborne vibration or groundborne noise levels? (*Less Than Significant Impact*)

Construction activities known to generate excessive groundborne vibration, such as pile driving, would not be conducted by the project. The greatest anticipated source of vibration during general project construction activities would be from a large vibratory roller, which may be used within 15 feet of the nearest residential property line. A vibratory roller creates approximately 0.211 in./sec. PPV at a distance of 25 feet (Caltrans 2020). This would equal a vibration level of 0.368 in./sec. PPV at 15 feet. This vibration level would exceed the threshold of 0.25 in./sec. PPV. Therefore, temporary impacts associated with operation of a large vibratory roller during construction activities within 25 feet of the adjacent residential property lines would be significant.

The project does not include any substantial vibration sources associated with operation. Therefore, operational vibration impacts would be less than significant.

Recommendation

The following recommendation would reduce construction vibration levels at adjacent residential property lines:

NOI-2 TEMPORARY CONSTRUCTION VIBRATION REDUCTION

The project applicant shall reduce construction vibration levels at the adjacent residential property lines to 0.25 in./sec. PPV or less through the following measures:

- The proposed project shall implement the use of a small vibratory roller when compacting activities are conducted within 25 feet of an adjacent residential property line. A small vibratory roller creates approximately 0.101 in./sec. PPV at a distance of 25 feet (Caltrans 2020). This would equal a vibration level of 0.177 in./sec. PPV at 15 feet. This vibration level would not exceed the threshold of 0.25 in./sec. PPV.

Significance After Recommendation

With implementation of a small vibratory roller when compacting activities are conducted within 15 feet of an adjacent residential property line as described Mitigation Measure NOI-2, construction vibration levels would be reduced, resulting in mitigated construction vibration level due to compacting of 0.177 in./sec. PPV at 15 feet, which would not exceed the Lake Elsinore Municipal Code 17.176.080(G) vibration perception threshold at the adjacent residential property lines. Mitigated construction vibration level modeling results are shown in Appendix J. Therefore, construction noise impacts would be less than significant.

4.3 Item 3 – Airport Noise

Item: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (*No Impact*)

The Perris Airport is the nearest public airport, located approximately 7.8 miles to the northeast of the project site. The Skylark Airport is the nearest private airport, located approximately 4.3 miles to the southeast of the project site. According to the noise compatibility contours figure for the Perris Airport in the Riverside County Airport Land Use Compatibility Plan Policy Document (Riverside County Airport Land Use Commission 2004), the project site is located outside the airport's 60 CNEL noise contour. The Skylark Airport is not included in the County Airport Land Use Compatibility Plan Policy Document; however, the airport is primarily used for recreational skydiving and has limited flights because it is not open to the public. Both airports are located over two miles from the project site. Therefore, no substantial noise exposure from airport noise would occur to construction workers, users, or employees of the project, and no impacts would occur.

4.4 Item 4 - Land Use Compatibility

Land Use Compatibility: Would the project be subjected to noise levels in excess of the County's land use compatibility guidelines for noise? (*Consistent with Noise Land Use Compatibility Standards*)

Noise levels at the project site were estimated following the methodology and traffic volumes discussed in Section 3.4. Per Table 4 in Section 2.5, *Applicable Regulatory Setting*, a clearly compatible noise level for a commercial retail use is 70 dBA L_{dn} and a normally compatible noise level for a commercial retail use is 80 dBA L_{dn} . Therefore, if on-site exterior noise levels at the project exceed 80 dBA L_{dn} , the project would be inconsistent with the City of Lake Elsinore General Plan.

The edge of the project site is approximately 50 feet from the centerline of Central Avenue. At this distance, per Table 15, noise levels at this distance would reach 75 dBA L_{dn} at the project site. Therefore, ambient noise levels at the project would be compatible with the proposed land uses according to the City of Lake Elsinore's land use noise compatibility standards.

5 Conclusions

The project would generate both temporary construction-related noise and long-term noise associated with operation of the project. Construction noise would not exceed Lake Elsinore Municipal Code noise standards at the nearby land uses, and impacts from construction noise would be less than significant.

Combined operational activities on the project site would generate noise levels up to 58 dBA L_{eq} at adjacent residential uses to the east. The combined operational noise from the car wash, vacuums, drive-thru speaker boxes, loading docks, and mechanical equipment would not comply with Lake Elsinore's daytime and nighttime noise standards. As shown in Table 14 in Section 4.1, implementation of the proposed recommendations, limiting car wash operations to daytime hours and constructing a 12 foot-tall soundwall along the curb of the car wash tunnel exit for a distance of 20 feet to the south would achieve project compliance with daytime and nighttime noise limits, and the project would be consistent with the Lake Elsinore noise standards.

Project-generated traffic would not generate traffic noise levels that would exceed the threshold of 3 dBA; therefore, the off-site traffic noise increase would be less than significant.

The project would generate groundborne vibration during construction. Groundborne vibration would not exceed the applicable vibration threshold at the nearest property lines. Therefore, Recommendation NOI-2 would require the use of a small vibratory roller when compacting activities are within 25 feet of an adjacent property line. With implementation of this recommendation construction-related vibration impacts would be less than significant.

The project site is outside the noise contours for the Perris and Skylark Airports. Therefore, no substantial noise exposure would occur to construction workers, employees, or users of the project from aircraft noise.

Ambient noise levels at the project site would not exceed Lake Elsinore's 80 dBA L_{dn} compatibility standard for commercial retail land uses.

6 References

- California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. (CT-HWANP-RT-13-069.25.2) September. Available at: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf
- _____. 2020 *Transportation and Construction Vibration Guidance Manual*. (CT-HWANP-RT-20-365.01.01) September. Available at: <https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf>.
- Federal Highway Administration (FHWA). 2006. *FHWA Highway Construction Noise Handbook*. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). Available at: http://www.fhwa.dot.gov/environment/construction_noise/handbook.
- _____. 2011. *Highway Traffic Noise: Analysis and Abatement Guidance*. (FHWAHEP-10-025). December. Available at: <https://www.codot.gov/programs/environmental/noise/assets/fhwa-noise-guidance-dec-2011>
- _____. 2018. *Techniques for Reviewing Noise Analyses and Associated Noise Reports*. (FHWA-HEP-18-067). June. Available at: https://www.fhwa.dot.gov/Environment/noise/resources/reviewing_noise_analysis/fhwahp18067.pdf
- Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*. November. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf
- Gordon Bricken & Associates (1996): *Acoustical Analysis Addendum to the Adopted EIR Disneyland Resort City of Anaheim*. Table 16: Reference Parking Lot Levels, p. 38. February 26, 1996.
- Institute of Transportation Engineers (ITE). 2012. *Trip Generation Manual*, 10th Edition.
- Lake Elsinore, City of. General Plan. Adopted December 13, 2011. Available at: <http://www.lake-elsinore.org/city-hall/city-departments/community-development/planning/lake-elsinore-general-plan>
- _____. 2014. *Counts Unlimited*. Traffic Engineering Department. Available at: <http://www.lake-elsinore.org/city-hall/city-departments/public-works/engineering/traffic-engineering>
- Lawrence E. Kinsler and R. Frey, Austin and B. Coppens, Alan and V. Sanders, James. *Fundamentals of Acoustics*, 4th Edition. ISBN 0-471-84789-5. Wiley-VCH, December 1999.
- Ldn Consulting. 2011. *Noise Study*, 9th and Palm Commercial Development, Imperial Beach CA.
- Malcolm J. Crocker (Editor). 2007. *Handbook of Noise and Vibration Control Book*, ISBN: 978-0-471-39599-7, Wiley-VCH, October.
- Riverside County Airport Land Use Commission. 2004. *Riverside County Airport Land Use Compatibility Plan*. October 14. Available at: <http://www.rcaluc.org/Plans/New-Compatibility-Plan>
- Urban Crossroads. 2022. *Central & Cambern Retail Traffic Analysis*. City of Lake Elsinore.

This page intentionally left blank.

Appendix A

Project Phasing Plans

**C-2 ZONING
GENERAL
COMMERICAL**

**C-2 ZONING
GENERAL
COMMERICAL**

1 PHASE 1 SITE PLAN
SCALE: 1" = 40'-0"

62302049



ARCHITECT OF RECORD: MARLAH B. MEYER
8131. METCALF AVENUE, SUITE 300, OVERLAND PARK, KS 66204

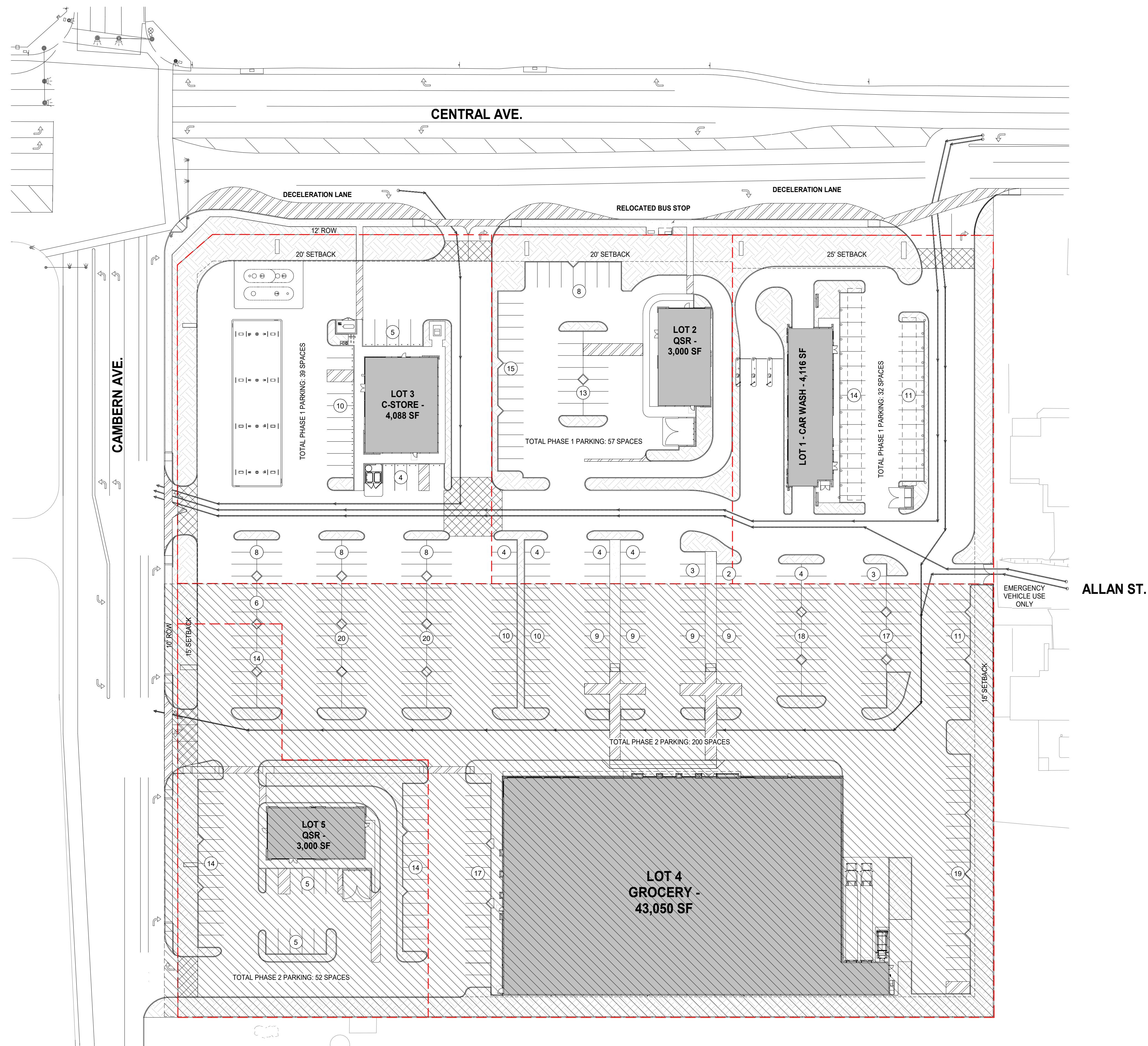
[illegible]

CONSULTING ENGINEER

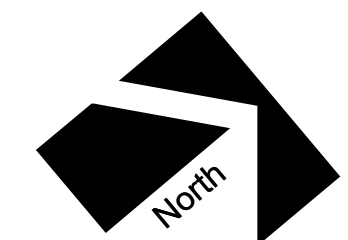
EVERGREEN DEVELOPMENT
CAMBERN AVE. & CENTRAL AVE
LAKE ELSINORE, CA 92532

SITE PLAN (PHASE 1 ONLY)

DATE:	02/09/22
DRAWN BY:	CSC
CHECKED BY:	
SCALE:	
PROJECT NUMBER:	62302049
SHEET:	
SD1.2	
REV:	



1 PHASING PLAN
SCALE: 1" = 40'-0"



PHASING LEGEND

PHASE 1 SITE DEVELOPMENT

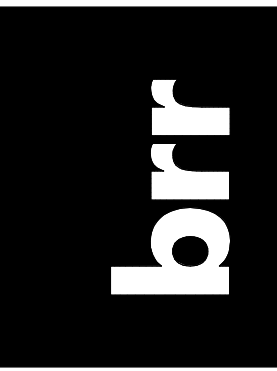
PROPOSED BUILDINGS

PHASE 2 SITE DEVELOPMENT

POTENTIAL EMERGENCY
VEHICLE & CONSTRUCTION
ROUTES THRU SITE

62302049

COPYRIGHT NOTICE:
THIS DRAWING WAS PREPARED FOR USE
ON A SPECIFIC SITE
CONTEMPORANEOUSLY WITH ITS ISSUE
DATE AND IT IS NOT SUITABLE FOR USE
ON A DIFFERENT PROJECT SITE OR AT A
LATER TIME. USE OF THIS DRAWING FOR
REFERENCE OR EXAMPLE ON ANOTHER
PROJECT REQUIRES THE SERVICES OF
PROPERLY LICENSED ARCHITECTS AND
ENGINEERS. REPRODUCTION OF THIS
DRAWING FOR REUSE ON ANOTHER
PROJECT IS NOT AUTHORIZED AND MAY BE
CONTRARY TO THE LAW.



ARCHITECT OF RECORD: MARIAH B. MEYER
8131 METCALF AVENUE, SUITE 300, OVERLAND PARK, KS 66204

REVISION:

[illegible]

CONSULTING ENGINEER

EVERGREEN DEVELOPMENT
CAMBERN AVE. & CENTRAL AVE
LAKE ELSINORE, CA 92532

PAD PHASING PLAN

DATE:	02/09/22
DRAWN BY:	CSC
CHECKED BY:	
SCALE:	
PROJECT NUMBER:	62302049

SD1.1

REV:

Appendix B

Noise Measurement Data

Ambient Noise Survey Data Sheet

Instructions: Document noise measurement locations with a photo of the site, including the noise meter. Additionally, take notes on general and secondary noise sources, including the instantaneous noise level if possible. As a reminder, A/C weighting should be set to "A", and response time should typically be set to "slow." For additional information, please review the *Noise Measurement Protocols* in the case or on file.

Project Name: Lake Elsinore Comm Dev Job Number: 21-10899
Date: 07/19/2021 Operator Name: Destiny Timms

Measurement #1

Location: NM 1 Begin time: 9:34 Finish time: 9:49
Measurement No.: 002 Wind (mph): 3 mph Direction: NE
Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)
Calibration (dB): Start: 93.6 End: 92.8
Primary Noise Sources: Hwy 74/Central Ave Distance: 150 Ft
Secondary Noise Sources: _____
Notes: Hwy 74/Central Ave traffic was loudest, note brick wall @ adj residence may impact noise levels
Traffic Count: Passenger Cars: (459) Medium Trucks (2 axles, 6 tires): _____ Heavy Trucks (3+ axles): TH TH TH III (18)
Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.): plane @ 9:43, loud semi @ 9:45
Leq: 56.7 SEL: 86.2 Lmax: 73.7 Lmin: 42.1 PK: 91.2
L(05): 59.8 L(10): 58.4 L(50): 54.2 L(90): 48.2 L(95): 45.8
Response: Slow Fast Peak Impulse

Measurement #2

Location: NM 2 Begin time: 9:11 Finish time: 9:26
Measurement No.: 001 Wind (mph): 1 mph Direction: NE
Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)
Calibration (dB): Start: 94.0 End: 93.6
Primary Noise Sources: Hwy 74 Traffic Distance: 404 Ft
Secondary Noise Sources: Roosters crowing @ adjacent prop, Allan St
Notes: Roosters from adjacent property, location was quiet
Traffic Count: Passenger Cars: _____ Medium Trucks (2 axles, 6 tires): _____ Heavy Trucks (3+ axles): _____
Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.): car did burn out @ 9:19
Leq: 46.2 SEL: 75.7 Lmax: 52.6 Lmin: 40.3 PK: ---
L(05): 49.7 L(10): 49.0 L(50): 45.5 L(90): 42.1 L(95): 41.5
Response: Slow Fast Peak Impulse

Notes:

Measurement #2

Location: NM 3 Begin time: 10:02 Finish time: 10:17

Measurement No.: 003 Wind (mph): 3 mph Direction: NE

Cloud Cover Class: Overcast (>80%) Light (20-80%) Sunny (<20%)

Calibration (dB): Start: 94.0 End: 93.7

Primary Noise Sources: Cambern Ave Distance: 100 Ft

Secondary Noise Sources: Hwy 74 / Central Ave, Dogs barking

Notes: When it got quiet I could hear the 1-15 in the distance

Traffic Count: Passenger Cars: (36)

Medium Trucks (2 axles, 6 tires): (1) Heavy Trucks (3+ axles): (2)

Instantaneous Noise Sources/Levels (e.g., airplane, bus airbrake, etc.): Plane @ 10:10, and 10:12

L_{eq}: 57.3 SEL: 86.8 L_{max}: 71.3 L_{min}: 46.5 PK: 84.2

L(05): 63.4 L(10): 61.3 L(50): 52.0 L(90): 48.5 L(95): 47.9

Response: Slow Fast Peak Impulse

- Dogs barked @ adj residence First 5 mins of measurement

- Using a saw ~ 10:08, ~ 10:10, ~ 10:15 across Cambern @ a small Proj. Site (see photos)

- Residences were quiet

NM1

Freq Weight : A
 Time Weight : SLOW
 Level Range : 40-100
 Max dB : 73.7 - 2021/07/19 09:42:02
 Level Range : 40-100
 SEL : 86.2
 Leq : 56.7

No. s	Date Time	(dB)					
1	2021/07/19 09:30:42	52.5	51.9	49.1	45.7	44.9	
6	2021/07/19 09:30:57	48.1	55.5	57.7	58.1	57.7	
11	2021/07/19 09:31:12	57.9	57.6	55.4	56.2	53.5	
16	2021/07/19 09:31:27	46.9	43.1	42.2	42.5	45.0	
21	2021/07/19 09:31:42	50.6	55.2	53.4	54.8	55.9	
26	2021/07/19 09:31:57	54.4	54.6	52.4	55.4	64.5	
31	2021/07/19 09:32:12	60.4	57.9	55.8	57.7	56.0	
36	2021/07/19 09:32:27	55.6	56.9	58.0	54.4	53.3	
41	2021/07/19 09:32:42	54.9	52.6	51.3	51.4	55.3	
46	2021/07/19 09:32:57	55.0	54.1	52.8	53.7	51.7	
51	2021/07/19 09:33:12	49.8	52.8	57.8	54.2	50.7	
56	2021/07/19 09:33:27	48.6	48.5	46.6	46.7	53.7	
61	2021/07/19 09:33:42	57.2	56.7	57.3	55.0	55.4	
66	2021/07/19 09:33:57	56.8	55.3	54.0	54.1	55.2	
71	2021/07/19 09:34:12	54.7	55.1	54.8	54.9	52.2	
76	2021/07/19 09:34:27	51.6	51.5	51.4	51.9	51.5	
81	2021/07/19 09:34:42	51.2	50.4	46.9	48.2	53.2	
86	2021/07/19 09:34:57	57.8	56.7	56.1	56.3	55.4	
91	2021/07/19 09:35:12	53.2	55.4	55.2	54.3	54.5	
96	2021/07/19 09:35:27	56.0	51.2	47.5	50.4	49.7	
101	2021/07/19 09:35:42	55.2	59.3	60.8	56.4	55.5	
106	2021/07/19 09:35:57	56.5	54.0	51.8	50.5	50.3	
111	2021/07/19 09:36:12	51.3	54.2	56.4	55.2	58.8	
116	2021/07/19 09:36:27	60.1	58.0	59.7	56.2	58.1	
121	2021/07/19 09:36:42	57.8	58.0	53.0	51.9	52.6	
126	2021/07/19 09:36:57	55.2	54.9	54.5	52.6	53.8	
131	2021/07/19 09:37:12	52.5	54.0	50.7	46.8	45.5	
136	2021/07/19 09:37:27	45.3	46.2	48.0	50.1	53.9	
141	2021/07/19 09:37:42	55.7	57.0	57.7	57.9	61.8	
146	2021/07/19 09:37:57	56.4	54.0	55.1	52.5	48.6	
151	2021/07/19 09:38:12	50.8	49.2	53.2	52.1	49.5	
156	2021/07/19 09:38:27	47.6	49.5	52.5	57.8	56.7	
161	2021/07/19 09:38:42	56.2	53.2	51.4	50.2	49.7	
166	2021/07/19 09:38:57	50.4	52.5	54.6	54.1	57.8	
171	2021/07/19 09:39:12	60.0	57.7	60.2	65.4	58.0	
176	2021/07/19 09:39:27	57.4	58.3	57.9	58.2	55.2	
181	2021/07/19 09:39:42	57.5	57.8	59.3	59.3	60.4	
186	2021/07/19 09:39:57	62.5	60.7	59.5	58.6	58.3	
191	2021/07/19 09:40:12	57.6	56.7	57.7	55.4	54.1	
196	2021/07/19 09:40:27	53.9	55.9	58.5	55.2	52.7	
201	2021/07/19 09:40:42	52.9	50.3	46.4	44.9	45.5	
206	2021/07/19 09:40:57	46.9	52.3	52.9	51.5	53.8	
211	2021/07/19 09:41:12	54.2	53.7	53.1	51.4	49.2	
216	2021/07/19 09:41:27	50.6	52.5	58.3	58.6	57.1	
221	2021/07/19 09:41:42	61.5	57.0	58.4	59.6	64.7	
226	2021/07/19 09:41:57	70.1	72.5	65.7	58.4	58.1	
231	2021/07/19 09:42:12	55.7	53.8	54.0	52.2	53.3	
236	2021/07/19 09:42:27	52.6	49.1	49.9	52.5	54.8	
241	2021/07/19 09:42:42	53.2	50.3	50.3	54.5	55.3	
246	2021/07/19 09:42:57	57.5	57.8	56.7	55.0	50.1	
251	2021/07/19 09:43:12	54.1	56.8	60.6	56.2	55.1	
256	2021/07/19 09:43:27	58.5	56.5	55.3	54.0	52.6	
261	2021/07/19 09:43:42	51.0	51.6	51.9	54.0	53.7	
266	2021/07/19 09:43:57	54.5	52.0	50.5	49.2	49.5	
271	2021/07/19 09:44:12	48.5	49.9	58.3	63.3	58.3	
276	2021/07/19 09:44:27	55.6	55.6	57.2	55.1	56.1	
281	2021/07/19 09:44:42	55.7	51.8	46.1	44.0	44.7	
286	2021/07/19 09:44:57	45.3	48.5	49.8	54.9	55.1	
291	2021/07/19 09:45:12	56.3	55.7	53.3	52.0	54.3	
296	2021/07/19 09:45:27	50.7	46.6	51.9	53.8	56.7	

NM2

Freq Weight : A
 Time Weight : SLOW
 Level Range : 40-100
 Max dB : 52.6 - 2021/07/19 09:12:28
 Level Range : 40-100
 SEL : 75.7
 Leq : 46.2

No. s	Date Time	(dB)					
1	2021/07/19 09:07:43	43.4	45.6	43.8	42.2	47.2	
6	2021/07/19 09:07:58	44.2	46.8	45.6	46.3	46.0	
11	2021/07/19 09:08:13	45.5	46.3	45.8	48.9	48.5	
16	2021/07/19 09:08:28	47.7	51.1	47.6	45.2	45.7	
21	2021/07/19 09:08:43	47.3	43.8	44.3	43.4	42.5	
26	2021/07/19 09:08:58	42.3	43.0	44.4	43.6	43.7	
31	2021/07/19 09:09:13	48.8	44.7	43.7	43.4	45.2	
36	2021/07/19 09:09:28	45.8	46.8	47.3	46.0	46.0	
41	2021/07/19 09:09:43	46.1	46.6	48.9	50.7	46.8	
46	2021/07/19 09:09:58	44.6	44.4	44.9	49.1	46.2	
51	2021/07/19 09:10:13	45.0	43.7	43.7	43.9	43.9	
56	2021/07/19 09:10:28	43.0	42.6	43.8	43.8	48.5	
61	2021/07/19 09:10:43	45.8	44.7	46.1	45.9	47.3	
66	2021/07/19 09:10:58	45.8	45.4	45.1	45.6	46.0	
71	2021/07/19 09:11:13	47.6	47.6	48.1	49.1	44.3	
76	2021/07/19 09:11:28	46.8	43.6	41.9	41.1	41.5	
81	2021/07/19 09:11:43	41.4	41.9	41.7	41.9	41.6	
86	2021/07/19 09:11:58	42.0	41.9	41.9	48.5	42.3	
91	2021/07/19 09:12:13	42.0	45.0	47.7	48.8	52.2	
96	2021/07/19 09:12:28	48.5	46.4	45.7	45.7	50.9	
101	2021/07/19 09:12:43	50.8	49.2	50.2	46.6	44.8	
106	2021/07/19 09:12:58	43.3	42.3	41.9	41.6	41.5	
111	2021/07/19 09:13:13	41.3	41.2	40.5	46.3	43.1	
116	2021/07/19 09:13:28	43.3	47.1	47.1	48.1	47.5	
121	2021/07/19 09:13:43	45.2	44.1	43.6	42.8	42.7	
126	2021/07/19 09:13:58	43.0	42.9	42.2	41.8	43.7	
131	2021/07/19 09:14:13	44.4	48.0	47.4	47.0	48.6	
136	2021/07/19 09:14:28	49.0	50.0	49.5	50.0	50.6	
141	2021/07/19 09:14:43	49.4	48.4	48.2	47.2	47.1	
146	2021/07/19 09:14:58	47.2	47.5	47.4	47.5	46.8	
151	2021/07/19 09:15:13	45.8	46.5	46.1	46.0	49.6	
156	2021/07/19 09:15:28	48.9	49.7	47.8	51.6	51.5	
161	2021/07/19 09:15:43	49.5	49.3	47.5	47.3	45.3	
166	2021/07/19 09:15:58	48.9	48.5	46.7	48.6	48.2	
171	2021/07/19 09:16:13	47.0	48.2	49.8	49.5	50.4	
176	2021/07/19 09:16:28	49.6	49.5	48.0	47.4	47.6	
181	2021/07/19 09:16:43	47.9	46.7	45.6	46.0	47.4	
186	2021/07/19 09:16:58	46.5	45.7	44.1	43.9	44.2	
191	2021/07/19 09:17:13	44.5	44.5	43.6	42.4	43.3	
196	2021/07/19 09:17:28	42.8	43.3	44.7	45.6	45.8	
201	2021/07/19 09:17:43	46.0	47.0	46.6	47.6	47.8	
206	2021/07/19 09:17:58	46.9	46.7	46.9	47.1	47.3	
211	2021/07/19 09:18:13	45.9	45.4	46.8	46.6	46.3	
216	2021/07/19 09:18:28	44.4	43.3	44.2	45.0	43.1	
221	2021/07/19 09:18:43	43.2	43.2	43.8	42.9	43.5	
226	2021/07/19 09:18:58	43.3	43.6	46.8	43.3	43.0	
231	2021/07/19 09:19:13	43.7	43.9	45.0	44.9	42.7	
236	2021/07/19 09:19:28	41.5	41.6	41.9	41.5	42.4	
241	2021/07/19 09:19:43	41.6	41.5	41.2	41.3	42.6	
246	2021/07/19 09:19:58	43.4	43.8	43.3	44.4	47.6	
251	2021/07/19 09:20:13	46.7	47.4	47.3	46.1	46.5	
256	2021/07/19 09:20:28	47.6	46.7	47.0	47.9	46.3	
261	2021/07/19 09:20:43	45.9	46.6	47.8	46.6	44.3	
266	2021/07/19 09:20:58	43.0	43.4	43.0	43.5	42.5	
271	2021/07/19 09:21:13	41.6	42.4	42.1	42.9	42.9	
276	2021/07/19 09:21:28	43.7	43.5	42.7	44.7	48.0	
281	2021/07/19 09:21:43	48.0	49.7	51.4	51.8	50.6	
286	2021/07/19 09:21:58	49.0	49.3	48.8	45.4	44.5	
291	2021/07/19 09:22:13	44.5	45.4	45.8	45.7	44.9	
296	2021/07/19 09:22:28	44.1	43.0	42.2	43.1	43.7	

NM3

Freq Weight : A
 Time Weight : SLOW
 Level Range : 40-100
 Max dB : 71.3 - 2021/07/19 09:58:57
 Level Range : 40-100
 SEL : 86.8
 Leq : 57.3

No. s	Date Time	(dB)				
1	2021/07/19 09:58:54	68.0	61.4	56.1	51.8	49.7
6	2021/07/19 09:59:09	52.3	49.6	64.4	66.0	60.1
11	2021/07/19 09:59:24	50.5	56.7	66.9	64.7	66.1
16	2021/07/19 09:59:39	54.6	59.1	60.2	55.1	57.1
21	2021/07/19 09:59:54	55.3	63.2	59.0	63.8	62.5
26	2021/07/19 10:00:09	63.8	62.1	56.4	59.7	62.2
31	2021/07/19 10:00:24	58.2	58.7	56.9	57.6	51.2
36	2021/07/19 10:00:39	48.5	64.6	59.6	52.2	56.2
41	2021/07/19 10:00:54	59.5	57.1	64.0	52.8	65.8
46	2021/07/19 10:01:09	66.8	69.8	60.9	65.3	63.9
51	2021/07/19 10:01:24	60.0	58.1	51.2	49.6	55.9
56	2021/07/19 10:01:39	50.0	48.8	48.7	47.7	61.1
61	2021/07/19 10:01:54	64.0	60.9	51.4	59.1	57.2
66	2021/07/19 10:02:09	50.0	47.1	62.2	61.3	51.2
71	2021/07/19 10:02:24	48.1	48.1	59.2	50.6	65.9
76	2021/07/19 10:02:39	64.9	54.4	51.7	55.5	55.8
81	2021/07/19 10:02:54	54.1	52.3	53.0	52.0	50.5
86	2021/07/19 10:03:09	49.2	49.2	49.1	48.0	48.4
91	2021/07/19 10:03:24	63.1	56.3	49.2	62.3	52.3
96	2021/07/19 10:03:39	49.3	49.2	49.0	49.0	49.1
101	2021/07/19 10:03:54	49.1	49.4	50.1	49.6	49.2
106	2021/07/19 10:04:09	51.0	53.9	55.7	55.2	53.7
111	2021/07/19 10:04:24	53.5	52.4	51.0	51.4	55.0
116	2021/07/19 10:04:39	51.8	49.7	48.6	47.5	47.7
121	2021/07/19 10:04:54	47.7	48.5	48.7	49.4	53.7
126	2021/07/19 10:05:09	54.3	50.1	52.0	54.3	51.5
131	2021/07/19 10:05:24	48.3	48.3	50.1	50.6	51.0
136	2021/07/19 10:05:39	50.1	51.1	50.7	50.9	55.5
141	2021/07/19 10:05:54	52.0	49.6	48.2	47.7	46.9
146	2021/07/19 10:06:09	46.6	46.6	46.7	47.5	48.0
151	2021/07/19 10:06:24	48.4	47.9	50.8	51.6	50.5
156	2021/07/19 10:06:39	49.8	48.6	48.3	50.4	51.6
161	2021/07/19 10:06:54	52.2	51.7	51.2	52.2	51.4
166	2021/07/19 10:07:09	55.9	56.4	52.3	49.1	50.8
171	2021/07/19 10:07:24	54.9	57.1	55.0	54.8	53.8
176	2021/07/19 10:07:39	58.4	55.1	51.6	50.9	51.8
181	2021/07/19 10:07:54	50.4	49.8	48.9	49.7	50.0
186	2021/07/19 10:08:09	51.4	55.3	54.5	52.4	53.0
191	2021/07/19 10:08:24	53.0	53.2	51.5	52.1	53.2
196	2021/07/19 10:08:39	55.0	56.4	53.3	51.1	53.2
201	2021/07/19 10:08:54	52.9	55.0	58.1	61.0	60.7
206	2021/07/19 10:09:09	63.5	62.8	64.4	63.6	60.0
211	2021/07/19 10:09:24	56.8	58.9	60.9	57.2	55.4
216	2021/07/19 10:09:39	55.8	59.4	63.9	60.1	57.9
221	2021/07/19 10:09:54	54.1	50.9	49.9	49.7	49.0
226	2021/07/19 10:10:09	49.0	48.3	48.8	48.9	49.8
231	2021/07/19 10:10:24	50.8	50.5	49.6	49.7	49.3
236	2021/07/19 10:10:39	48.5	48.8	51.5	55.8	53.1
241	2021/07/19 10:10:54	54.1	53.3	51.2	50.3	51.2
246	2021/07/19 10:11:09	51.5	51.1	50.1	50.2	50.6
251	2021/07/19 10:11:24	50.2	49.6	51.8	58.8	55.3
256	2021/07/19 10:11:39	51.5	53.6	54.8	58.6	59.7
261	2021/07/19 10:11:54	55.2	55.0	56.5	50.9	56.9
266	2021/07/19 10:12:09	56.6	52.5	53.0	52.4	51.5
271	2021/07/19 10:12:24	52.9	51.4	49.0	48.3	50.0
276	2021/07/19 10:12:39	56.6	57.8	50.1	48.4	50.3
281	2021/07/19 10:12:54	47.9	50.7	53.6	54.9	50.0
286	2021/07/19 10:13:09	49.2	52.5	51.3	49.3	47.9
291	2021/07/19 10:13:24	48.1	50.1	53.1	51.8	50.4
296	2021/07/19 10:13:39	50.3	50.6	50.0	50.1	49.1

Appendix C

Roadway Construction Noise Model (RCNM) Results

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 01/17/2022
Case Description: Lake Elsinore Commercial

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Reference Distance	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0
Scraper	No	40		83.6	50.0	0.0
Dump Truck	No	40		76.5	50.0	0.0

Results

[illegible]

[illegible]

**** Receptor #2 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
-----	-----	-----	-----	-----
Adjacent Residences	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Excavator	No	40		80.7	150.0	0.0
Dozer	No	40		81.7	150.0	0.0
Front End Loader	No	40		79.1	150.0	0.0
Scraper	No	40		83.6	150.0	0.0
Dump Truck	No	40		76.5	150.0	0.0

Results

[illegible]

Appendix D

Car Wash Specifications

P D Q L A S E R W A S H S E R I E S

LASERWASH[®] 360

LASERWASH



Touch-Free In-Bay Automatic Vehicle Wash System



VEHICLE WASH SYSTEMS

PART OF OPW A DOVER COMPANY



PERFORMANCE, DEPENDABILITY AND QUALITY

With more than 10,000 LaserWashes shipped worldwide, PDQ Manufacturing, Inc., takes great pride in being the leader in the in-bay automatic vehicle wash industry. We are dedicated to providing wash operators with the most innovative equipment that exemplifies our tradition of **Performance, Dependability and Quality**. The new LaserWash® 360 raises the standard again with new revenue-enhancement features and total cost-of-ownership improvements that offers wash operators the opportunity to realize the industry's highest return on investment.



Simplified engineering and high-quality materials provide the optimal balance between initial investment and long-term profitability. Substantially faster wash speeds increase vehicle throughput, resulting in shorter wash lines that will delight your customers and keep them coming back again and again. Smart 360™ Technology enables the LaserWash® 360 to be highly responsive to dynamic conditions in the wash bay, minimizing downtime and optimizing the wash process, resulting in higher customer satisfaction and repeat business.

E-Chain

Left or right mounted energy chain for easy and low-cost installation



Slip-Free Belt Drive

Bridge and trolley movements are controlled using slip-free drive belts for improved performance and wash accuracy. Less moving parts provide a much simpler drive system.



Rollers Inside

Bridge and trolley movements are smooth and effortless using internally mounted dual-axis rollers. The hanging design enhances self-centering and improved roller life by protecting the rollers from the harsh wash environment.



The LaserWash® 360's simple but sophisticated feature set provides exceptional chemical application and coverage with rounded corner profiling, Smart Dwell® chemical deployment and articulating arch functions that allow the system to cover the backs of side mirrors. The new arch-oscillation feature aggressively attacks bugs on the front of vehicles from multiple angles for superior bug removal and cleaning in areas with even the most difficult deposits. With more than 1,000 PSI (70 BAR) water pressure, the LaserWash® 360 supplies the necessary impingement to remove stubborn dirt and debris in even the most hard-to-reach areas of the vehicle. The LaserWash® 360 allows you to store and readily access your preferred or seasonal wash packages, customize wash services and adjust wash speeds in an infinite set of combinations. This functionality provides site operators with the ultimate programmable wash system for fast, consistent cleaning and exceptional performance.



Revenue Enhancing Services

The LaserWash® 360 offers significantly faster wash speeds that minimizes your customer's valuable time at the site. Unlimited wash-package configurations and multiple service offerings allows you to provide customers a full array of choices that satisfy even their most discriminating needs. New up-sellable features include front bug prep for superior bug removal, dedicated super sealants and FlashDry® rinse options that offer a choice of multiple drying configurations. These innovative services delight your customers with the ultimate washing experience, and they will leave your site with the cleanest, shiniest and driest vehicle possible, one that they will be proud to drive.



Turn Your Wash into a Glowing Success

Put the Shine back into your profits with the OverGlow Hi-Gloss Application System. Not only will your customers love their shiny vehicle, you will love the extra revenue this product is capable of generating. Your customers will enjoy the look of a colorful, thick sheet of solution draping their vehicle. The OverGlow system includes strategically located bright LED lights that will further enhance the customer experience, ensuring excitement as well as performance.



Increased service offerings include undercarriage, OverGlow, triple foam, bug prep, super sealant and more.



Lower Cost of Ownership

As car wash operating costs continue to rise, operators are taking a much closer look at reducing electrical, water, chemical and maintenance costs to better compete and improve their profitability. The LaserWash® 360 was designed with this in mind: minimizing water requirements, reducing electrical consumption through the incorporation of variable-frequency drives and lowering chemical usage that allows the savings to drop down to the bottom line. Smart 360™ Technology dramatically reduces the need for site attendants to intervene with the wash process allowing them to focus on more important tasks.

A "keep-it-simple" design goal minimizes the need for sensors, grease fittings, swivels and valves, while the use of common electrical components throughout the system allows easier troubleshooting, minimizes regular maintenance costs and delivers consistent high-quality cleaning. Additionally, the LaserWash® 360 is built using only the best in non-corrosive materials, providing operators a rugged machine that will deliver a long, reliable life of revenue generation.

Vehicle Positioning

One of PDQ's most recognizable innovations is the unparalleled Virtual Treadle®. This electronic vehicle-sensing technology eliminates drive-on floor-mounted mechanisms, creating a wide open and inviting bay for your customers. The Virtual Treadle process begins as the vehicle enters the wash bay. Ultrasonic sensors accurately measure the vehicle's width, and bridge sensors signal the driver to stop or back up, by activating easy to understand audible LED signs. The wash system is then activated with an electronic safety envelope surrounding the entire vehicle, allowing the LaserWash® 360 to maintain an optimum cleaning distance whether the vehicle is parked to one side or angled in the wash bay.

Virtual Treadle Loading

The totally integrated loading system provides consumers with simple entry into the wash without the hassles of treadles, guide rails or hanging tee-bars.



LASERGLOW

ILLUMINATION EFFECT SYSTEM



Get Your Wash Noticed... Not only will the LaserGlow System help improve your customer flow, it can also be configured to work for you 24/7/365 by illuminating your wash bay day and night whether there is a vehicle in your bay or not. The system can be programmed to display multiple color combinations of flashing patterns, or constant colored illumination that matches your brand image. A glow from your wash bay can be a highly effective marketing tool to draw more attention to your wash site encouraging consumers to take notice and keep your existing customers coming back again and again.

Available on new equipment or as a retrofit kit for installed LaserWash 360's



The ultra-sophisticated LaserWash® 360 Arch Control System drives quicker throughput and amazes customers with its precise movements throughout the entire wash process. The arch is able to rotate 360 degrees while simultaneously navigating around the vehicle. The Automatic Obstacle Guidance System uses advanced technology to locate obstacles such as trailer hitches, side mirrors and other obstacles that may restrict the wash arch from properly traveling around the perimeter of the vehicle. The arch will move away from the obstacle, record the position of the obstacle to avoid it on subsequent passes and continue washing the vehicle. If the wash arch cannot avoid an obstacle it will attempt to fully retract, rinse off any solution using the overhead rain arch and prompt the customer to exit the bay. After the vehicle has exited and the bay is clear the machine will automatically reset in preparation for the next vehicle.



STEP 1
Move away from the obstacle.

STEP 2
Automatically back off to safely pass around the obstacle.

STEP 3
Continue wash process and record position to avoid obstacle on the next pass.



This ensures the safest and most effective wash for all vehicle configurations. The three-axis arch movement provides rounded corner profiling that produces consistent and effective coverage by keeping the nozzles directed at the vehicle no matter which position the arch is in, a capability that sets a new, unmatched standard in the industry. No more chemicals or water sprayed on the floor! The Smart 360™ arch control makes every second productive – corner profiling eliminates wasted movement and the wash time at each corner is reduced by 60%.



PDQ's LaserWash® 360 integrated dryer option can be coupled with the unique FlashDry® High-Volume Spot-Free Rinse service. FlashDry® requires no additional time for a basic dry by completing the rinse and dry cycles in a single, simultaneous operation. Developed on the principal that it is easier to remove water that is already in motion, FlashDry® technology simultaneously rinses and removes more than 80% of the water in a single 10-second pass. Additional dryer options include a MaxAir® Stand-Alone Dryer, or the ability to use the integrated dryer as a drive-through dryer unit as the customer exits the wash bay. These options allow greater package differentiation, giving operators the ability to up-sell customers for increased revenue and profitability.



Integrated SwingAir Producers



SwingAir Synchronized Motion Drying System

Your customers will enjoy drier vehicles with PDQ's new SwingAir Synchronized Motion Drying System. The enhanced SwingAir oscillating feature improves dryer performance while still using less energy than most conventional dryers. This new system incorporates motion in the center two producers to help sweep water off of the vehicle's top surface, allowing the two outside producers to focus on pushing water down and off the sides of the vehicle. The SwingAir feature is available on both stand-alone and integrated MaxAir® drying systems.



The LaserWash® 360 wash control system uses a web browser interface, which allows you to access all key operating functions of the wash equipment through your web browser without any special software. Additionally, you can configure wash packages, program machine functions and monitor sales activity remotely over the Internet, getting real-time information and eliminating unnecessary visits to your wash sites. The LaserWash® 360 can also be programmed to automatically send alerts to your PC, Tablet or Smartphone to let you know if your wash is down or to provide status updates on critical issues that may be occurring at your wash locations. This capability keeps you in touch with all of your sites from anywhere at anytime.



LaserWash® 360 Features:

Standard Machine Features:

Standard Machine Includes: LaserWash® 360, Corrosion-Resistant Bridge & Trolley, Smart 360™ Technology (with: Smart Networking, Smart Dwell®, Smart Arch Control, Smart Drying System and Smart Cleaning System), Automatic Obstacle Guidance, SST Wall Mounts, Aluminum Rails, Virtual Treadle, Electrical Control Panels, Basic LED In-Bay Sign, General Pump



Scan this QR code with your Smartphone and view the LaserWash® 360 video

Options:

- CAT 3535 Pump
- Water Heater
- Second/Third Pressure Fed Inlet
- Water Saver Package
- In-Bay Pump Station Covers
- 2 or 4 Nozzle Integrated Dryer
- MaxAir® Stand Alone Dryer
- SwingAir Synchronized Motion Drying System
- LED Service Confirmation Sign
- LED Entrance Sign
- LaserGlow Illumination Effect System
- High Pressure Undercarriage
- Extended Solution Package
- 3X Color Foam
- Booster Pump for Low Pressure Sites
- Dedicated Super Sealant Manifold
- Dedicated Front Bug Prep Manifold
- Rust Inhibitor
- Wheel Cleaner
- High Volume Rinse Arch
- Electric High Pressure Gatling Guns
- Free Standing Frame
- Spot Free Rinse Application
- Water Reclaim Systems
- Storage Tanks
- Wash Activation Entry Terminals
- Cortex Site Management Software
- WALs Loyalty Program

LaserWash® 360 Specifications

Building Requirements

Height	Wall Mount	10'-6" Minimum (3.20 m)
	Frame Mount	10'-8" (3.28 m)
Width	Wall Mount	13'-6" Minimum to 18'-0" Maximum (4.11 to 5.49 m)
	Frame Mount	13'-6" Minimum (w/o integrated dryer) (4.11 m)
Length	Wall Mount	14'-1" Minimum (w/integrated dryer) (4.28 m)
	Frame Mount	28'-4" (full length rails)** (8.64 m)
	Frame Mount	29'-7" (full length rails)** (9.02 m)

Note: Equipment dimension specifications do not take into consideration any obstructions, unusual wash bay configurations, etc. **Rails can be cut to length for shorter bays.

Utility Requirements

Air	1.5 SCFM @ 90 psi (6.21 Bar)
Water	38 GPM (143.8 LPM) @ 30 psi (2.07 Bar) - Direct Feed
	19 GPM (71.9 LPM) @ 10 psi (0.69 Bar) - Low Flow Tank Feed
Electrical	3-Phase, 50/60 Hz

Electrical Requirements

Voltage	Pump Station	Water Heater	Bridge	Dryer Power Feed #1	Dryer Power Feed #2
208/230	90/85 Amps	28/25 Amps	20 Amps	44/41 Amps	44/41 Amps
380	60 Amps	25 Amps	20 Amps	15 Amps	15 Amps
460	40 Amps	208/230V - 28/25 Amps	208/230V - 20 Amps	21 Amps	21 Amps
575	30 Amps	208/230V - 33/30 Amps	208/230V - 20 Amps	17 Amps	17 Amps

Drying Options

30 HP Integrated 4 – Producer MaxAir® Dryer (FlashDry Ready)	(208/230/380/460/575V 60 Hz)	(220/380V 50Hz)
15 HP Integrated 2 – Producer MaxAir® Dryer (FlashDry Ready)	(208/230/380/460/575V 60 Hz)	(220/380V 50 Hz)
30 HP Stand Alone 4 – Producer MaxAir® Dryer	(208/230/380/460/575V 60 Hz)	(220/380V 50Hz)
45 HP Stand Alone 6 – Producer MaxAir® Dryer	(208/230/380/460/575V 60 Hz)	(220/380V 50 Hz)

PDQ reserves the right to revise designs, add or delete features and change specifications at any time without notice or obligation.

Feel comfortable in your decision to purchase PDQ Equipment.
We are proud to be part of **DOVER CORPORATION** A Fortune 500 Company.

PDQ Manufacturing, Inc. 1698 Scheuring Rd. De Pere, WI 54115 USA (920) 983-8333 1-800-227-3373 www.pdqinc.com
Copyright © 2010 PDQ Manufacturing, Inc.





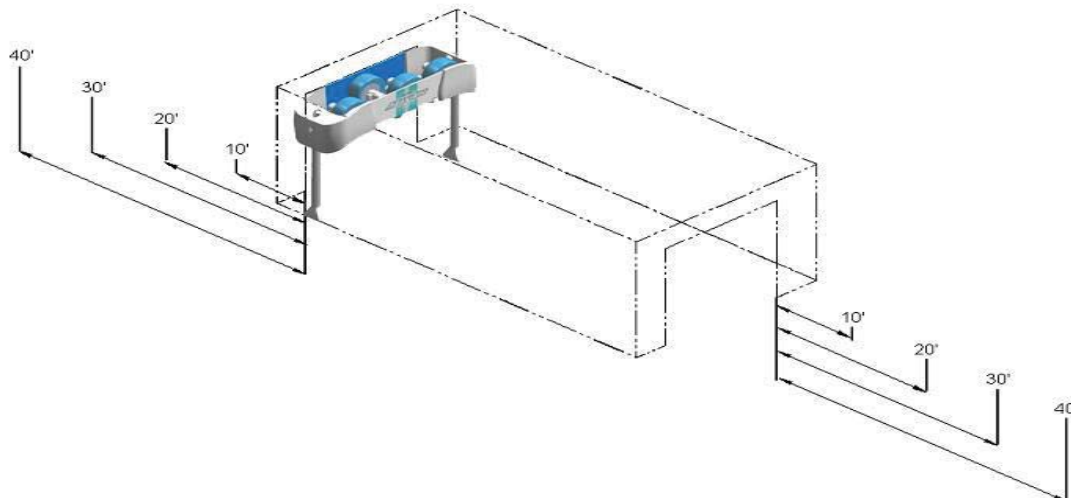
PDQ LaserWash 360 Integrated Dryer Decibel Reading

Below is the test data and associated decibel readings of the PDQ LaserWash 360 with 4 On-Board dryers, with and without doors, on the carwash bay.

DOOR OPEN/CLOSED	ENTRANCE/EXIT	dBA AT DISTANCE FROM DOOR OPENING			
		0' (3.04M)	05' (6.09M)	10' (9.14M)	20' (12.19M)
DOOR OPEN	ENTRANCE	90	87	82	76
	EXIT	92	88	84	78
DOOR CLOSED	ENTRANCE	77	73	70	67
	EXIT	79	75	72	69

Bay Dimensions: 12' (3.65M) H x 15' (4.57M) W x 50' (15.24M) L

Building Materials: Modular steel building with fiberglass lined inner walls; Glass windows on right side



Note: The actual sound level will vary depending on factors including but not limited to the location of the carwash site, type of building, materials used for the site, and size of the building.

Appendix E

Vacuum Specifications

COMMERCIAL VACS



MODEL #	VACUUM	MOTORS	STAINLESS STEEL DOME	LIGHTED DOME	ETL APPROVED	WEIGHT	AMPS REQ.	VOLTAGE	DESCRIPTION
9225	•	2	Small		•	128	20	120	
9235	•	2	Large		•	135	20	120	
9235LD	•	2		•	•	130	20	120	
9235-3	•	3	Large		•	135	30	120	
9235-3LD	•	3		•	•	130	30	120	
9225-2*	•	2	Small		•	128	20	120	Wall Mounted
9225-3*	•	3	Large		•	135	30	120	Wall Mounted
9235-3DH	•	3	Large		•	133	30	120	Dual Hose
9235-3DH-WALL	•	3	Large		•	133	30	120	Dual Hose, Wall Mounted
9235-3DH-220V	•	3	Large			133	15 @ 50 Hz	220	Dual Hose
9225-220	•	2	Small			128	10 @ 50 Hz	220	
9235-220V	•	2	Large			135	10 @ 50 Hz	220	
9235-3-220V	•	3	Large			135	15 @ 50 Hz	220	

FEATURES

- JE Adams commercial vacuums are great for car dealerships, detail shops, car washes, oil change facilities, car rental agencies, or anywhere you want to provide your customers with a “Free” vacuum or to discontinue using and replacing shop vacs
- On/off toggle switch
- Hose: 2” x 15’, swivel cuff and nozzle included (15’, 25’, and 50’ available in 1 1/2” or 2”)
- *9225-2 and 9225-3 are wired to an electrical switch or a toggle switch away from the vacuum
- Double service doors offer easy access to clean out compartment and 4 filter bag system (Replacement Item #8076)
- Optional motors, colored hoses, extra security, and clean-out containers are available

OPTIONS

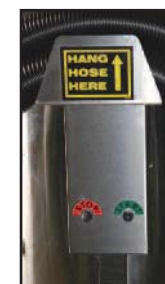
- 9225PBK** Push button kit with timer available
- 9225PBK-1** Push button kit with start and stop buttons with timer available
- 9225PBK-220V** Push button kit with 220V timer available



9235-3DH
DUAL HOSE
COMMERCIAL VAC



9225 COMMERCIAL VAC



9225PBK-1
STOP/START
BUTTONS



Sound Power and Narrow Band Report

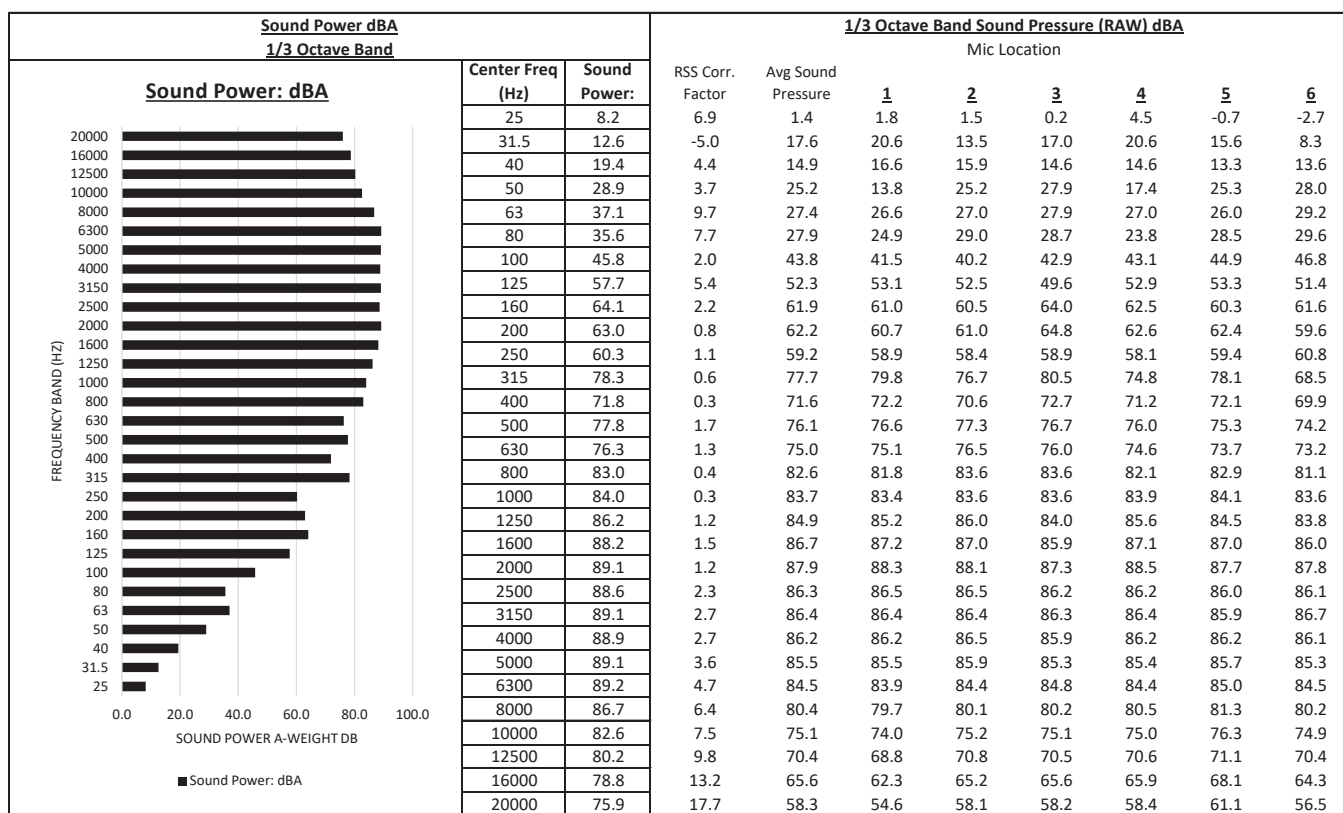
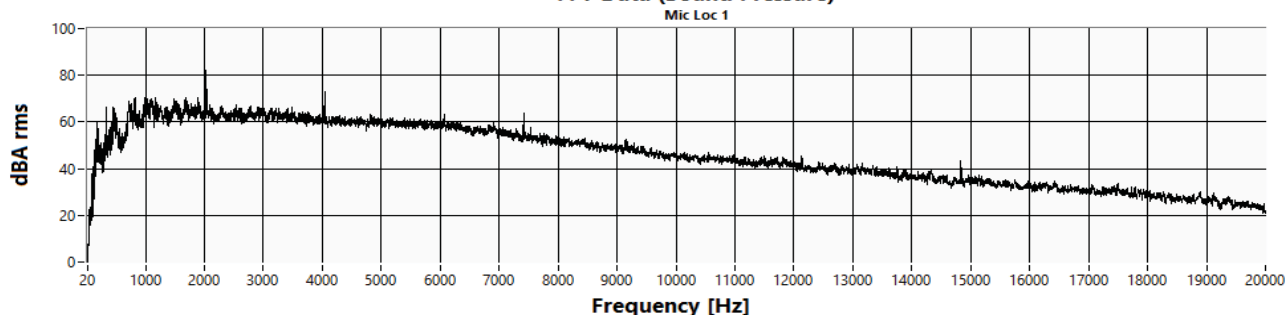
Test Condition:

Customer: JE Adams
Date: 5/10/2019
Mtr Model Q6600-092T (2 mtrs)
Unit: 9235-2

Volts 120
Frequency 60 Hz
By: Jonathan Johnson
Test Method: ASTM F1334

JE Adams Unit 9235
2 Motor Unit with Q6600-092T Motors.
Small Steel Dome
Inlet In Room Fully Blocked Nozzle

FFT Data (Sound Pressure)



Overall Sound Power dBA: 98.7

(Sound Power = Total Sound Pressure + Reference Sound Source (RSS) Correction Factor)



Sound Power and Narrow Band Report

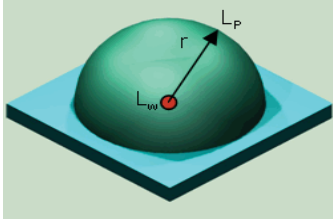
Customer: JE Adams
Date: 5/10/2019
Mtr Model Q6600-092T (2 mtrs)
Unit: 9235-2

Volts 120
Frequency 60 Hz
By: Jonathan Johnson
Test Method: ASTM F1334

Test Condition:

JE Adams Unit 9235
2 Motor Unit with Q6600-092T Motors.
Small Steel Dome
Inlet In Room Fully Blocked Nozzle

Sound Pressure At Distances From Unit (Sound Treated as Point Source)

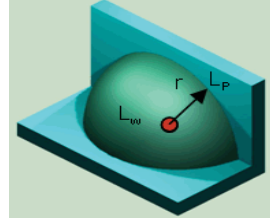


Half Sphere Q = 2

$$L_P = L_W + 10 \log \left(\frac{Q}{4\pi r^2} \right)$$

Lp = Sound Pressure dBA
Lw = Sound Power
Q = Directivity Factor
r = Distance from Source

Sound Power = 98.7



Quarter Sphere Q = 4

Distance		Sound Pressure (dBA)
Feet	Meters	
5	1.5	87.0
10	3.0	81.0
15	4.6	77.5
25	7.6	73.1
30	9.1	71.5
35	10.7	70.1
40	12.2	69.0
45	13.7	67.9
50	15.2	67.0
55	16.8	66.2
60	18.3	65.4
75	22.9	63.5
80	24.4	62.9
85	25.9	62.4
90	27.4	61.9
95	29.0	61.5
100	30.5	61.0

Distance		Sound Pressure (dBA)
Feet	Meters	
5	1.5	90.0
10	3.0	84.0
15	4.6	80.5
25	7.6	76.1
30	9.1	74.5
35	10.7	73.1
40	12.2	72.0
45	13.7	71.0
50	15.2	70.0
55	16.8	69.2
60	18.3	68.5
75	22.9	66.5
80	24.4	66.0
85	25.9	65.4
90	27.4	64.9
95	29.0	64.5
100	30.5	64.0

Appendix F

Speaker Box Specifications

3M™ Wireless Communication System Model XT-1

Technical Data

3M Wireless Communications System Model XT-1's Night Volume feature to comply with City Decibel Level output ordinance.

With the concern over environmental noise today, many communities restrict the audio level of drive-thru intercom systems during normal day-time business hours and for business operations during night time. Usually, this audio level is specified to be below some number at the property line.

Audio levels are measured in terms of "Sound Pressure Level" with the unit of change being the "Decibel". For example, the city of South Plainfield, NJ requires that sound levels not exceed 65 decibels SPL (sound pressure level) in an industrial area. Taking this into consideration, 3M intercom systems provide an adjustable menu speaker volume to assure compliance with city sound ordinances.

The 3M XT-1 Intercom System can be adjusted at installation to produce an audio sound pressure level of 65 decibels (*) at a distance of 4 feet on axis to the center of the speaker. It is VERY easy for the installation company to verify this reading using an Audio dB meter (set to A weighing, slow response). Please note that sound diminishes at the rate of 6 decibels every time the distance from the sound source is doubled. So, at a distance of 8 feet, the level is 59 decibels, at 16 feet it is 53 decibels and so on.

The 3M XT-1 Intercom System also provides an AUTOMATIC reduction of sound volume for night time operation to maintain compliance with cities that require lower operating sound levels after normal business hours. This feature assures compliance 24 hours a day.

To give you a reference of comparative audio levels, please peruse the attached list of typical sound levels. Be aware that acoustic barriers (shrubby, trees, fences, walls, etc) will reduce the distance faster than shown in the chart.

(* These level measurements assume the use of recommended 3M components.)



Building and Commercial Services Division

St. Paul, MN 55144-1000

1-800-328-0033

www.3M.com/XT1

3M is a trademark of 3M.

© 3M 2011. All rights reserved.
1209 DMR

Table of Sound Levels and Corresponding Sound Pressure and Sound Intensity

To get a feel for decibels, look at the table below which gives values for the sound pressure levels of common sounds in our environment. Also shown are the corresponding sound pressures and sound intensities.

From these, you can see that the decibel scale gives numbers in a much more manageable range.

Chart of sound levels L and corresponding sound pressure and sound intensity			
Examples	Sound Pressure Level dB SPL	Sound Pressure p N/m ² = Pa	Sound Intensity I watts/m ²
Jet aircraft, 50 m away	140	200	100
Threshold of pain	130	63.2	10
Threshold of discomfort	120	20	1
Chainsaw 1m distance	110	6.3	0.1
Disco, 1 m from speaker	100	2	0.01
Diesel truck, 10 m away	90	0.63	0.001
Curbside of busy road, 5 m	80	0.2	0.0001
Vacuum cleaner, distance 1 m	70	0.063	0.00001
Conversational speech, 1m	60	0.02	0.000001
Average home	50	0.0063	1E-07
Quiet library	40	0.002	1E-08
Quiet bedroom at night	30	0.00063	1E-09
Background in TV studio	20	0.0002	1E-10
Rustling leaf	10	0.000063	1E-11
Threshold of hearing	0	0.00002	1E-12



Building and Commercial Services Division

St. Paul, MN 55144-1000

1-800-328-0033

www.3M.com/XT1

3M is a trademark of 3M.

© 3M 2011. All rights reserved.
1209 DMR

A given sound pressure level L_p in dBSPL without the distance of the measurement to the specific sound source is useless.

The reference for 0 dBSPL sound pressure level is $p = 20 \mu\text{Pa} = 2 * 10^{-5}$ pascal, the threshold of hearing.

The sound pressure level decreases in the free field with 6dB per distance doubling.

That is the $1/r$ law.

Often it is argued the sound pressure would decrease after the $1/r^2$ law (inverse square law).

That is wrong.

The sound pressure in a free field is inversely proportional to the distance from the mic to the source.

$p \sim 1/r$

Distance From Menu Post	3M Intercom SPL (dB)
4'	65
8'	59
16'	53
32'	47
64'	41
128'	35
256'	29
512'	23
1024'	17
2048'	11
4096'	5

Note: 20 dB is approximately the threshold of hearing. This occurs at approximately 700 feet from the speaker post in a very QUIET environment. In an environment of average traffic noise, a 35 dB limit is virtually inaudible and should be considered the practical limit. This occurs at approximately 125 feet from the speaker post.



Building and Commercial Services Division

St. Paul, MN 55144-1000

1-800-328-0033

www.3M.com/XT1

3M is a trademark of 3M.

© 3M 2011. All rights reserved.

1209 DMR

Appendix G

HVAC Specifications

**38HDR
Performance™ Series Air Conditioner
with Puron® Refrigerant
1 – 1/2 to 5 Nominal Tons**



Turn to the Experts.™

Product Data



Performance
SERIES

Carrier's Air Conditioners with Puron® refrigerant provide a collection of features unmatched by any other family of equipment. The 38HDR has been designed utilizing Carrier's Puron refrigerant. The environmentally sound refrigerant allows you to make a responsible decision in the protection of the earth's ozone layer.

As an Energy Star® Partner, Carrier Corporation has determined that this product meets the Energy Star® guidelines for energy efficiency. Refer to the combination ratings in the Product Data for system combinations that meet Energy Star® guidelines.

NOTE: Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory (www.ahridirectory.org) for the most up-to-date ratings information.

INDUSTRY LEADING FEATURES / BENEFITS

Energy Efficiency

- 13 - 15 SEER/10.9 - 12.5 EER

Sound

- Levels as low as 68 dBA

Design Features

- New aesthetics
- Small footprint, same as old model and "stackable"
- WeatherArmor™ cabinet
 - All steel cabinet construction
 - Baked on powder paint
 - Mesh coil guard

Reliability, Quality and Toughness

- Scroll compressor
- Crankcase Heater standard on sizes 030-060
- Factory-supplied filter drier
- High pressure switch
- Low pressure switch
- Line lengths up to 250' (76.2 m)
- Low ambient operation (down to -20°F/-28.9°C) with low ambient accessories.

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13
N	N	A	A	A/N	N	N	N	A/N	A/N	A/N	N	N
3	8	H	D	R	0	1	8	A	0	0	3	0

Product Series	HDR = Horizontal Discharge Condensing Unit	Cooling Capacity	Variations	Open	Open	Voltage	Minor Series
38=AC/HP	Major Model	1,000 Btuh Nominal	A=Standard	0=Not Defined	0=Not Defined	3=208/230-1 5=208/230-3 6=460/3	0, 1, 2...



This product has been designed and manufactured to meet Energy Star® criteria for energy efficiency when matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should follow all manufacturing refrigerant charging and air flow instructions. **Failure to confirm proper charge and air flow may reduce energy efficiency and shorten equipment life.**

PHYSICAL DATA

UNIT 38HDR	018	024	030	036	048	060
NOMINAL CAPACITY (Tons)	1.5	2.0	2.50	3.0	4.0	5.0
OPERATING WEIGHT lb (kg)	155 (70.3)	180 (81.6)	200 (90.7)	218 (98.9)	284 (128.8)	294 (133.4)
REFRIGERANT TYPE	R-410A					
METERING DEVICE	TXV					
CHARGE lb (kg)	6.3 (2.86)	6.0 (2.73)	8.7 (3.95)	8.7 (3.95)	11.5 (5.23)	12.0 (5.45)
COMPRESSOR	Scroll					
Type	Scroll					
Oil Charge (POE – oz)	25.0	25.0	25.0	25.0	42.0	42.0
Crankcase Heater (watts)	—	—	40	40	40	40
OUTDOOR FAN						
Rpm/Cfm	840/1720	840/1720	850/3900	850/3900	850/3900	850/3900
Diameter in. (mm)	18 (457)	18 (457)	24 (610)	24 (610)	24 (610)	24 (610)
No. Blades	3	3	3	3	3	3
Motor hp (w)	1/8 (93)	1/8 (93)	1/4 (187)	1/4 (187)	1/4 (187)	1/4 (187)
OUTDOOR COIL						
Face Area (sq ft)	5.8	7.3	12.1	12.1	14.1	14.1
No. Rows	2	2	2	2	2	2
FPI	20	20	20	20	20	20
HIGH PRESSURE SWITCH						
Cut-In (psig) Cutout (psig)	420 ± 25 650 ± 10	420 ± 25 650 ± 10	420 ± 25 650 ± 10	420 ± 25 650 ± 10	420 ± 25 650 ± 10	420 ± 25 650 ± 10
LOW PRESSURE SWITCH						
Cut-In (psig) Cutout (psig)	45 ± 25 20 ± 5	45 ± 25 20 ± 5	45 ± 25 20 ± 5	45 ± 25 20 ± 5	45 ± 25 20 ± 5	45 ± 25 20 ± 5
REFRIGERANT LINES						
Connection Type	Sweat					
Max. Liquid Line* (in.) OD	3/8	3/8	3/8	3/8	3/8	3/8
Rated Vapor Line† (in.) OD	5/8	5/8	3/4	3/4	7/8	1 – 1/8**
CONTROLS						
Control Voltage‡	24 vac					
System Voltage	208/230 v	208/230 v	208/230 v	208/230 v, Single and 3 Phase, 460 v, 3 Phase		
FINISH	Gray					

* See *Liquid Line Sizing For Cooling Only Systems with Puron Refrigerant* tables.

† Units are rated with 25 ft (7.6 m) of lineset length. See *Vapor Line Sizing and Cooling Capacity Loss* table when using other sizes and lengths of lineset.

‡ 24 v and a minimum of 40 va is provided in the fan coil unit.

** Vapor connection size is 7/8 inch.

FPI – Fins Per Inch

POE – Polyol Ester

REFRIGERANT PIPING LENGTH LIMITATIONS

Liquid Line Sizing and Maximum Total Equivalent Lengths† for Cooling Only Systems with Puron® Refrigerant:

The maximum allowable length of a residential split system depends on the liquid line diameter and vertical separation between indoor and outdoor units.

See Table below for liquid line sizing and maximum lengths :

Maximum Total Equivalent Length Outdoor Unit BELOW Indoor Unit

Size	Liquid Line Connection	Liquid Line Diam. w/ TXV	AC with Puron Refrigerant Maximum Total Equivalent Length†: Outdoor unit BELOW Indoor Vertical Separation ft (m)								
			0-5 (0-1.5)	6-10 (1.8-3.0)	11-20 (3.4-6.1)	21-30 (6.4-9.1)	31-40 (9.4-12.2)	41-50 (12.5-15.2)	51-60 (15.5-18.3)	61-70 (18.6-21.3)	71-80 (21.6-24.4)
018 AC with Puron	3/8	1/4	150	150	125	100	100	75	--	--	--
		5/16	250*	250*	250*	250*	250*	250*	250*	225*	150
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
024 AC with Puron	3/8	1/4	75	75	75	50	50	--	--	--	--
		5/16	250*	250*	250*	250*	250*	225*	175	125	100
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
030 AC with Puron	3/8	1/4	30	--	--	--	--	--	--	--	--
		5/16	175	225*	200	175	125	100	75	--	--
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
036 AC with Puron	3/8	5/16	175	150	150	100	100	100	75	--	--
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
048 AC with Puron	3/8	3/8	250*	250*	250*	250*	250*	250*	230	160	--
060 AC with Puron	3/8	3/8	250*	250*	250*	225*	190	150	110	--	--

* Maximum actual length not to exceed 200 ft (61 m)

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

-- = outside acceptable range

Maximum Total Equivalent Length Outdoor Unit ABOVE Indoor Unit

Size	Liquid Line Connection	Liquid Line Diam. w/ TXV	AC with Puron Refrigerant Maximum Total Equivalent Length†: Outdoor unit ABOVE Indoor Vertical Separation ft (m)							
			25 (7.6)	26-50 (7.9-15.2)	51-75 (15.5-22.9)	76-100 (23.2-30.5)	101-125 (30.8-38.1)	126-150 (38.4-45.7)	151-175 (46.0-53.3)	176-200 (53.6-61.0)
018 AC with Puron	3/8	1/4	175	250*	250*	250*	250*	250*	250*	250*
		5/16	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
024 AC with Puron	3/8	1/4	100	125	175	200	225*	250*	250*	250*
		5/16	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
030 AC with Puron	3/8	1/4	30	--	--	--	--	--	--	--
		5/16	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
036 AC with Puron	3/8	5/16	225*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*
048 AC with Puron	3/8	3/8	250*	250*	250*	250*	250*	250*	250*	250*
060 AC with Puron	3/8	3/8	250*	250*	250*	250*	250*	250*	250*	250*

* Maximum actual length not to exceed 200 ft (61 m)

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

-- = outside acceptable range

38HDR

REFRIGERANT CHARGE ADJUSTMENTS

Liquid Line Size	Puron Charge oz/ft (g/m)
3/8	0.60 (17.74) (Factory charge for lineset = 9 oz / 266.16 g)
5/16	0.40 (11.83)
1/4	0.27 (7.98)

Units are factory charged for 15 ft (4.6 m) of 3/8" liquid line. The factory charge for 3/8" lineset 9 oz (266.16 g). When using other length or diameter liquid lines, charge adjustments are required per the chart above.

Charging Formula:

[(Lineset oz/ft x total length) – (factory charge for lineset)] = charge adjustment

Example 1: System has 15 ft of line set using existing 1/4" liquid line. What charge adjustment is required?

Formula: (.27 oz/ft x 15ft) – (9 oz) = (-4.95) oz.

Net result is to remove 4.95 oz of refrigerant from the system

Example 2: System has 45 ft of existing 5/16" liquid line. What is the charge adjustment?

Formula: (.40 oz/ft. x 45ft) – (9 oz.) = 9 oz.

Net result is to add 9 oz of refrigerant to the system

LONG LINE APPLICATIONS

An application is considered Long Line, when the refrigerant level in the system requires the use of accessories to maintain acceptable refrigerant management for systems reliability. See Accessory Usage Guideline table for required accessories. Defining a system as long line depends on the liquid line diameter, actual length of the tubing, and vertical separation between the indoor and outdoor units.

For Air Conditioner systems, the chart below shows when an application is considered Long Line.

AC WITH PURON® REFRIGERANT LONG LINE DESCRIPTION ft (m)

Beyond these lengths, long line accessories are required

Liquid Line Size	Units On Same Level	Outdoor Below Indoor	Outdoor Above Indoor
1/4	No accessories needed within allowed lengths	No accessories needed within allowed lengths	175 (53.3)
5/16	120 (36.6)	50 (15.2) vertical or 120 (36.6) total	120 (36.6)
3/8	80 (24.4)	35 (10.7) vertical or 80 (24.4) total	80 (24.4)

Note: See Long Line Guideline for details

VAPOR LINE SIZING AND COOLING CAPACITY LOSS

Acceptable vapor line diameters provide adequate oil return to the compressor while avoiding excessive capacity loss. The suction line diameters shown in the chart below are acceptable for AC systems with Puron refrigerant:

Vapor Line Sizing and Cooling Capacity Losses — Puron® Refrigerant 1-Stage Air Conditioner Applications

Unit Nominal Size (Btuh)	Maximum Liquid Line Diameters (In. OD)	Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%)								
			Total Equivalent Line Length ft. (m)								
			26–50 (7.9–15.2)	51–80 (15.5–24.4)	81–100 (24.7–30.5)	101–125 (30.8–38.1)	126–150 (38.4–45.7)	151–175 (46.0–53.3)	176–200 (53.6–61.0)	201–225 (61.3–68.6)	226–250 (68.9–76.2)
018 1 Stage AC with Puron	3/8	1/2	1	2	3	5	6	7	8	9	11
		5/8	0	1	1	1	2	2	2	3	3
		3/4	0	0	0	0	1	1	1	1	1
024 1 Stage AC with Puron	3/8	5/8	0	1	2	2	3	3	4	5	5
		3/4	0	0	1	1	1	1	1	2	2
		7/8	0	0	0	0	0	1	1	1	1
030 1 Stage AC with Puron	3/8	5/8	1	2	3	3	4	5	6	7	8
		3/4	0	0	1	1	1	2	2	2	3
		7/8	0	0	0	0	1	1	1	1	1
036 1 Stage AC with Puron	3/8	5/8	1	2	4	5	6	8	9	10	12
		3/4	0	1	1	2	2	3	3	4	4
		7/8	0	0	0	1	1	1	1	2	2
048 1 Stage AC with Puron	3/8	3/4	0	1	2	3	4	5	5	6	7
		7/8	0	0	1	1	2	2	2	3	3
		1 1/8	0	0	0	0	0	0	0	1	1
060 1 Stage AC with Puron	3/8	3/4	1	2	4	5	6	7	9	10	11
		7/8	0	1	2	2	3	4	4	5	5
		1 1/8	0	0	0	1	1	1	1	1	1

Applications in this area may be long line and may have height restrictions. See the *Residential Piping and Long Line Guideline*.

ACCESSORY THERMOSTATS

THERMOSTAT / SUBBASE PKG.	DESCRIPTION
TP-PRH01-A	Programmable Thermostat
TP-NRH01-A	Non-programmable Thermostat
TP-PAC01	Performance Series Programmable AC Stat
TP-NAC01	Performance Series Non-programmable AC Stat
TSTATCCSEN01-B	Outdoor Air Temperature Sensor
TSTATXXBBP01	Backplate for Builder's Thermostat
TSTATXXNBP01	Backplate for Non-Programmable Thermostat
TSTATXXBP01	Backplate for Programmable Thermostat
TSTATXXCNV10	Thermostat Conversion Kit (4 to 5 wires) – 10 Pack

ACCESSORIES

KIT NUMBER	KIT NAME	018	024	030	036	048	060
KAACH1401AAA	Crankcase Heater	X	X				
Standard	Crankcase Heater			S	S	S	S
KAAFT0101AAA	Evaporator Freeze Stat	X	X	X	X	X	X
KAATD0101TDR	Time Delay Relay	X	X	X	X	X	X
KAAWS0101AAA	Winter Start Kit (for low ambient)	X	X	X	X	X	X
53DS-900---086	Low Ambient Control (Puron)	X	X	X	X	X	X
53DS-900---070	Wind Baffle	X					
53DS-900---087	Wind Baffle		X				
53DS-900---071	Wind Baffle			X	X		
53DS-900---088	Wind Baffle					X	X
53DS-900---075	Stacking Kit	X	X				
53DS-900---076	Stacking Kit			X	X	X	X
53DS-900---077	Wall Mounting Kit	X	X				
53DS-900---078	Wall Mounting Kit			X	X	X	X

X = Accessory, S = Standard

ACCESSORY USAGE GUIDELINE

ACCESSORY	REQUIRED FOR LOW-AMBIENT COOLING APPLICATIONS (Below 55°F/12.8°C)	REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 ft. / 24.4 m)	REQUIRED FOR SEA COAST APPLICATIONS (Within 2 miles / 3.2 km)
Compressor Start Assist Capacitor and Relay	Yes	Yes	No
Crankcase Heater	Yes	Yes	No
Evaporator Freeze Thermostat	Yes	No	No
Hard Shutoff TXV	Yes	Yes	Yes
Liquid Line Solenoid Valve	No	See Longline Application Guideline	No
Low-ambient Control	Yes	No	No
Winter Start Control	Yes	No	No

* For tubing line sets between 80 and 200 ft. (24.38 and 60.96 m) and/or 35 ft. (10.7 m) vertical differential, refer to Residential Piping and Longline Guideline.

Accessory Description and Usage (Listed Alphabetically)

1. Crankcase Heater

An electric resistance heater which mounts to the base of the compressor to keep the lubricant warm during off cycles. Improves compressor lubrication on restart and minimizes the chance of liquid slugging.

Usage Guideline:

Required in low ambient cooling applications.

Required in long line applications.

Suggested in all commercial applications.

2. Evaporator Freeze Thermostat

An SPST temperature-actuated switch that stops unit operation when evaporator reaches freeze-up conditions.

Usage Guideline:

Required when low ambient kit has been added.

3. Low-Ambient Control

A fan-speed control device activated by a temperature sensor, designed to control condenser fan motor speed in response to the saturated, condensing temperature during operation in cooling mode only. For outdoor temperatures down to -20°F (-28.9°C), it maintains condensing temperature at 100°F ±10°F (37.8°C ± 5.5°C).

Usage Guideline:

A Low Ambient Controller must be used when cooling operation is used at outdoor temperatures below 55°F (12.8°C).

Suggested for all commercial applications.

4. Outdoor Air Temperature Sensor

Designed for use with Carrier Thermostats listed in this publication. This device enables the thermostat to display the outdoor temperature. This device also

is required to enable special thermostat features such as auxiliary heat lock out.

Usage Guideline:

Suggested for all Carrier thermostats listed in this publication.

5. Thermostatic Expansion Valve (TXV)

A modulating flow-control valve which meters refrigerant liquid flow rate into the evaporator in response to the superheat of the refrigerant gas leaving the evaporator.

Kit includes valve, adapter tubes, and external equalizer tube. Hard shut off types are available.

NOTE: When using a hard shut off TXV with single phase reciprocating compressors, a Compressor Start Assist Capacitor and Relay is required.

Usage Guideline:

Accessory required to meet ARI rating and system reliability, where indoor not equipped.

Hard shut off TXV or LLS required in air conditioner long line applications.

Required for use on all zoning systems.

6. Time-Delay Relay

An SPST delay relay which briefly continues operation of indoor blower motor to provide additional cooling after the compressor cycles off.

NOTE: Most indoor unit controls include this feature. For those that do not, use the guideline below.

Usage Guideline:

Accessory required to meet ARI rating, where indoor not equipped.

7. Winter Start Control

This control is designed to alleviate nuisance opening of the low-pressure switch by bypassing it for the first 3 minutes of operation.

ELECTRICAL DATA

38HDR UNIT SIZE	V-PH-Hz	VOLTAGE RANGE*		COMPRESSOR		OUTDOOR FAN MOTOR			MIN CKT AMPS	FUSE/CKT BKR AMPS
		Min	Max	RLA	LRA	FLA	NEC Hp	kW Out		
018-31	208/230-1-60	187	253	9.0	48.0	0.8	0.125	0.09	12.1	20
024-32	208/230-1-60	187	253	13.5	58.3	0.8	0.125	0.09	17.7	25
030-31	208/230-1-60	187	253	14.1	73.0	1.5	0.250	0.19	19.1	30
036-31	208/230-1-60	187	253	14.1	77.0	1.5	0.250	0.19	19.1	30
	208/230-3-60	187	253	9.2	71.0	1.5	0.250	0.19	13.0	20
	460-3-60	414	506	5.6	38.0	0.8	0.250	0.19	7.9	10
048-32	208/230-1-60	187	253	19.9	109.0	1.5	0.250	0.19	26.4	40
	208/230-3-60	187	253	13.1	83.1	1.5	0.250	0.19	17.9	25
	460-3-60	414	506	6.1	41.0	0.8	0.250	0.19	8.4	15
060-32	208/230-1-60	187	253	26.4	134.0	1.5	0.250	0.19	34.5	60
	208/230-3-60	187	253	16.0	110.0	1.5	0.250	0.19	21.5	30
	460-3-60	414	506	7.8	52.0	0.8	0.250	0.19	10.6	15

* Permissible limits of the voltage range at which the unit will operate satisfactorily

FLA – Full Load Amps

HACR – Heating, Air Conditioning, Refrigeration

LRA – Locked Rotor Amps

NEC – National Electrical Code

RLA – Rated Load Amps (compressor)

NOTE: Control circuit is 24-V on all units and requires external power source. Copper wire must be used from service disconnect to unit.

All motors/compressors contain internal overload protection.

Complies with 2007 requirements of ASHRAE Standards 90.1

38HDR

A-WEIGHTED SOUND POWER (dBA)

Unit Size	Standard Rating (dBA)	Typical Octave Band Spectrum (dBA) (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
018-31	68	52.0	57.5	60.5	63.5	60.5	57.5	46.5
024-32	69	57.5	61.5	63.0	61.0	60.0	56.0	45.0
030-31	72	56.5	63.0	65.0	66.0	64.0	62.5	57.0
036-31	72	65.0	61.5	63.5	65.0	64.5	61.0	54.5
048-32	72	58.5	61.0	64.0	67.5	66.0	64.0	57.0
060-32	72	63.0	61.5	64.0	66.5	66.0	64.5	55.5

NOTE: Tested in accordance with ARI Standard 270-08 (not listed in AHRI).

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE-VOLTAGE, SERIES	REQUIRED SUBCOOLING °F (°C)
018-31	12 (6.7)
024-32	12 (6.7)
030-31	12 (6.7)
036-31	12 (6.7)
048-32	12 (6.7)
060-32	12 (6.7)

DIMENSIONS - ENGLISH

38HDR

UNIT	SERIES	ELECTRICAL CHARACTERISTICS			A	B	C	D	E	F	G	H	J	K	L	M	N	P	OPERATING WEIGHT(lbs)	SHIPPING WEIGHT(lbs)	SHIPPING DIMENSIONS (L x W x H)		
38HDR018	1	X	0	0	25 1/8"	36 15/16"	14 9/16"	16"	23 7/16"	17 3/16"	17 1/8"	22"	13"	6 5/8"	11 1/4"	5/8"	2 15/16"	6"	155	171	42 9/10"	18"	28 1/10"
38HDR024	1,2	X	0	0	31 1/8"	36 15/16"	14 9/16"	16"	23 7/16"	17 3/16"	23 1/8"	28"	14"	6 3/4"	11 5/8"	5/8"	2 15/16"	6"	180	198	42 9/10"	18"	34 1/10"
38HDR030	1	X	0	0	37 3/16"	44 9/16"	17 1/16"	18 7/16"	30 1/2"	19 5/8"	29 3/16"	34 1/16"	13 11/16"	8 1/8"	15 7/8"	3/4"	3 7/16"	6 1/2"	200	223	50 1/2"	20 1/2"	40 2/10"
38HDR036	1	X	0	X	37 3/16"	44 9/16"	17 1/16"	18 7/16"	30 1/2"	19 5/8"	29 3/16"	34 1/16"	13 11/16"	8 1/8"	15 7/8"	3/4"	3 7/16"	6 1/2"	218	240	50 1/2"	20 1/2"	40 2/10"
38HDR048	1,2	X	0	X	43 3/16"	44 9/16"	17 1/16"	18 7/16"	30 1/2"	19 5/8"	35 3/16"	40 1/16"	14 1/2"	8 1/2"	18 7/8"	7/8"	3 7/16"	6 1/2"	284	309	50 1/2"	20 1/2"	46 2/10"
38HDR060	1,2	X	0	X	43 3/16"	44 9/16"	17 1/16"	18 7/16"	30 1/2"	19 5/8"	35 3/16"	40 1/16"	14 1/2"	8 1/2"	18 7/8"	7/8"	3 7/16"	6 1/2"	294	319	50 1/2"	20 1/2"	46 2/10"

X = YES
0 = NO

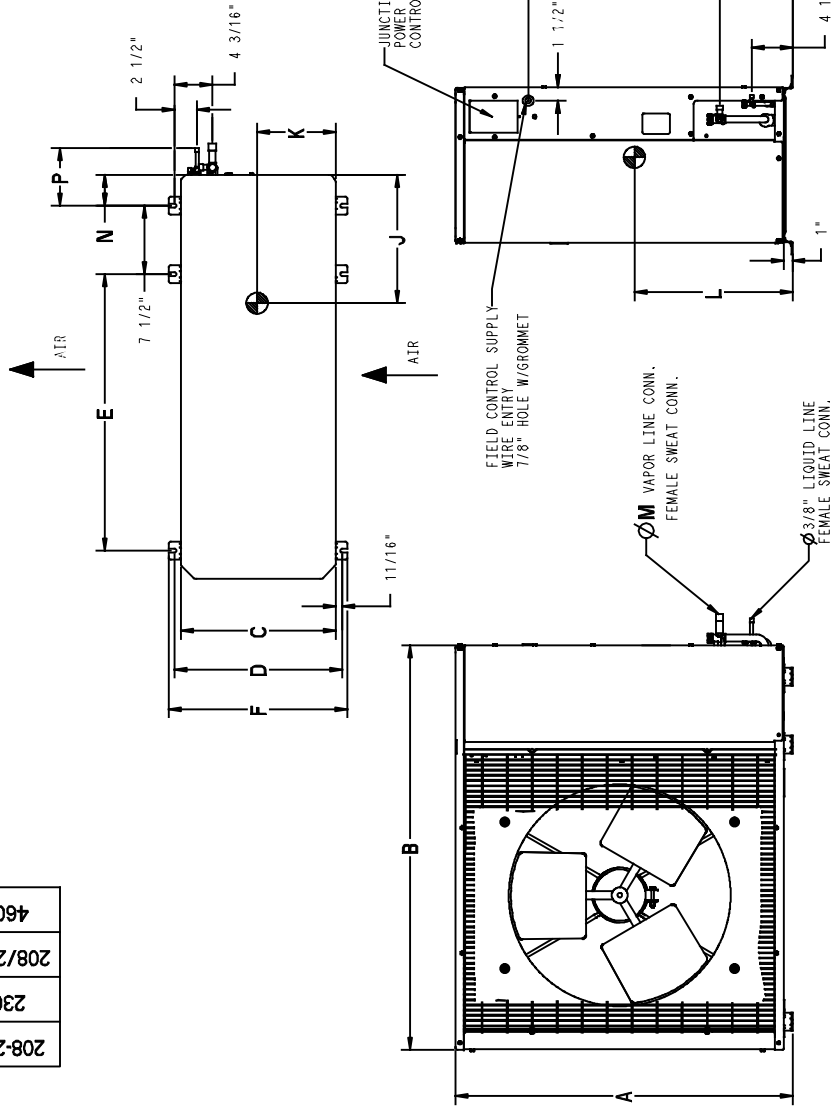
- REQUIRED CLEARANCES: WITH COIL FACING WALL: ALLOW 6" MIN CLEARANCE ON COIL SIDE AND COIL END AND 36" MIN CLEARANCE ON COMPRESSOR END AND FAN SIDE. WITH FAN FACING WALL: ALLOW 8" MIN CLEARANCE ON FAN SIDE AND COIL END AND 36" MIN CLEARANCE ON COMPRESSOR END AND COIL SIDE. WITH MULTI UNIT APPLICATION: ARRANGE UNITS SO DISCHARGE OF ONE DOES NOT ENTER INLET OF ANOTHER.

- MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING MODE IS 55°F, MAX. 125°F.

- SERIES DESIGNATION IS THE 13TH POSITION OF THE UNIT MODEL NUMBER.

- CENTER OF GRAVITY

- ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.



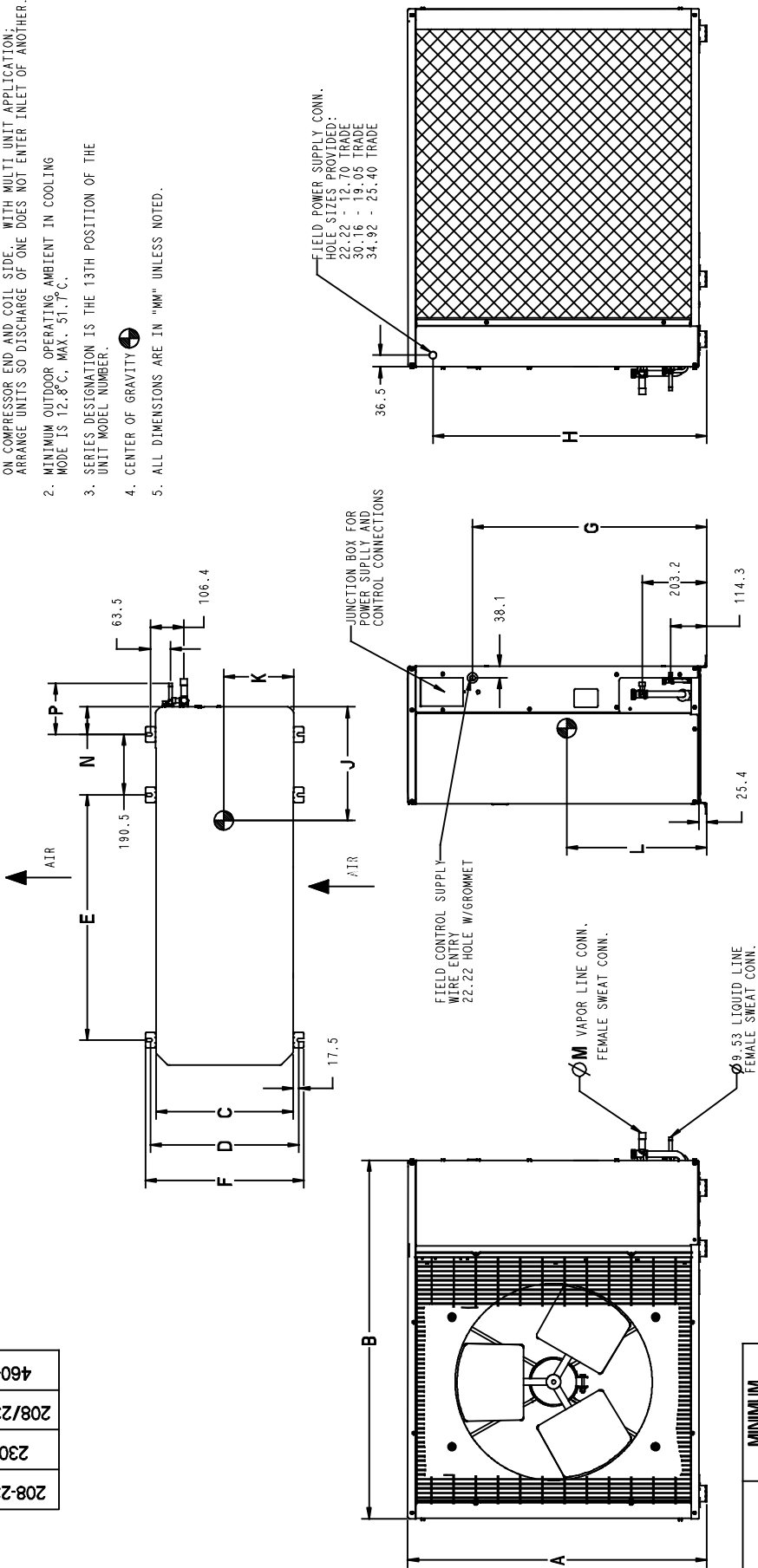
UNIT SIZE	MINIMUM MOUNTING PAD DIMENSIONS
18, 24	23" X 42"
30, 36, 48, 60	24" X 50"

DIMENSIONS - SI

UNIT	SERIES	ELECTRICAL CHARACTERISTICS		A	B	C	D	E	F	G	H	J	K	L	M	N	P	OPERATING WEIGHT(KG)	SHIPPING WEIGHT(KG)	SHIPPING DIMENSIONS (L x W x H)	
38HRR018	1	X	0	0	638.2	938.2	369.9	406.4	595.3	436.6	435.0	330.2	168.3	285.8	15.9	74.6	152.4	70.4	77.7	1090.2 X 457.7 X 714.3	
38HRR024	1,2	X	0	0	790.6	938.2	369.9	406.4	595.3	436.6	587.4	355.6	171.5	295.3	15.9	74.6	152.4	81.8	90.0	1090.2 X 457.7 X 866.7	
38HRR030	1	X	0	0	944.6	1131.9	433.4	468.3	774.7	498.5	741.4	347.7	206.4	403.2	19.0	87.3	165.1	90.9	101.4	1282.7 X 520.7 X 1020.7	
38HRR036	1	X	0	X	944.6	1131.9	433.4	468.3	774.7	498.5	741.4	347.7	206.4	403.2	19.0	87.3	165.1	90.9	101.4	1282.7 X 520.7 X 1020.7	
38HRR048	1,2	X	0	X	1097.0	1131.9	433.4	468.3	774.7	498.5	893.8	368.3	215.9	419.4	22.2	87.3	165.1	129.0	140.4	1282.7 X 520.7 X 1173.1	
38HRR060	1,2	X	0	X	1097.0	1131.9	433.4	468.3	774.7	498.5	893.8	368.3	215.9	419.4	22.2	87.3	165.1	133.6	145.0	1282.7 X 520.7 X 1173.1	

X = YES
0 = NO

- REQUIRED CLEARANCES: WITH COIL FACING WALL; ALLOW 152.4 MIN CLEARANCE ON COIL SIDE AND COIL END AND 914.4 MIN CLEARANCE ON COMPRESSOR END AND FAN SIDE. WITH FAN FACING WALL; ALLOW 203.2 MIN CLEARANCE ON FAN SIDE AND COIL END AND 914.4 MIN CLEARANCE ON COMPRESSOR END AND COIL SIDE. WITH MULTI UNIT APPLICATION; ARRANGE UNITS SO DISCHARGE OF ONE DOES NOT ENTER INLET OF ANOTHER.
- MINIMUM OUTDOOR OPERATING AMBIENT IN COOLING MODE IS 12.8 °C, MAX. 51.7 °C.
- SERIES DESIGNATION IS THE 13TH POSITION OF THE UNIT MODEL NUMBER.
- CENTER OF GRAVITY
- ALL DIMENSIONS ARE IN "MM" UNLESS NOTED.



UNIT SIZE	MINIMUM MOUNTING PAD DIMENSIONS
18.24	584.2 X 1066.8
30.36, 48.60	609.6 X 1270.0

COMBINATION RATINGS

38HDR

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
1085392	38HDR018-31	†CNPV*1814A**+TDR		17,000	11.0	13.0
1117974	38HDR018-31	40QAC024--3		18,000	11.5	13.0
1085396	38HDR018-31	CAP**1814A**	58CV(A,X)070-12	17,000	11.5	14.0
3015375	38HDR018-31	CAP**1814A**	58PH*045-08	17,000	11.5	14.0
1085394	38HDR018-31	CAP**1814A**+TDR		17,000	10.9	13.0
1085400	38HDR018-31	CAP**2414A**	58CV(A,X)070-12	17,400	11.5	14.0
3015376	38HDR018-31	CAP**2414A**	58PH*045-08	17,400	12.0	14.5
1085398	38HDR018-31	CAP**2414A**+TDR		17,400	11.0	13.0
1085456	38HDR018-31	CAP**2417A**	58CV(A,X)070-12	17,400	11.5	14.0
1085406	38HDR018-31	CAP**2417A**	58CV(A,X)090-16	17,400	11.5	14.0
3112072	38HDR018-31	CAP**2417A**	58MEB040-12	17,400	12.0	14.5
3112073	38HDR018-31	CAP**2417A**	58MEB060-12	17,400	12.0	14.5
1390388	38HDR018-31	CAP**2417A**	58MV(B,C)060-14	17,400	11.5	14.0
1085402	38HDR018-31	CAP**2417A**+TDR		17,400	11.0	13.0
1085432	38HDR018-31	CNPF*2418A**+TDR		17,400	11.0	13.0
1085428	38HDR018-31	CNPH*2417A**	58CV(A,X)070-12	17,400	11.5	14.0
1085430	38HDR018-31	CNPH*2417A**	58CV(A,X)090-16	17,400	11.5	14.0
3112076	38HDR018-31	CNPH*2417A**	58MEB040-12	17,400	12.0	14.5
3112077	38HDR018-31	CNPH*2417A**	58MEB060-12	17,400	12.0	14.5
1390392	38HDR018-31	CNPH*2417A**	58MV(B,C)060-14	17,400	11.5	14.0
1390396	38HDR018-31	CNPH*2417A**	58MV(B,C)080-14	17,400	11.5	14.0
3015379	38HDR018-31	CNPH*2417A**	58PH*045-08	17,400	12.0	14.5
1085420	38HDR018-31	CNPH*2417A**+TDR		17,400	11.0	13.0
1085408	38HDR018-31	CNPV*1814A**	58CV(A,X)070-12	17,000	11.5	14.0
3015377	38HDR018-31	CNPV*1814A**	58PH*045-08	17,000	11.5	14.0
1085412	38HDR018-31	CNPV*2414A**	58CV(A,X)070-12	17,400	11.5	14.0
3015378	38HDR018-31	CNPV*2414A**	58PH*045-08	17,400	12.0	14.5
1085410	38HDR018-31	CNPV*2414A**+TDR		17,400	11.0	13.0
1085458	38HDR018-31	CNPV*2417A**	58CV(A,X)070-12	17,400	11.5	14.0
1085418	38HDR018-31	CNPV*2417A**	58CV(A,X)090-16	17,400	11.5	14.0
3112074	38HDR018-31	CNPV*2417A**	58MEB040-12	17,400	12.0	14.5
3112075	38HDR018-31	CNPV*2417A**	58MEB060-12	17,400	12.0	14.5
1390390	38HDR018-31	CNPV*2417A**	58MV(B,C)060-14	17,400	11.5	14.0
1085414	38HDR018-31	CNPV*2417A**+TDR		17,400	11.0	13.0
1085442	38HDR018-31	CSPH*2412A**	58CV(A,X)070-12	17,400	11.5	14.0
1085444	38HDR018-31	CSPH*2412A**	58CV(A,X)090-16	17,400	11.5	14.0
3112078	38HDR018-31	CSPH*2412A**	58MEB040-12	17,400	12.0	14.5
3112079	38HDR018-31	CSPH*2412A**	58MEB060-12	17,400	12.0	14.5
1390394	38HDR018-31	CSPH*2412A**	58MV(B,C)060-14	17,400	11.5	14.0
1390398	38HDR018-31	CSPH*2412A**	58MV(B,C)080-14	17,400	11.5	14.0
3015380	38HDR018-31	CSPH*2412A**	58PH*045-08	17,400	12.0	14.5
1085434	38HDR018-31	CSPH*2412A**+TDR		17,400	11.0	13.0
1086232	38HDR018-31	FE4ANF002+UI		17,400	11.5	14.0
1085450	38HDR018-31	FF1ENP018		17,400	11.0	13.0
1085452	38HDR018-31	FF1ENP024		17,400	11.0	13.0
1085454	38HDR018-31	FV4BNF002		17,400	11.5	14.0
3404623	38HDR018-31	FV4CNF002		17,400	11.5	14.0
1085446	38HDR018-31	FX4CNF018		17,000	11.5	14.0
1085448	38HDR018-31	FX4CNF024		17,400	11.5	14.0
3465486	38HDR024-32	†CNPV*2414A**+TDR		23,400	11.0	13.0
3465806	38HDR024-32	40QAC024-3		22,800	11.5	13.0
3465488	38HDR024-32	CAP**2414A**	58CV(A,X)070-12	23,400	11.5	14.0
3465489	38HDR024-32	CAP**2414A**	58PH*045-08	23,400	11.5	14.0
3465487	38HDR024-32	CAP**2414A**+TDR		23,400	11.0	13.0
3465492	38HDR024-32	CAP**2417A**	58CV(A,X)090-16	23,400	11.5	14.0
3465493	38HDR024-32	CAP**2417A**	58MEB040-12	23,400	12.0	14.5
3465494	38HDR024-32	CAP**2417A**	58MEB060-12	23,400	12.0	14.5
3465495	38HDR024-32	CAP**2417A**	58MEB080-12	23,400	12.0	14.5
3465491	38HDR024-32	CAP**2417A**	58MV(B,C)060-14	23,400	11.5	14.0
3465490	38HDR024-32	CAP**2417A**+TDR		23,400	11.0	13.0
3465497	38HDR024-32	CAP**3014A**	58CV(A,X)070-12	23,400	11.5	14.0
3465498	38HDR024-32	CAP**3014A**	58PH*045-08	23,600	12.0	14.5
3465496	38HDR024-32	CAP**3014A**+TDR		23,600	11.0	13.0
3465501	38HDR024-32	CAP**3017A**	58CV(A,X)090-16	23,600	11.5	14.0
3465502	38HDR024-32	CAP**3017A**	58MEB040-12	23,600	12.0	14.5
3465503	38HDR024-32	CAP**3017A**	58MEB060-12	23,600	12.0	14.5
3465504	38HDR024-32	CAP**3017A**	58MEB080-12	23,600	12.0	14.5
3465500	38HDR024-32	CAP**3017A**	58MV(B,C)060-14	23,600	11.5	14.0
3465499	38HDR024-32	CAP**3017A**+TDR		23,600	11.0	13.0
3465554	38HDR024-32	CNPF*2418A**+TDR		23,400	11.0	13.0
3465529	38HDR024-32	CNPH*2417A**	58CV(A,X)070-12	23,400	11.5	14.0
3465530	38HDR024-32	CNPH*2417A**	58CV(A,X)090-16	23,400	11.5	14.0
3465531	38HDR024-32	CNPH*2417A**	58CV(A,X)110-20	23,400	11.5	14.0
3465532	38HDR024-32	CNPH*2417A**	58CV(A,X)135-22	23,400	11.5	14.0
3465533	38HDR024-32	CNPH*2417A**	58CV(A,X)155-22	23,400	11.5	14.0
3465535	38HDR024-32	CNPH*2417A**	58MEB040-12	23,400	12.0	14.5
3465536	38HDR024-32	CNPH*2417A**	58MEB060-12	23,400	12.0	14.5
3465537	38HDR024-32	CNPH*2417A**	58MEB080-12	23,400	12.0	14.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465524	38HDR024-32	CNPH*2417A**	58MV(B,C)060-14	23,400	11.5	14.0
3465525	38HDR024-32	CNPH*2417A**	58MV(B,C)080-14	23,400	11.5	14.0
3465526	38HDR024-32	CNPH*2417A**	58MV(B,C)080-20	23,200	11.5	14.0
3465527	38HDR024-32	CNPH*2417A**	58MV(B,C)100-20	23,400	11.5	14.0
3465528	38HDR024-32	CNPH*2417A**	58MV(B,C)120-20	23,400	11.5	14.0
3465523	38HDR024-32	CNPH*2417A**	58MVB040-14	23,400	11.5	14.0
3465534	38HDR024-32	CNPH*2417A**	58PH*045-08	23,400	11.5	14.0
3465522	38HDR024-32	CNPH*2417A**+TDR		23,400	11.0	13.0
3465545	38HDR024-32	CNPH*3017A**	58CV(A,X)070-12	23,400	11.5	14.0
3465546	38HDR024-32	CNPH*3017A**	58CV(A,X)090-16	23,600	11.5	14.0
3465547	38HDR024-32	CNPH*3017A**	58CV(A,X)110-20	23,600	11.5	14.0
3465548	38HDR024-32	CNPH*3017A**	58CV(A,X)135-22	23,600	11.5	14.0
3465549	38HDR024-32	CNPH*3017A**	58CV(A,X)155-22	23,600	11.5	14.0
3465551	38HDR024-32	CNPH*3017A**	58MEB040-12	23,600	12.0	14.5
3465552	38HDR024-32	CNPH*3017A**	58MEB060-12	23,600	12.0	14.5
3465553	38HDR024-32	CNPH*3017A**	58MEB080-12	23,600	12.0	14.5
3465540	38HDR024-32	CNPH*3017A**	58MV(B,C)060-14	23,600	11.5	14.0
3465541	38HDR024-32	CNPH*3017A**	58MV(B,C)080-14	23,400	11.5	14.0
3465542	38HDR024-32	CNPH*3017A**	58MV(B,C)080-20	23,400	11.5	14.0
3465543	38HDR024-32	CNPH*3017A**	58MV(B,C)100-20	23,600	11.5	14.0
3465544	38HDR024-32	CNPH*3017A**	58MV(B,C)120-20	23,600	11.5	14.0
3465539	38HDR024-32	CNPH*3017A**	58MVB040-14	23,600	11.5	14.0
3465550	38HDR024-32	CNPH*3017A**	58PH*045-08	23,600	12.0	14.5
3465538	38HDR024-32	CNPH*3017A**+TDR		23,600	11.0	13.0
3465505	38HDR024-32	CNPV*2414A**	58CV(A,X)070-12	23,400	11.5	14.0
3465506	38HDR024-32	CNPV*2414A**	58PH*045-08	23,400	11.5	14.0
3465509	38HDR024-32	CNPV*2417A**	58CV(A,X)090-16	23,400	11.5	14.0
3465510	38HDR024-32	CNPV*2417A**	58MEB040-12	23,400	12.0	14.5
3465511	38HDR024-32	CNPV*2417A**	58MEB060-12	23,400	12.0	14.5
3465512	38HDR024-32	CNPV*2417A**	58MEB080-12	23,400	12.0	14.5
3465508	38HDR024-32	CNPV*2417A**	58MV(B,C)060-14	23,400	11.5	14.0
3465507	38HDR024-32	CNPV*2417A**+TDR		23,400	11.0	13.0
3465514	38HDR024-32	CNPV*3014A**	58CV(A,X)070-12	23,400	11.5	14.0
3465515	38HDR024-32	CNPV*3014A**	58PH*045-08	23,600	11.5	14.0
3465513	38HDR024-32	CNPV*3014A**+TDR		23,600	11.0	13.0
3465518	38HDR024-32	CNPV*3017A**	58CV(A,X)090-16	23,600	11.5	14.0
3465519	38HDR024-32	CNPV*3017A**	58MEB040-12	23,600	12.0	14.5
3465520	38HDR024-32	CNPV*3017A**	58MEB060-12	23,600	12.0	14.5
3465521	38HDR024-32	CNPV*3017A**	58MEB080-12	23,600	12.0	14.5
3465517	38HDR024-32	CNPV*3017A**	58MV(B,C)060-14	23,600	11.5	14.0
3465516	38HDR024-32	CNPV*3017A**+TDR		23,600	11.0	13.0
3465562	38HDR024-32	CSPH*2412A**	58CV(A,X)070-12	23,400	11.5	14.0
3465563	38HDR024-32	CSPH*2412A**	58CV(A,X)090-16	23,400	11.5	14.0
3465564	38HDR024-32	CSPH*2412A**	58CV(A,X)110-20	23,400	11.5	14.0
3465565	38HDR024-32	CSPH*2412A**	58CV(A,X)135-22	23,400	11.5	14.0
3465566	38HDR024-32	CSPH*2412A**	58CV(A,X)155-22	23,400	11.5	14.0
3465568	38HDR024-32	CSPH*2412A**	58MEB040-12	23,400	12.0	14.5
3465569	38HDR024-32	CSPH*2412A**	58MEB060-12	23,400	12.0	14.5
3465570	38HDR024-32	CSPH*2412A**	58MEB080-12	23,400	12.0	14.5
3465557	38HDR024-32	CSPH*2412A**	58MV(B,C)060-14	23,400	11.5	14.0
3465558	38HDR024-32	CSPH*2412A**	58MV(B,C)080-14	23,400	11.5	14.0
3465559	38HDR024-32	CSPH*2412A**	58MV(B,C)080-20	23,400	11.5	14.0
3465560	38HDR024-32	CSPH*2412A**	58MV(B,C)100-20	23,400	11.5	14.0
3465561	38HDR024-32	CSPH*2412A**	58MV(B,C)120-20	23,400	11.5	14.0
3465556	38HDR024-32	CSPH*2412A**	58MVB040-14	23,400	11.5	14.0
3465567	38HDR024-32	CSPH*2412A**	58PH*045-08	23,400	11.5	14.0
3465555	38HDR024-32	CSPH*2412A**+TDR		23,400	11.0	13.0
3465578	38HDR024-32	CSPH*3012A**	58CV(A,X)070-12	23,600	11.5	14.0
3465579	38HDR024-32	CSPH*3012A**	58CV(A,X)090-16	23,600	11.5	14.0
3465580	38HDR024-32	CSPH*3012A**	58CV(A,X)110-20	23,600	11.5	14.0
3465581	38HDR024-32	CSPH*3012A**	58CV(A,X)135-22	23,600	11.5	14.0
3465582	38HDR024-32	CSPH*3012A**	58CV(A,X)155-22	23,600	11.5	14.0
3465584	38HDR024-32	CSPH*3012A**	58MEB040-12	23,600	12.0	14.5
3465585	38HDR024-32	CSPH*3012A**	58MEB060-12	23,600	12.0	14.5
3465586	38HDR024-32	CSPH*3012A**	58MEB080-12	23,600	12.0	14.5
3465573	38HDR024-32	CSPH*3012A**	58MV(B,C)060-14	23,600	11.5	14.0
3465574	38HDR024-32	CSPH*3012A**	58MV(B,C)080-14	23,600	11.5	14.0
3465575	38HDR024-32	CSPH*3012A**	58MV(B,C)080-20	23,400	11.5	14.0
3465576	38HDR024-32	CSPH*3012A**	58MV(B,C)100-20	23,600	11.5	14.0
3465577	38HDR024-32	CSPH*3012A**	58MV(B,C)120-20	23,600	11.5	14.0
3465572	38HDR024-32	CSPH*3012A**	58MVB040-14	23,600	11.5	14.0
3465583	38HDR024-32	CSPH*3012A**	58PH*045-08	23,600	12.0	14.5
3465571	38HDR024-32	CSPH*3012A**+TDR		23,600	11.0	13.0
3465594	38HDR024-32	FE4AN(B,F)003+UI		23,800	12.0	14.5
3465592	38HDR024-32	FE4ANF002+UI		23,600	12.0	14.5
3465596	38HDR024-32	FE5ANB004+UI		24,000	12.0	14.5
3465597	38HDR024-32	FF1ENP024		22,800	11.0	13.0
3465606	38HDR024-32	FF1ENP025		23,400	11.5	14.0
3465600	38HDR024-32	FF1ENP030		23,000	11.0	13.0

38HDR

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465608	38HDR024-32	FF1ENP031		23,600	11.5	14.0
3465609	38HDR024-32	FF1ENP037		23,800	11.5	14.0
3465603	38HDR024-32	FV4BN(B,F)003		23,800	12.0	14.5
3465601	38HDR024-32	FV4BNF002		23,600	12.0	14.5
3465613	38HDR024-32	FV4CN(B,F)003		23,800	12.0	14.5
3465611	38HDR024-32	FV4CNF002		23,600	12.0	14.5
3465589	38HDR024-32	FX4CNF024		23,400	11.5	14.0
3465590	38HDR024-32	FX4CNF030		23,800	11.5	14.0
3465587	38HDR024-32	FY4ANF024		23,200	11.0	13.0
3465588	38HDR024-32	FY4ANF030		23,600	11.0	13.0
1085620	38HDR030-31	†CNPV*3014A**+TDR		28,000	11.0	13.0
1117978	38HDR030-31	40QAC036-- --3		29,000	12.0	13.0
1085624	38HDR030-31	CAP**3014A**	58CV(A,X)070-12	28,000	11.5	14.0
1085622	38HDR030-31	CAP**3014A**+TDR		28,000	11.0	13.0
1085788	38HDR030-31	CAP**3017A**	58CV(A,X)070-12	28,000	11.5	14.0
1085630	38HDR030-31	CAP**3017A**	58CV(A,X)090-16	28,000	11.5	14.0
3112104	38HDR030-31	CAP**3017A**	58MEB040-12	28,000	12.0	14.5
3112105	38HDR030-31	CAP**3017A**	58MEB060-12	28,000	12.0	14.5
3112106	38HDR030-31	CAP**3017A**	58MEB080-12	28,000	12.0	14.5
3112107	38HDR030-31	CAP**3017A**	58MEB080-16	28,000	12.0	14.5
1390448	38HDR030-31	CAP**3017A**	58MV(B,C)060-14	28,000	11.5	14.0
3015389	38HDR030-31	CAP**3017A**	58PH*070-16	28,000	11.5	14.0
1085626	38HDR030-31	CAP**3017A**+TDR		28,000	11.0	13.0
1085634	38HDR030-31	CAP**3614A**	58CV(A,X)070-12	28,600	11.5	14.0
1085632	38HDR030-31	CAP**3614A**+TDR		28,600	11.0	13.0
1085790	38HDR030-31	CAP**3617A**	58CV(A,X)070-12	28,600	11.5	14.0
1085640	38HDR030-31	CAP**3617A**	58CV(A,X)090-16	28,600	11.5	14.0
3112108	38HDR030-31	CAP**3617A**	58MEB040-12	28,600	12.0	14.5
3112109	38HDR030-31	CAP**3617A**	58MEB060-12	28,600	12.0	14.5
3112110	38HDR030-31	CAP**3617A**	58MEB080-12	28,600	12.0	14.5
3112111	38HDR030-31	CAP**3617A**	58MEB080-16	28,600	12.0	14.5
1390450	38HDR030-31	CAP**3617A**	58MV(B,C)060-14	28,600	11.5	14.0
3015390	38HDR030-31	CAP**3617A**	58PH*070-16	28,600	12.0	14.5
1085636	38HDR030-31	CAP**3617A**+TDR		28,600	11.0	13.0
1085794	38HDR030-31	CAP**3621A**	58CV(A,X)090-16	28,600	11.5	14.0
1085650	38HDR030-31	CAP**3621A**	58CV(A,X)110-20	28,600	11.5	14.0
1390464	38HDR030-31	CAP**3621A**	58MV(B,C)060-14	28,600	11.5	14.0
1390468	38HDR030-31	CAP**3621A**	58MV(B,C)080-14	28,600	11.5	14.0
1390480	38HDR030-31	CAP**3621A**	58MV(B,C)080-20	28,600	11.5	14.0
1390492	38HDR030-31	CAP**3621A**	58MV(B,C)100-20	28,600	11.5	14.0
3015391	38HDR030-31	CAP**3621A**	58PH*090-16	28,600	12.0	14.5
1085642	38HDR030-31	CAP**3621A**+TDR		28,600	11.0	13.0
1085724	38HDR030-31	CNPF*3618A**+TDR		28,600	11.0	13.0
1085690	38HDR030-31	CNPH*3017A**	58CV(A,X)070-12	28,000	11.5	14.0
1085692	38HDR030-31	CNPH*3017A**	58CV(A,X)090-16	28,000	11.5	14.0
1085694	38HDR030-31	CNPH*3017A**	58CV(A,X)110-20	28,000	11.5	14.0
1085696	38HDR030-31	CNPH*3017A**	58CV(A,X)135-22	28,000	11.5	14.0
1085698	38HDR030-31	CNPH*3017A**	58CV(A,X)155-22	28,000	11.5	14.0
3112120	38HDR030-31	CNPH*3017A**	58MEB040-12	28,000	12.0	14.5
3112121	38HDR030-31	CNPH*3017A**	58MEB060-12	28,000	12.0	14.5
3112122	38HDR030-31	CNPH*3017A**	58MEB080-12	28,000	12.0	14.5
3112123	38HDR030-31	CNPH*3017A**	58MEB080-16	28,000	12.0	14.5
1390456	38HDR030-31	CNPH*3017A**	58MV(B,C)060-14	28,000	11.5	14.0
1390472	38HDR030-31	CNPH*3017A**	58MV(B,C)080-14	28,000	11.5	14.0
1390484	38HDR030-31	CNPH*3017A**	58MV(B,C)080-20	28,000	11.5	14.0
1390496	38HDR030-31	CNPH*3017A**	58MV(B,C)100-20	28,000	11.5	14.0
1390504	38HDR030-31	CNPH*3017A**	58MV(B,C)120-20	28,000	11.5	14.0
3015395	38HDR030-31	CNPH*3017A**	58PH*070-16	28,000	11.5	14.0
3015396	38HDR030-31	CNPH*3017A**	58PH*090-16	28,000	11.5	14.0
1085676	38HDR030-31	CNPH*3017A**+TDR		28,000	11.0	13.0
1085714	38HDR030-31	CNPH*3617A**	58CV(A,X)070-12	28,600	11.5	14.0
1085716	38HDR030-31	CNPH*3617A**	58CV(A,X)090-16	28,600	11.5	14.0
1085718	38HDR030-31	CNPH*3617A**	58CV(A,X)110-20	28,600	11.5	14.0
1085720	38HDR030-31	CNPH*3617A**	58CV(A,X)135-22	28,600	11.5	14.0
1085722	38HDR030-31	CNPH*3617A**	58CV(A,X)155-22	28,600	11.5	14.0
3112124	38HDR030-31	CNPH*3617A**	58MEB040-12	28,600	12.0	14.5
3112125	38HDR030-31	CNPH*3617A**	58MEB060-12	28,600	12.0	14.5
3112126	38HDR030-31	CNPH*3617A**	58MEB080-12	28,600	12.0	14.5
3112127	38HDR030-31	CNPH*3617A**	58MEB080-16	28,600	12.0	14.5
1390458	38HDR030-31	CNPH*3617A**	58MV(B,C)060-14	28,600	11.5	14.0
1390474	38HDR030-31	CNPH*3617A**	58MV(B,C)080-14	28,600	11.5	14.0
1390486	38HDR030-31	CNPH*3617A**	58MV(B,C)080-20	28,600	11.5	14.0
1390498	38HDR030-31	CNPH*3617A**	58MV(B,C)100-20	28,600	11.5	14.0
1390506	38HDR030-31	CNPH*3617A**	58MV(B,C)120-20	28,600	11.5	14.0
3015397	38HDR030-31	CNPH*3617A**	58PH*070-16	28,600	12.0	14.5
3015398	38HDR030-31	CNPH*3617A**	58PH*090-16	28,600	12.0	14.5
1085700	38HDR030-31	CNPH*3617A**+TDR		28,600	11.0	13.0
1085652	38HDR030-31	CNPV*3014A**	58CV(A,X)070-12	28,000	11.5	14.0

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
1085796	38HDR030-31	CNPV*3017A**	58CV(A,X)070-12	28,000	11.5	14.0
1085658	38HDR030-31	CNPV*3017A**	58CV(A,X)090-16	28,000	11.5	14.0
3112112	38HDR030-31	CNPV*3017A**	58MEB040-12	28,000	12.0	14.5
3112113	38HDR030-31	CNPV*3017A**	58MEB060-12	28,000	12.0	14.5
3112114	38HDR030-31	CNPV*3017A**	58MEB080-12	28,000	12.0	14.5
3112115	38HDR030-31	CNPV*3017A**	58MEB080-16	28,000	12.0	14.5
1390452	38HDR030-31	CNPV*3017A**	58MV(B,C)060-14	28,000	11.5	14.0
3015392	38HDR030-31	CNPV*3017A**	58PH*070-16	28,000	11.5	14.0
1085654	38HDR030-31	CNPV*3017A**+TDR		28,000	11.0	13.0
1085798	38HDR030-31	CNPV*3617A**	58CV(A,X)070-12	28,600	11.5	14.0
1085664	38HDR030-31	CNPV*3617A**	58CV(A,X)090-16	28,600	11.5	14.0
3112116	38HDR030-31	CNPV*3617A**	58MEB040-12	28,600	12.0	14.5
3112117	38HDR030-31	CNPV*3617A**	58MEB060-12	28,600	12.0	14.5
3112118	38HDR030-31	CNPV*3617A**	58MEB080-12	28,600	12.0	14.5
3112119	38HDR030-31	CNPV*3617A**	58MEB080-16	28,600	12.0	14.5
1390454	38HDR030-31	CNPV*3617A**	58MV(B,C)060-14	28,600	11.5	14.0
3015393	38HDR030-31	CNPV*3617A**	58PH*070-16	28,600	12.0	14.5
1085660	38HDR030-31	CNPV*3617A**+TDR		28,600	11.0	13.0
1085802	38HDR030-31	CNPV*3621A**	58CV(A,X)090-16	28,600	11.5	14.0
1085674	38HDR030-31	CNPV*3621A**	58CV(A,X)110-20	28,600	11.5	14.0
1390466	38HDR030-31	CNPV*3621A**	58MV(B,C)060-14	28,600	11.5	14.0
1390470	38HDR030-31	CNPV*3621A**	58MV(B,C)080-14	28,600	11.5	14.0
1390482	38HDR030-31	CNPV*3621A**	58MV(B,C)080-20	28,600	11.5	14.0
1390494	38HDR030-31	CNPV*3621A**	58MV(B,C)100-20	28,600	11.5	14.0
3015394	38HDR030-31	CNPV*3621A**	58PH*090-16	28,600	12.0	14.5
1085666	38HDR030-31	CNPV*3621A**+TDR		28,600	11.0	13.0
1085740	38HDR030-31	CSPH*3012A**	58CV(A,X)070-12	28,000	11.5	14.0
1085742	38HDR030-31	CSPH*3012A**	58CV(A,X)090-16	28,000	11.5	14.0
1085744	38HDR030-31	CSPH*3012A**	58CV(A,X)110-20	28,000	11.5	14.0
1085746	38HDR030-31	CSPH*3012A**	58CV(A,X)135-22	28,000	11.5	14.0
1085748	38HDR030-31	CSPH*3012A**	58CV(A,X)155-22	28,000	11.5	14.0
3112128	38HDR030-31	CSPH*3012A**	58MEB040-12	28,000	12.0	14.5
3112129	38HDR030-31	CSPH*3012A**	58MEB060-12	28,000	12.0	14.5
3112130	38HDR030-31	CSPH*3012A**	58MEB080-12	28,000	12.0	14.5
3112131	38HDR030-31	CSPH*3012A**	58MEB080-16	28,000	12.0	14.5
1390460	38HDR030-31	CSPH*3012A**	58MV(B,C)060-14	28,000	11.5	14.0
1390476	38HDR030-31	CSPH*3012A**	58MV(B,C)080-14	28,000	11.5	14.0
1390488	38HDR030-31	CSPH*3012A**	58MV(B,C)080-20	28,000	11.5	14.0
1390500	38HDR030-31	CSPH*3012A**	58MV(B,C)100-20	28,000	11.5	14.0
1390508	38HDR030-31	CSPH*3012A**	58MV(B,C)120-20	28,000	11.5	14.0
3015399	38HDR030-31	CSPH*3012A**	58PH*070-16	28,000	11.5	14.0
3015400	38HDR030-31	CSPH*3012A**	58PH*090-16	28,000	11.5	14.0
1085726	38HDR030-31	CSPH*3012A**+TDR		28,000	11.0	13.0
1085764	38HDR030-31	CSPH*3612A**	58CV(A,X)070-12	28,600	11.5	14.0
1085766	38HDR030-31	CSPH*3612A**	58CV(A,X)090-16	28,600	11.5	14.0
1085768	38HDR030-31	CSPH*3612A**	58CV(A,X)110-20	28,600	11.5	14.0
1085770	38HDR030-31	CSPH*3612A**	58CV(A,X)135-22	28,600	11.5	14.0
1085772	38HDR030-31	CSPH*3612A**	58CV(A,X)155-22	28,600	11.5	14.0
3112132	38HDR030-31	CSPH*3612A**	58MEB040-12	28,600	12.0	14.5
3112133	38HDR030-31	CSPH*3612A**	58MEB060-12	28,600	12.0	14.5
3112134	38HDR030-31	CSPH*3612A**	58MEB080-12	28,600	12.0	14.5
3112135	38HDR030-31	CSPH*3612A**	58MEB080-16	28,600	12.0	14.5
1390462	38HDR030-31	CSPH*3612A**	58MV(B,C)060-14	28,600	11.5	14.0
1390478	38HDR030-31	CSPH*3612A**	58MV(B,C)080-14	28,600	11.5	14.0
1390490	38HDR030-31	CSPH*3612A**	58MV(B,C)080-20	28,600	11.5	14.0
1390502	38HDR030-31	CSPH*3612A**	58MV(B,C)100-20	28,600	11.5	14.0
1390510	38HDR030-31	CSPH*3612A**	58MV(B,C)120-20	28,600	11.5	14.0
3015401	38HDR030-31	CSPH*3612A**	58PH*070-16	28,600	12.0	14.5
3015402	38HDR030-31	CSPH*3612A**	58PH*090-16	28,600	12.0	14.5
1085750	38HDR030-31	CSPH*3612A**+TDR		28,600	11.0	13.0
1086240	38HDR030-31	FE4AN(B,F)003+UI		28,600	11.5	14.0
1086242	38HDR030-31	FE4AN(B,F)005+UI		29,000	12.5	15.0
1086238	38HDR030-31	FE4ANF002+UI		28,600	11.5	14.0
1085782	38HDR030-31	FF1ENP030		28,000	11.0	13.0
1085784	38HDR030-31	FF1ENP036		28,600	11.0	13.0
1085786	38HDR030-31	FV4BNF002		28,600	11.5	14.0
3404625	38HDR030-31	FV4CNF002		28,600	11.5	14.0
1085780	38HDR030-31	FX4CN(B,F)036		28,600	11.5	14.0
1085778	38HDR030-31	FX4CNF030		28,000	11.5	14.0
1085774	38HDR030-31	FY4ANF030		28,000	11.0	13.0
1085776	38HDR030-31	FY4ANF036		28,600	11.0	13.0
1085804	38HDR036-31	†CNPV*4221A**+TDR		33,400	11.0	13.0
1117980	38HDR036-31	40QAC036---3		33,000	11.4	13.0
1085808	38HDR036-31	CAP**3614A**	58CV(A,X)070-12	32,600	11.5	13.5
3015403	38HDR036-31	CAP**3614A**	58PH*045-08	33,000	11.5	14.0
1085806	38HDR036-31	CAP**3614A**+TDR		32,600	11.0	13.0
1085982	38HDR036-31	CAP**3617A**	58CV(A,X)070-12	33,000	11.5	14.0
1085814	38HDR036-31	CAP**3617A**	58CV(A,X)090-16	33,000	11.5	14.0

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3112136	38HDR036-31	CAP**3617A**	58MEB040-12	33,000	12.0	14.5
3112137	38HDR036-31	CAP**3617A**	58MEB060-12	33,000	12.0	14.5
3112138	38HDR036-31	CAP**3617A**	58MEB080-12	33,000	12.0	14.5
3112139	38HDR036-31	CAP**3617A**	58MEB080-16	33,000	12.0	14.5
1390512	38HDR036-31	CAP**3617A**	58MV(B,C)060-14	33,000	11.5	13.5
3015404	38HDR036-31	CAP**3617A**	58PH*070-16	33,000	11.5	14.0
1085810	38HDR036-31	CAP**3617A**+TDR		33,000	11.0	13.0
1085986	38HDR036-31	CAP**3621A**	58CV(A,X)090-16	33,000	11.5	14.0
1085824	38HDR036-31	CAP**3621A**	58CV(A,X)110-20	33,000	11.5	14.0
3112140	38HDR036-31	CAP**3621A**	58MEB100-20	33,000	12.0	14.5
1390524	38HDR036-31	CAP**3621A**	58MV(B,C)060-14	33,000	11.5	14.0
1390532	38HDR036-31	CAP**3621A**	58MV(B,C)080-14	33,000	11.5	13.5
1390550	38HDR036-31	CAP**3621A**	58MV(B,C)080-20	33,000	11.5	13.5
1390568	38HDR036-31	CAP**3621A**	58MV(B,C)100-20	33,000	11.5	14.0
3015405	38HDR036-31	CAP**3621A**	58PH*090-16	33,000	12.0	14.5
3015406	38HDR036-31	CAP**3621A**	58PH*110-20	33,000	12.0	14.5
1085816	38HDR036-31	CAP**3621A**+TDR		33,000	11.0	13.0
1085990	38HDR036-31	CAP**4221A**	58CV(A,X)090-16	33,400	11.5	14.0
1085834	38HDR036-31	CAP**4221A**	58CV(A,X)110-20	33,400	11.5	14.0
3112141	38HDR036-31	CAP**4221A**	58MEB100-20	33,400	12.0	14.5
1390526	38HDR036-31	CAP**4221A**	58MV(B,C)060-14	33,400	11.5	14.0
1390534	38HDR036-31	CAP**4221A**	58MV(B,C)080-14	33,400	11.5	13.5
1390552	38HDR036-31	CAP**4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390570	38HDR036-31	CAP**4221A**	58MV(B,C)100-20	33,400	11.5	14.0
3015407	38HDR036-31	CAP**4221A**	58PH*090-16	33,400	12.0	14.5
3015408	38HDR036-31	CAP**4221A**	58PH*110-20	33,400	12.0	14.5
1085826	38HDR036-31	CAP**4221A**+TDR		33,400	11.0	13.0
1085998	38HDR036-31	CAP**4224A**	58CV(A,X)110-20	33,400	11.5	14.0
1085842	38HDR036-31	CAP**4224A**	58CV(A,X)135-22	33,400	11.5	14.0
1085844	38HDR036-31	CAP**4224A**	58CV(A,X)155-22	33,400	11.5	14.0
1390548	38HDR036-31	CAP**4224A**	58MV(B,C)080-14	33,400	11.5	14.0
1390566	38HDR036-31	CAP**4224A**	58MV(B,C)080-20	33,400	11.5	14.0
1390584	38HDR036-31	CAP**4224A**	58MV(B,C)100-20	33,400	11.5	14.0
1390586	38HDR036-31	CAP**4224A**	58MV(B,C)120-20	33,400	11.5	13.5
1085836	38HDR036-31	CAP**4224A**+TDR		33,400	11.0	13.0
1085918	38HDR036-31	CNPF*3618A**+TDR		33,000	11.0	13.0
1085884	38HDR036-31	CNPH*3617A**	58CV(A,X)070-12	33,000	11.5	13.5
1085886	38HDR036-31	CNPH*3617A**	58CV(A,X)090-16	33,000	11.5	13.5
1085888	38HDR036-31	CNPH*3617A**	58CV(A,X)110-20	33,000	11.5	13.5
1085890	38HDR036-31	CNPH*3617A**	58CV(A,X)135-22	33,000	11.5	13.5
1085892	38HDR036-31	CNPH*3617A**	58CV(A,X)155-22	33,000	11.5	14.0
3112156	38HDR036-31	CNPH*3617A**	58MEB040-12	33,000	12.0	14.5
3112157	38HDR036-31	CNPH*3617A**	58MEB060-12	33,000	12.0	14.5
3112158	38HDR036-31	CNPH*3617A**	58MEB080-12	33,000	12.0	14.5
3112159	38HDR036-31	CNPH*3617A**	58MEB080-16	33,000	12.0	14.5
3112160	38HDR036-31	CNPH*3617A**	58MEB100-20	33,000	12.0	14.5
1390516	38HDR036-31	CNPH*3617A**	58MV(B,C)060-14	33,000	11.5	13.5
1390540	38HDR036-31	CNPH*3617A**	58MV(B,C)080-14	33,000	11.5	13.5
1390558	38HDR036-31	CNPH*3617A**	58MV(B,C)080-20	33,000	11.5	13.5
1390576	38HDR036-31	CNPH*3617A**	58MV(B,C)100-20	33,000	11.5	13.5
1390588	38HDR036-31	CNPH*3617A**	58MV(B,C)120-20	33,000	11.5	13.5
3015414	38HDR036-31	CNPH*3617A**	58PH*045-08	33,000	11.5	14.0
3015415	38HDR036-31	CNPH*3617A**	58PH*070-16	33,000	11.5	14.0
3015416	38HDR036-31	CNPH*3617A**	58PH*090-16	33,000	12.0	14.5
3015417	38HDR036-31	CNPH*3617A**	58PH*110-20	33,000	12.0	14.5
1085870	38HDR036-31	CNPH*3617A**+TDR		33,000	11.0	13.0
1085908	38HDR036-31	CNPH*4221A**	58CV(A,X)070-12	33,400	11.5	14.0
1085910	38HDR036-31	CNPH*4221A**	58CV(A,X)090-16	33,400	11.5	14.5
1085912	38HDR036-31	CNPH*4221A**	58CV(A,X)110-20	33,400	11.5	14.5
1085914	38HDR036-31	CNPH*4221A**	58CV(A,X)135-22	33,400	11.5	14.5
1085916	38HDR036-31	CNPH*4221A**	58CV(A,X)155-22	33,400	11.5	14.5
3112161	38HDR036-31	CNPH*4221A**	58MEB040-12	33,400	12.0	14.5
3112162	38HDR036-31	CNPH*4221A**	58MEB060-12	33,400	12.0	14.5
3112163	38HDR036-31	CNPH*4221A**	58MEB080-12	33,400	12.0	14.5
3112164	38HDR036-31	CNPH*4221A**	58MEB080-16	33,400	12.0	14.5
3112165	38HDR036-31	CNPH*4221A**	58MEB100-20	33,400	12.0	14.5
1390518	38HDR036-31	CNPH*4221A**	58MV(B,C)060-14	33,400	11.5	14.0
1390542	38HDR036-31	CNPH*4221A**	58MV(B,C)080-14	33,400	11.5	14.0
1390560	38HDR036-31	CNPH*4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390578	38HDR036-31	CNPH*4221A**	58MV(B,C)100-20	33,400	11.5	14.0
1390590	38HDR036-31	CNPH*4221A**	58MV(B,C)120-20	33,400	11.5	14.5
3015418	38HDR036-31	CNPH*4221A**	58PH*045-08	33,400	11.5	14.0
3015419	38HDR036-31	CNPH*4221A**	58PH*070-16	33,400	11.5	14.0
3015420	38HDR036-31	CNPH*4221A**	58PH*090-16	33,400	12.0	14.5
3015421	38HDR036-31	CNPH*4221A**	58PH*110-20	33,400	12.0	14.5
1085894	38HDR036-31	CNPH*4221A**+TDR		33,400	11.0	13.0
1086000	38HDR036-31	CNPV*3617A**	58CV(A,X)070-12	33,000	11.5	14.0
1085850	38HDR036-31	CNPV*3617A**	58CV(A,X)090-16	33,000	11.5	13.5
3112142	38HDR036-31	CNPV*3617A**	58MEB040-12	33,000	12.0	14.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3112143	38HDR036-31	CNPV*3617A**	58MEB060-12	33,000	12.0	14.5
3112144	38HDR036-31	CNPV*3617A**	58MEB080-12	33,000	12.0	14.5
3112145	38HDR036-31	CNPV*3617A**	58MEB080-16	33,000	12.0	14.5
1390514	38HDR036-31	CNPV*3617A**	58MV(B,C)060-14	33,000	11.5	13.5
3015409	38HDR036-31	CNPV*3617A**	58PH*070-16	33,000	11.5	14.0
1085846	38HDR036-31	CNPV*3617A**+TDR		33,000	11.0	13.0
1086004	38HDR036-31	CNPV*3621A**	58CV(A,X)090-16	33,000	11.5	14.5
1085860	38HDR036-31	CNPV*3621A**	58CV(A,X)110-20	33,000	11.5	13.5
3112146	38HDR036-31	CNPV*3621A**	58MEB100-20	33,000	12.0	14.5
1390528	38HDR036-31	CNPV*3621A**	58MV(B,C)060-14	33,000	11.5	14.5
1390536	38HDR036-31	CNPV*3621A**	58MV(B,C)080-14	33,000	11.5	13.5
1390554	38HDR036-31	CNPV*3621A**	58MV(B,C)080-20	33,000	11.5	13.5
1390572	38HDR036-31	CNPV*3621A**	58MV(B,C)100-20	33,000	11.5	13.5
3015410	38HDR036-31	CNPV*3621A**	58PH*090-16	33,000	12.0	14.5
3015411	38HDR036-31	CNPV*3621A**	58PH*110-20	33,000	12.0	14.5
1085852	38HDR036-31	CNPV*3621A**+TDR		33,000	11.0	13.0
3112149	38HDR036-31	CNPV*4217A**	58CV(A,X)090-16	33,400	12.0	14.5
3112151	38HDR036-31	CNPV*4217A**	58MEB040-12	33,400	12.0	14.5
3112152	38HDR036-31	CNPV*4217A**	58MEB060-12	33,400	12.0	14.5
3112153	38HDR036-31	CNPV*4217A**	58MEB080-12	33,400	12.0	14.5
3112154	38HDR036-31	CNPV*4217A**	58MEB080-16	33,400	12.0	14.5
3112148	38HDR036-31	CNPV*4217A**	58MV(B,C)060-14	33,400	12.0	14.5
3112150	38HDR036-31	CNPV*4217A**	58PH*070-16	33,400	12.0	14.5
3112147	38HDR036-31	CNPV*4217A**+TDR		33,400	11.0	13.0
1086008	38HDR036-31	CNPV*4221A**	58CV(A,X)090-16	33,400	11.5	14.5
1085868	38HDR036-31	CNPV*4221A**	58CV(A,X)110-20	33,400	11.5	14.5
3112155	38HDR036-31	CNPV*4221A**	58MEB100-20	33,400	12.0	14.5
1390530	38HDR036-31	CNPV*4221A**	58MV(B,C)060-14	33,400	11.5	14.5
1390538	38HDR036-31	CNPV*4221A**	58MV(B,C)080-14	33,400	11.5	14.0
1390556	38HDR036-31	CNPV*4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390574	38HDR036-31	CNPV*4221A**	58MV(B,C)100-20	33,400	11.5	14.0
3015412	38HDR036-31	CNPV*4221A**	58PH*090-16	33,400	12.0	14.5
3015413	38HDR036-31	CNPV*4221A**	58PH*110-20	33,400	12.0	14.5
1085934	38HDR036-31	CSPH*3612A**	58CV(A,X)070-12	33,000	11.5	14.0
1085936	38HDR036-31	CSPH*3612A**	58CV(A,X)090-16	33,000	11.5	14.5
1085938	38HDR036-31	CSPH*3612A**	58CV(A,X)110-20	33,000	11.5	14.5
1085940	38HDR036-31	CSPH*3612A**	58CV(A,X)135-22	33,000	11.5	14.5
1085942	38HDR036-31	CSPH*3612A**	58CV(A,X)155-22	33,000	11.5	14.5
3112166	38HDR036-31	CSPH*3612A**	58MEB040-12	33,000	12.0	14.5
3112167	38HDR036-31	CSPH*3612A**	58MEB060-12	33,000	12.0	14.5
3112168	38HDR036-31	CSPH*3612A**	58MEB080-12	33,000	12.0	14.5
3112169	38HDR036-31	CSPH*3612A**	58MEB080-16	33,000	12.0	14.5
3112170	38HDR036-31	CSPH*3612A**	58MEB100-20	33,000	12.0	14.5
1390520	38HDR036-31	CSPH*3612A**	58MV(B,C)060-14	33,000	11.5	14.5
1390544	38HDR036-31	CSPH*3612A**	58MV(B,C)080-14	33,000	11.5	14.0
1390562	38HDR036-31	CSPH*3612A**	58MV(B,C)080-20	33,000	11.5	14.0
1390580	38HDR036-31	CSPH*3612A**	58MV(B,C)100-20	33,000	11.5	14.5
1390592	38HDR036-31	CSPH*3612A**	58MV(B,C)120-20	33,000	11.5	14.5
3015422	38HDR036-31	CSPH*3612A**	58PH*045-08	33,000	11.5	14.0
3015423	38HDR036-31	CSPH*3612A**	58PH*070-16	33,000	11.5	14.0
3015424	38HDR036-31	CSPH*3612A**	58PH*090-16	33,000	12.0	14.5
3015425	38HDR036-31	CSPH*3612A**	58PH*110-20	33,000	12.0	14.5
1085920	38HDR036-31	CSPH*3612A**+TDR		33,000	11.0	13.0
1085958	38HDR036-31	CSPH*4212A**	58CV(A,X)070-12	33,400	11.5	14.0
1085960	38HDR036-31	CSPH*4212A**	58CV(A,X)090-16	33,400	11.5	14.5
1085962	38HDR036-31	CSPH*4212A**	58CV(A,X)110-20	33,400	11.5	14.5
1085964	38HDR036-31	CSPH*4212A**	58CV(A,X)135-22	33,400	11.5	14.5
1085966	38HDR036-31	CSPH*4212A**	58CV(A,X)155-22	33,400	11.5	14.5
3112171	38HDR036-31	CSPH*4212A**	58MEB040-12	33,400	12.0	14.5
3112172	38HDR036-31	CSPH*4212A**	58MEB060-12	33,400	12.0	14.5
3112173	38HDR036-31	CSPH*4212A**	58MEB080-12	33,400	12.0	14.5
3112174	38HDR036-31	CSPH*4212A**	58MEB080-16	33,400	12.0	14.5
3112175	38HDR036-31	CSPH*4212A**	58MEB100-20	33,400	12.0	14.5
1390522	38HDR036-31	CSPH*4212A**	58MV(B,C)060-14	33,400	11.5	14.0
1390546	38HDR036-31	CSPH*4212A**	58MV(B,C)080-14	33,400	11.5	14.0
1390564	38HDR036-31	CSPH*4212A**	58MV(B,C)080-20	33,400	11.5	14.0
1390582	38HDR036-31	CSPH*4212A**	58MV(B,C)100-20	33,400	11.5	14.0
1390594	38HDR036-31	CSPH*4212A**	58MV(B,C)120-20	33,400	11.5	14.0
3015426	38HDR036-31	CSPH*4212A**	58PH*045-08	33,400	11.5	14.0
3015427	38HDR036-31	CSPH*4212A**	58PH*070-16	33,400	11.5	14.0
3015428	38HDR036-31	CSPH*4212A**	58PH*090-16	33,400	12.0	14.5
3015429	38HDR036-31	CSPH*4212A**	58PH*110-20	33,400	12.0	14.5
1085944	38HDR036-31	CSPH*4212A**+TDR		33,400	11.0	13.0
1086246	38HDR036-31	FE4AN(B,F)003+UI		33,000	11.5	14.0
1086248	38HDR036-31	FE4AN(B,F)005+UI		33,400	12.5	15.0
1086250	38HDR036-31	FE4ANB006+UI		33,400	12.5	15.0
1086244	38HDR036-31	FE4ANF002+UI		33,000	11.5	13.5
1085976	38HDR036-31	FF1ENP036		33,000	11.0	13.0
1085980	38HDR036-31	FV4BNB006		33,400	12.5	15.0

38HDR

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
1085978	38HDR036-31	FV4BNF002		33,000	11.5	13.5
3404627	38HDR036-31	FV4CNB006		33,400	12.5	15.0
3404626	38HDR036-31	FV4CNF002		33,000	11.5	13.5
1085972	38HDR036-31	FX4CN(B,F)036		33,000	11.5	14.0
1085974	38HDR036-31	FX4CN(B,F)042		33,400	11.5	14.0
1085968	38HDR036-31	FY4ANF036		33,000	11.0	13.0
1085970	38HDR036-31	FY4ANF042		33,400	11.0	13.0
1117042	38HDR036-51	†CNPV*4221A**+TDR		33,400	11.0	13.0
1117982	38HDR036-51	40QAC036--3		33,000	11.4	13.0
1117046	38HDR036-51	CAP**3614A**	58CV(A,X)070-12	32,600	11.5	13.5
3015466	38HDR036-51	CAP**3614A**	58PH*045-08	33,000	11.5	14.0
1117044	38HDR036-51	CAP**3614A**+TDR		32,600	11.0	13.0
1117228	38HDR036-51	CAP**3617A**	58CV(A,X)070-12	33,000	11.5	14.0
1117052	38HDR036-51	CAP**3617A**	58CV(A,X)090-16	33,000	11.5	14.0
3116284	38HDR036-51	CAP**3617A**	58MEB040-12	33,000	12.0	14.5
3116285	38HDR036-51	CAP**3617A**	58MEB060-12	33,000	12.0	14.5
3116286	38HDR036-51	CAP**3617A**	58MEB080-12	33,000	12.0	14.5
3116287	38HDR036-51	CAP**3617A**	58MEB080-16	33,000	12.0	14.5
1390596	38HDR036-51	CAP**3617A**	58MV(B,C)060-14	33,000	11.5	13.5
3015467	38HDR036-51	CAP**3617A**	58PH*070-16	33,000	11.5	14.0
1117048	38HDR036-51	CAP**3617A**+TDR		33,000	11.0	13.0
1117232	38HDR036-51	CAP**3621A**	58CV(A,X)090-16	33,000	11.5	14.0
1145786	38HDR036-51	CAP**3621A**	58CV(A,X)110-20	33,000	11.5	14.0
3116288	38HDR036-51	CAP**3621A**	58MEB100-20	33,000	12.0	14.5
1390602	38HDR036-51	CAP**3621A**	58MV(B,C)060-14	33,000	11.5	14.0
1390616	38HDR036-51	CAP**3621A**	58MV(B,C)080-14	33,000	11.5	13.5
1390634	38HDR036-51	CAP**3621A**	58MV(B,C)080-20	33,000	11.5	13.5
1390658	38HDR036-51	CAP**3621A**	58MV(B,C)100-20	33,000	11.5	14.0
3015468	38HDR036-51	CAP**3621A**	58PH*090-16	33,000	12.0	14.5
3015469	38HDR036-51	CAP**3621A**	58PH*110-20	33,000	12.0	14.5
1117054	38HDR036-51	CAP**3621A**+TDR		33,000	11.0	13.0
1117236	38HDR036-51	CAP**4221A**	58CV(A,X)090-16	33,400	11.5	14.0
1145796	38HDR036-51	CAP**4221A**	58CV(A,X)110-20	33,400	11.5	14.0
3116289	38HDR036-51	CAP**4221A**	58MEB100-20	33,400	12.0	14.5
1390604	38HDR036-51	CAP**4221A**	58MV(B,C)060-14	33,400	11.5	14.0
1390624	38HDR036-51	CAP**4221A**	58MV(B,C)080-14	33,400	11.5	13.5
1390642	38HDR036-51	CAP**4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390660	38HDR036-51	CAP**4221A**	58MV(B,C)100-20	33,400	11.5	14.0
3015470	38HDR036-51	CAP**4221A**	58PH*090-16	33,400	12.0	14.5
3015471	38HDR036-51	CAP**4221A**	58PH*110-20	33,400	12.0	14.5
1145788	38HDR036-51	CAP**4221A**+TDR		33,400	11.0	13.0
1117244	38HDR036-51	CAP**4224A**	58CV(A,X)110-20	33,400	11.5	14.0
1145804	38HDR036-51	CAP**4224A**	58CV(A,X)135-22	33,400	11.5	14.0
1145806	38HDR036-51	CAP**4224A**	58CV(A,X)155-22	33,400	11.5	14.0
1390622	38HDR036-51	CAP**4224A**	58MV(B,C)080-14	33,400	11.5	14.0
1390640	38HDR036-51	CAP**4224A**	58MV(B,C)080-20	33,400	11.5	14.0
1390656	38HDR036-51	CAP**4224A**	58MV(B,C)100-20	33,400	11.5	14.0
1390674	38HDR036-51	CAP**4224A**	58MV(B,C)120-20	33,400	11.5	13.5
1145798	38HDR036-51	CAP**4224A**+TDR		33,400	11.0	13.0
1117156	38HDR036-51	CNPF*3618A**+TDR		33,000	11.0	13.0
1145846	38HDR036-51	CNPH*3617A**	58CV(A,X)070-12	33,000	11.5	13.5
1145848	38HDR036-51	CNPH*3617A**	58CV(A,X)090-16	33,000	11.5	13.5
1145850	38HDR036-51	CNPH*3617A**	58CV(A,X)110-20	33,000	11.5	13.5
1145852	38HDR036-51	CNPH*3617A**	58CV(A,X)135-22	33,000	11.5	13.5
1145854	38HDR036-51	CNPH*3617A**	58CV(A,X)155-22	33,000	11.5	14.0
3116304	38HDR036-51	CNPH*3617A**	58MEB040-12	33,000	12.0	14.5
3116305	38HDR036-51	CNPH*3617A**	58MEB060-12	33,000	12.0	14.5
3116306	38HDR036-51	CNPH*3617A**	58MEB080-12	33,000	12.0	14.5
3116307	38HDR036-51	CNPH*3617A**	58MEB080-16	33,000	12.0	14.5
3116308	38HDR036-51	CNPH*3617A**	58MEB100-20	33,000	12.0	14.5
1390612	38HDR036-51	CNPH*3617A**	58MV(B,C)060-14	33,000	11.5	13.5
1390630	38HDR036-51	CNPH*3617A**	58MV(B,C)080-14	33,000	11.5	13.5
1390648	38HDR036-51	CNPH*3617A**	58MV(B,C)080-20	33,000	11.5	13.5
1390666	38HDR036-51	CNPH*3617A**	58MV(B,C)100-20	33,000	11.5	13.5
1390676	38HDR036-51	CNPH*3617A**	58MV(B,C)120-20	33,000	11.5	13.5
3015477	38HDR036-51	CNPH*3617A**	58PH*045-08	33,000	11.5	14.0
3015478	38HDR036-51	CNPH*3617A**	58PH*070-16	33,000	11.5	14.0
3015479	38HDR036-51	CNPH*3617A**	58PH*090-16	33,000	12.0	14.5
3015480	38HDR036-51	CNPH*3617A**	58PH*110-20	33,000	12.0	14.5
1145832	38HDR036-51	CNPH*3617A**+TDR		33,000	11.0	13.0
1145870	38HDR036-51	CNPH*4221A**	58CV(A,X)070-12	33,400	11.5	14.0
1145872	38HDR036-51	CNPH*4221A**	58CV(A,X)090-16	33,400	11.5	14.5
1145874	38HDR036-51	CNPH*4221A**	58CV(A,X)110-20	33,400	11.5	14.5
1117152	38HDR036-51	CNPH*4221A**	58CV(A,X)135-22	33,400	11.5	14.5
1117154	38HDR036-51	CNPH*4221A**	58CV(A,X)155-22	33,400	11.5	14.5
3116309	38HDR036-51	CNPH*4221A**	58MEB040-12	33,400	12.0	14.5
3116310	38HDR036-51	CNPH*4221A**	58MEB060-12	33,400	12.0	14.5
3116311	38HDR036-51	CNPH*4221A**	58MEB080-12	33,400	12.0	14.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3116312	38HDR036-51	CNPH*4221A**	58MEB080-16	33,400	12.0	14.5
3116313	38HDR036-51	CNPH*4221A**	58MEB100-20	33,400	12.0	14.5
1390614	38HDR036-51	CNPH*4221A**	58MV(B,C)060-14	33,400	11.5	14.0
1390632	38HDR036-51	CNPH*4221A**	58MV(B,C)080-14	33,400	11.5	14.0
1390650	38HDR036-51	CNPH*4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390668	38HDR036-51	CNPH*4221A**	58MV(B,C)100-20	33,400	11.5	14.0
1390678	38HDR036-51	CNPH*4221A**	58MV(B,C)120-20	33,400	11.5	14.5
3015481	38HDR036-51	CNPH*4221A**	58PH*045-08	33,400	11.5	14.0
3015482	38HDR036-51	CNPH*4221A**	58PH*070-16	33,400	11.5	14.0
3015483	38HDR036-51	CNPH*4221A**	58PH*090-16	33,400	12.0	14.5
3015484	38HDR036-51	CNPH*4221A**	58PH*110-20	33,400	12.0	14.5
1145856	38HDR036-51	CNPH*4221A**+TDR		33,400	11.0	13.0
1117246	38HDR036-51	CNPV*3617A**	58CV(A,X)070-12	33,000	11.5	14.0
1145812	38HDR036-51	CNPV*3617A**	58CV(A,X)090-16	33,000	11.5	13.5
3116290	38HDR036-51	CNPV*3617A**	58MEB040-12	33,000	12.0	14.5
3116291	38HDR036-51	CNPV*3617A**	58MEB060-12	33,000	12.0	14.5
3116292	38HDR036-51	CNPV*3617A**	58MEB080-12	33,000	12.0	14.5
3116293	38HDR036-51	CNPV*3617A**	58MEB080-16	33,000	12.0	14.5
1390610	38HDR036-51	CNPV*3617A**	58MV(B,C)060-14	33,000	11.5	13.5
3015472	38HDR036-51	CNPV*3617A**	58PH*070-16	33,000	11.5	14.0
1145808	38HDR036-51	CNPV*3617A**+TDR		33,000	11.0	13.0
1117250	38HDR036-51	CNPV*3621A**	58CV(A,X)090-16	33,000	11.5	14.5
1145822	38HDR036-51	CNPV*3621A**	58CV(A,X)110-20	33,000	11.5	13.5
3116294	38HDR036-51	CNPV*3621A**	58MEB100-20	33,000	12.0	14.5
1390606	38HDR036-51	CNPV*3621A**	58MV(B,C)060-14	33,000	11.5	14.5
1390626	38HDR036-51	CNPV*3621A**	58MV(B,C)080-14	33,000	11.5	13.5
1390644	38HDR036-51	CNPV*3621A**	58MV(B,C)080-20	33,000	11.5	13.5
1390662	38HDR036-51	CNPV*3621A**	58MV(B,C)100-20	33,000	11.5	13.5
3015473	38HDR036-51	CNPV*3621A**	58PH*090-16	33,000	12.0	14.5
3015474	38HDR036-51	CNPV*3621A**	58PH*110-20	33,000	12.0	14.5
1145814	38HDR036-51	CNPV*3621A**+TDR		33,000	11.0	13.0
3116297	38HDR036-51	CNPV*4217A**	58CV(A,X)090-16	33,400	12.0	14.5
3116299	38HDR036-51	CNPV*4217A**	58MEB040-12	33,400	12.0	14.5
3116300	38HDR036-51	CNPV*4217A**	58MEB060-12	33,400	12.0	14.5
3116301	38HDR036-51	CNPV*4217A**	58MEB080-12	33,400	12.0	14.5
3116302	38HDR036-51	CNPV*4217A**	58MEB080-16	33,400	12.0	14.5
3116296	38HDR036-51	CNPV*4217A**	58MV(B,C)060-14	33,400	12.0	14.5
3116298	38HDR036-51	CNPV*4217A**	58PH*070-16	33,400	12.0	14.5
3116295	38HDR036-51	CNPV*4217A**+TDR		33,400	11.0	13.0
1117254	38HDR036-51	CNPV*4221A**	58CV(A,X)090-16	33,400	11.5	14.5
1145830	38HDR036-51	CNPV*4221A**	58CV(A,X)110-20	33,400	11.5	14.5
3116303	38HDR036-51	CNPV*4221A**	58MEB100-20	33,400	12.0	14.5
1390608	38HDR036-51	CNPV*4221A**	58MV(B,C)060-14	33,400	11.5	14.5
1390628	38HDR036-51	CNPV*4221A**	58MV(B,C)080-14	33,400	11.5	14.0
1390646	38HDR036-51	CNPV*4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390664	38HDR036-51	CNPV*4221A**	58MV(B,C)100-20	33,400	11.5	14.0
3015475	38HDR036-51	CNPV*4221A**	58PH*090-16	33,400	12.0	14.5
3015476	38HDR036-51	CNPV*4221A**	58PH*110-20	33,400	12.0	14.5
1117172	38HDR036-51	CSPH*3612A**	58CV(A,X)070-12	33,000	11.5	14.0
1117174	38HDR036-51	CSPH*3612A**	58CV(A,X)090-16	33,000	11.5	14.5
1117176	38HDR036-51	CSPH*3612A**	58CV(A,X)110-20	33,000	11.5	14.5
1117178	38HDR036-51	CSPH*3612A**	58CV(A,X)135-22	33,000	11.5	14.5
1117180	38HDR036-51	CSPH*3612A**	58CV(A,X)155-22	33,000	11.5	14.5
3116314	38HDR036-51	CSPH*3612A**	58MEB040-12	33,000	12.0	14.5
3116315	38HDR036-51	CSPH*3612A**	58MEB060-12	33,000	12.0	14.5
3116316	38HDR036-51	CSPH*3612A**	58MEB080-12	33,000	12.0	14.5
3116317	38HDR036-51	CSPH*3612A**	58MEB080-16	33,000	12.0	14.5
3116318	38HDR036-51	CSPH*3612A**	58MEB100-20	33,000	12.0	14.5
1390598	38HDR036-51	CSPH*3612A**	58MV(B,C)060-14	33,000	11.5	14.5
1390618	38HDR036-51	CSPH*3612A**	58MV(B,C)080-14	33,000	11.5	14.0
1390636	38HDR036-51	CSPH*3612A**	58MV(B,C)080-20	33,000	11.5	14.0
1390652	38HDR036-51	CSPH*3612A**	58MV(B,C)100-20	33,000	11.5	14.5
1390670	38HDR036-51	CSPH*3612A**	58MV(B,C)120-20	33,000	11.5	14.5
3015485	38HDR036-51	CSPH*3612A**	58PH*045-08	33,000	11.5	14.0
3015486	38HDR036-51	CSPH*3612A**	58PH*070-16	33,000	11.5	14.0
3015487	38HDR036-51	CSPH*3612A**	58PH*090-16	33,000	12.0	14.5
3015488	38HDR036-51	CSPH*3612A**	58PH*110-20	33,000	12.0	14.5
1117158	38HDR036-51	CSPH*3612A**+TDR		33,000	11.0	13.0
1117196	38HDR036-51	CSPH*4212A**	58CV(A,X)070-12	33,400	11.5	14.0
1117198	38HDR036-51	CSPH*4212A**	58CV(A,X)090-16	33,400	11.5	14.5
1117200	38HDR036-51	CSPH*4212A**	58CV(A,X)110-20	33,400	11.5	14.5
1117202	38HDR036-51	CSPH*4212A**	58CV(A,X)135-22	33,400	11.5	14.5
1117204	38HDR036-51	CSPH*4212A**	58CV(A,X)155-22	33,400	11.5	14.5
3116319	38HDR036-51	CSPH*4212A**	58MEB040-12	33,400	12.0	14.5
3116320	38HDR036-51	CSPH*4212A**	58MEB060-12	33,400	12.0	14.5
3116321	38HDR036-51	CSPH*4212A**	58MEB080-12	33,400	12.0	14.5
3116322	38HDR036-51	CSPH*4212A**	58MEB080-16	33,400	12.0	14.5
3116323	38HDR036-51	CSPH*4212A**	58MEB100-20	33,400	12.0	14.5
1390600	38HDR036-51	CSPH*4212A**	58MV(B,C)060-14	33,400	11.5	14.0

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
1390620	38HDR036-51	CSPH*4212A**	58MV(B,C)080-14	33,400	11.5	14.0
1390638	38HDR036-51	CSPH*4212A**	58MV(B,C)080-20	33,400	11.5	14.0
1390654	38HDR036-51	CSPH*4212A**	58MV(B,C)100-20	33,400	11.5	14.0
1390672	38HDR036-51	CSPH*4212A**	58MV(B,C)120-20	33,400	11.5	14.0
3015489	38HDR036-51	CSPH*4212A**	58PH*045-08	33,400	11.5	14.0
3015490	38HDR036-51	CSPH*4212A**	58PH*070-16	33,400	11.5	14.0
3015491	38HDR036-51	CSPH*4212A**	58PH*090-16	33,400	12.0	14.5
3015492	38HDR036-51	CSPH*4212A**	58PH*110-20	33,400	12.0	14.5
1117182	38HDR036-51	CSPH*4212A**+TDR		33,400	11.0	13.0
1117216	38HDR036-51	FE4AN(B,F)003+UI		33,000	11.5	14.0
1117218	38HDR036-51	FE4AN(B,F)005+UI		33,400	12.5	15.0
1117220	38HDR036-51	FE4ANB006+UI		33,400	12.5	15.0
1117214	38HDR036-51	FE4ANF002+UI		33,000	11.5	13.5
1117222	38HDR036-51	FF1ENP036		33,000	11.0	13.0
1117226	38HDR036-51	FV4BNB006		33,400	12.5	15.0
1117224	38HDR036-51	FV4BNF002		33,000	11.5	13.5
3404631	38HDR036-51	FV4CNB006		33,400	12.5	15.0
3404630	38HDR036-51	FV4CNF002		33,000	11.5	13.5
1117210	38HDR036-51	FX4CN(B,F)036		33,000	11.5	14.0
1117212	38HDR036-51	FX4CN(B,F)042		33,400	11.5	14.0
1117206	38HDR036-51	FY4ANF036		33,000	11.0	13.0
1117208	38HDR036-51	FY4ANF042		33,400	11.0	13.0
1117484	38HDR036-61	†CNPV*4221A**+TDR		33,400	11.0	13.0
1117984	38HDR036-61	40QAC036---3		33,000	11.4	13.0
1117488	38HDR036-61	CAP**3614A**	58CV(A,X)070-12	32,600	11.5	13.5
3015493	38HDR036-61	CAP**3614A**	58PH*045-08	33,000	11.5	14.0
1117486	38HDR036-61	CAP**3614A**+TDR		32,600	11.0	13.0
1117670	38HDR036-61	CAP**3617A**	58CV(A,X)070-12	33,000	11.5	14.0
1117494	38HDR036-61	CAP**3617A**	58CV(A,X)090-16	33,000	11.5	14.0
3116353	38HDR036-61	CAP**3617A**	58MEB040-12	33,000	12.0	14.5
3116354	38HDR036-61	CAP**3617A**	58MEB060-12	33,000	12.0	14.5
3116355	38HDR036-61	CAP**3617A**	58MEB080-12	33,000	12.0	14.5
3116356	38HDR036-61	CAP**3617A**	58MEB080-16	33,000	12.0	14.5
1390680	38HDR036-61	CAP**3617A**	58MV(B,C)060-14	33,000	11.5	13.5
3015494	38HDR036-61	CAP**3617A**	58PH*070-16	33,000	11.5	14.0
1117490	38HDR036-61	CAP**3617A**+TDR		33,000	11.0	13.0
1117674	38HDR036-61	CAP**3621A**	58CV(A,X)090-16	33,000	11.5	14.0
1117504	38HDR036-61	CAP**3621A**	58CV(A,X)110-20	33,000	11.5	14.0
3116357	38HDR036-61	CAP**3621A**	58MEB100-20	33,000	12.0	14.5
1390692	38HDR036-61	CAP**3621A**	58MV(B,C)060-14	33,000	11.5	14.0
1390700	38HDR036-61	CAP**3621A**	58MV(B,C)080-14	33,000	11.5	13.5
1390718	38HDR036-61	CAP**3621A**	58MV(B,C)080-20	33,000	11.5	13.5
1390736	38HDR036-61	CAP**3621A**	58MV(B,C)100-20	33,000	11.5	14.0
3015495	38HDR036-61	CAP**3621A**	58PH*090-16	33,000	12.0	14.5
3015496	38HDR036-61	CAP**3621A**	58PH*110-20	33,000	12.0	14.5
1117496	38HDR036-61	CAP**3621A**+TDR		33,000	11.0	13.0
1117678	38HDR036-61	CAP**4221A**	58CV(A,X)090-16	33,400	11.5	14.0
1117514	38HDR036-61	CAP**4221A**	58CV(A,X)110-20	33,400	11.5	14.0
3116358	38HDR036-61	CAP**4221A**	58MEB100-20	33,400	12.0	14.5
1390694	38HDR036-61	CAP**4221A**	58MV(B,C)060-14	33,400	11.5	14.0
1390702	38HDR036-61	CAP**4221A**	58MV(B,C)080-14	33,400	11.5	13.5
1390720	38HDR036-61	CAP**4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390738	38HDR036-61	CAP**4221A**	58MV(B,C)100-20	33,400	11.5	14.0
3015497	38HDR036-61	CAP**4221A**	58PH*090-16	33,400	12.0	14.5
3015498	38HDR036-61	CAP**4221A**	58PH*110-20	33,400	12.0	14.5
1117506	38HDR036-61	CAP**4221A**+TDR		33,400	11.0	13.0
1117686	38HDR036-61	CAP**4224A**	58CV(A,X)110-20	33,400	11.5	14.0
1117522	38HDR036-61	CAP**4224A**	58CV(A,X)135-22	33,400	11.5	14.0
1117524	38HDR036-61	CAP**4224A**	58CV(A,X)155-22	33,400	11.5	14.0
1390716	38HDR036-61	CAP**4224A**	58MV(B,C)080-14	33,400	11.5	14.0
1390734	38HDR036-61	CAP**4224A**	58MV(B,C)080-20	33,400	11.5	14.0
1390752	38HDR036-61	CAP**4224A**	58MV(B,C)100-20	33,400	11.5	14.0
1390754	38HDR036-61	CAP**4224A**	58MV(B,C)120-20	33,400	11.5	13.5
1117516	38HDR036-61	CAP**4224A**+TDR		33,400	11.0	13.0
1117598	38HDR036-61	CNPF*3618A**+TDR		33,000	11.0	13.0
1117564	38HDR036-61	CNPH*3617A**	58CV(A,X)070-12	33,000	11.5	13.5
1117566	38HDR036-61	CNPH*3617A**	58CV(A,X)090-16	33,000	11.5	13.5
1117568	38HDR036-61	CNPH*3617A**	58CV(A,X)110-20	33,000	11.5	13.5
1117570	38HDR036-61	CNPH*3617A**	58CV(A,X)135-22	33,000	11.5	13.5
1117572	38HDR036-61	CNPH*3617A**	58CV(A,X)155-22	33,000	11.5	14.0
3116373	38HDR036-61	CNPH*3617A**	58MEB040-12	33,000	12.0	14.5
3116374	38HDR036-61	CNPH*3617A**	58MEB060-12	33,000	12.0	14.5
3116375	38HDR036-61	CNPH*3617A**	58MEB080-12	33,000	12.0	14.5
3116376	38HDR036-61	CNPH*3617A**	58MEB080-16	33,000	12.0	14.5
3116377	38HDR036-61	CNPH*3617A**	58MEB100-20	33,000	12.0	14.5
1390684	38HDR036-61	CNPH*3617A**	58MV(B,C)060-14	33,000	11.5	13.5
1390708	38HDR036-61	CNPH*3617A**	58MV(B,C)080-14	33,000	11.5	13.5
1390726	38HDR036-61	CNPH*3617A**	58MV(B,C)080-20	33,000	11.5	13.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
1390744	38HDR036-61	CNPH*3617A**	58MV(B,C)100-20	33,000	11.5	13.5
1390756	38HDR036-61	CNPH*3617A**	58MV(B,C)120-20	33,000	11.5	13.5
3015504	38HDR036-61	CNPH*3617A**	58PH*045-08	33,000	11.5	14.0
3015505	38HDR036-61	CNPH*3617A**	58PH*070-16	33,000	11.5	14.0
3015506	38HDR036-61	CNPH*3617A**	58PH*090-16	33,000	12.0	14.5
3015507	38HDR036-61	CNPH*3617A**	58PH*110-20	33,000	12.0	14.5
1117550	38HDR036-61	CNPH*3617A**+TDR		33,000	11.0	13.0
1117588	38HDR036-61	CNPH*4221A**	58CV(A,X)070-12	33,400	11.5	14.0
1117590	38HDR036-61	CNPH*4221A**	58CV(A,X)090-16	33,400	11.5	14.5
1117592	38HDR036-61	CNPH*4221A**	58CV(A,X)110-20	33,400	11.5	14.5
1117594	38HDR036-61	CNPH*4221A**	58CV(A,X)135-22	33,400	11.5	14.5
1117596	38HDR036-61	CNPH*4221A**	58CV(A,X)155-22	33,400	11.5	14.5
3116378	38HDR036-61	CNPH*4221A**	58MEB040-12	33,400	12.0	14.5
3116379	38HDR036-61	CNPH*4221A**	58MEB060-12	33,400	12.0	14.5
3116380	38HDR036-61	CNPH*4221A**	58MEB080-12	33,400	12.0	14.5
3116381	38HDR036-61	CNPH*4221A**	58MEB080-16	33,400	12.0	14.5
3116382	38HDR036-61	CNPH*4221A**	58MEB100-20	33,400	12.0	14.5
1390686	38HDR036-61	CNPH*4221A**	58MV(B,C)060-14	33,400	11.5	14.0
1390710	38HDR036-61	CNPH*4221A**	58MV(B,C)080-14	33,400	11.5	14.0
1390728	38HDR036-61	CNPH*4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390746	38HDR036-61	CNPH*4221A**	58MV(B,C)100-20	33,400	11.5	14.0
1390758	38HDR036-61	CNPH*4221A**	58MV(B,C)120-20	33,400	11.5	14.5
3015508	38HDR036-61	CNPH*4221A**	58PH*045-08	33,400	11.5	14.0
3015509	38HDR036-61	CNPH*4221A**	58PH*070-16	33,400	11.5	14.0
3015510	38HDR036-61	CNPH*4221A**	58PH*090-16	33,400	12.0	14.5
3015511	38HDR036-61	CNPH*4221A**	58PH*110-20	33,400	12.0	14.5
1117574	38HDR036-61	CNPH*4221A**+TDR		33,400	11.0	13.0
1117688	38HDR036-61	CNPV*3617A**	58CV(A,X)070-12	33,000	11.5	14.0
1117530	38HDR036-61	CNPV*3617A**	58CV(A,X)090-16	33,000	11.5	13.5
3116359	38HDR036-61	CNPV*3617A**	58MEB040-12	33,000	12.0	14.5
3116360	38HDR036-61	CNPV*3617A**	58MEB060-12	33,000	12.0	14.5
3116361	38HDR036-61	CNPV*3617A**	58MEB080-12	33,000	12.0	14.5
3116362	38HDR036-61	CNPV*3617A**	58MEB080-16	33,000	12.0	14.5
1390682	38HDR036-61	CNPV*3617A**	58MV(B,C)060-14	33,000	11.5	13.5
3015499	38HDR036-61	CNPV*3617A**	58PH*070-16	33,000	11.5	14.0
1117526	38HDR036-61	CNPV*3617A**+TDR		33,000	11.0	13.0
1117692	38HDR036-61	CNPV*3621A**	58CV(A,X)090-16	33,000	11.5	14.5
1117540	38HDR036-61	CNPV*3621A**	58CV(A,X)110-20	33,000	11.5	13.5
3116363	38HDR036-61	CNPV*3621A**	58MEB100-20	33,000	12.0	14.5
1390696	38HDR036-61	CNPV*3621A**	58MV(B,C)060-14	33,000	11.5	14.5
1390704	38HDR036-61	CNPV*3621A**	58MV(B,C)080-14	33,000	11.5	13.5
1390722	38HDR036-61	CNPV*3621A**	58MV(B,C)080-20	33,000	11.5	13.5
1390740	38HDR036-61	CNPV*3621A**	58MV(B,C)100-20	33,000	11.5	13.5
3015500	38HDR036-61	CNPV*3621A**	58PH*090-16	33,000	12.0	14.5
3015501	38HDR036-61	CNPV*3621A**	58PH*110-20	33,000	12.0	14.5
1117532	38HDR036-61	CNPV*3621A**+TDR		33,000	11.0	13.0
3116366	38HDR036-61	CNPV*4217A**	58CV(A,X)090-16	33,400	12.0	14.5
3116368	38HDR036-61	CNPV*4217A**	58MEB040-12	33,400	12.0	14.5
3116369	38HDR036-61	CNPV*4217A**	58MEB060-12	33,400	12.0	14.5
3116370	38HDR036-61	CNPV*4217A**	58MEB080-12	33,400	12.0	14.5
3116371	38HDR036-61	CNPV*4217A**	58MEB080-16	33,400	12.0	14.5
3116365	38HDR036-61	CNPV*4217A**	58MV(B,C)060-14	33,400	12.0	14.5
3116367	38HDR036-61	CNPV*4217A**	58PH*070-16	33,400	12.0	14.5
3116364	38HDR036-61	CNPV*4217A**+TDR		33,400	11.0	13.0
1117696	38HDR036-61	CNPV*4221A**	58CV(A,X)090-16	33,400	11.5	14.5
1117548	38HDR036-61	CNPV*4221A**	58CV(A,X)110-20	33,400	11.5	14.5
3116372	38HDR036-61	CNPV*4221A**	58MEB100-20	33,400	12.0	14.5
1390698	38HDR036-61	CNPV*4221A**	58MV(B,C)060-14	33,400	11.5	14.5
1390706	38HDR036-61	CNPV*4221A**	58MV(B,C)080-14	33,400	11.5	14.0
1390724	38HDR036-61	CNPV*4221A**	58MV(B,C)080-20	33,400	11.5	14.0
1390742	38HDR036-61	CNPV*4221A**	58MV(B,C)100-20	33,400	11.5	14.0
3015502	38HDR036-61	CNPV*4221A**	58PH*090-16	33,400	12.0	14.5
3015503	38HDR036-61	CNPV*4221A**	58PH*110-20	33,400	12.0	14.5
1117614	38HDR036-61	CSPH*3612A**	58CV(A,X)070-12	33,000	11.5	14.0
1117616	38HDR036-61	CSPH*3612A**	58CV(A,X)090-16	33,000	11.5	14.5
1117618	38HDR036-61	CSPH*3612A**	58CV(A,X)110-20	33,000	11.5	14.5
1117620	38HDR036-61	CSPH*3612A**	58CV(A,X)135-22	33,000	11.5	14.5
1117622	38HDR036-61	CSPH*3612A**	58CV(A,X)155-22	33,000	11.5	14.5
3116383	38HDR036-61	CSPH*3612A**	58MEB040-12	33,000	12.0	14.5
3116384	38HDR036-61	CSPH*3612A**	58MEB060-12	33,000	12.0	14.5
3116385	38HDR036-61	CSPH*3612A**	58MEB080-12	33,000	12.0	14.5
3116386	38HDR036-61	CSPH*3612A**	58MEB080-16	33,000	12.0	14.5
3116387	38HDR036-61	CSPH*3612A**	58MEB100-20	33,000	12.0	14.5
1390688	38HDR036-61	CSPH*3612A**	58MV(B,C)060-14	33,000	11.5	14.5
1390712	38HDR036-61	CSPH*3612A**	58MV(B,C)080-14	33,000	11.5	14.0
1390730	38HDR036-61	CSPH*3612A**	58MV(B,C)080-20	33,000	11.5	14.0
1390748	38HDR036-61	CSPH*3612A**	58MV(B,C)100-20	33,000	11.5	14.5
1390760	38HDR036-61	CSPH*3612A**	58MV(B,C)120-20	33,000	11.5	14.5
3015512	38HDR036-61	CSPH*3612A**	58PH*045-08	33,000	11.5	14.0

38HDR

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3015513	38HDR036-61	CSPH*3612A**	58PH*070-16	33,000	11.5	14.0
3015514	38HDR036-61	CSPH*3612A**	58PH*090-16	33,000	12.0	14.5
3015515	38HDR036-61	CSPH*3612A**	58PH*110-20	33,000	12.0	14.5
1117600	38HDR036-61	CSPH*3612A**+TDR		33,000	11.0	13.0
1117638	38HDR036-61	CSPH*4212A**	58CV(A,X)070-12	33,400	11.5	14.0
1117640	38HDR036-61	CSPH*4212A**	58CV(A,X)090-16	33,400	11.5	14.5
1117642	38HDR036-61	CSPH*4212A**	58CV(A,X)110-20	33,400	11.5	14.5
1117644	38HDR036-61	CSPH*4212A**	58CV(A,X)135-22	33,400	11.5	14.5
1117646	38HDR036-61	CSPH*4212A**	58CV(A,X)155-22	33,400	11.5	14.5
3116388	38HDR036-61	CSPH*4212A**	58MEB040-12	33,400	12.0	14.5
3116389	38HDR036-61	CSPH*4212A**	58MEB060-12	33,400	12.0	14.5
3116390	38HDR036-61	CSPH*4212A**	58MEB080-12	33,400	12.0	14.5
3116391	38HDR036-61	CSPH*4212A**	58MEB080-16	33,400	12.0	14.5
3116392	38HDR036-61	CSPH*4212A**	58MEB100-20	33,400	12.0	14.5
1390690	38HDR036-61	CSPH*4212A**	58MV(B,C)060-14	33,400	11.5	14.0
1390714	38HDR036-61	CSPH*4212A**	58MV(B,C)080-14	33,400	11.5	14.0
1390732	38HDR036-61	CSPH*4212A**	58MV(B,C)080-20	33,400	11.5	14.0
1390750	38HDR036-61	CSPH*4212A**	58MV(B,C)100-20	33,400	11.5	14.0
1390762	38HDR036-61	CSPH*4212A**	58MV(B,C)120-20	33,400	11.5	14.0
3015516	38HDR036-61	CSPH*4212A**	58PH*045-08	33,400	11.5	14.0
3015517	38HDR036-61	CSPH*4212A**	58PH*070-16	33,400	11.5	14.0
3015518	38HDR036-61	CSPH*4212A**	58PH*090-16	33,400	12.0	14.5
3015519	38HDR036-61	CSPH*4212A**	58PH*110-20	33,400	12.0	14.5
1117624	38HDR036-61	CSPH*4212A**+TDR		33,400	11.0	13.0
1117658	38HDR036-61	FE4AN(B,F)003+UI		33,000	11.5	14.0
1117660	38HDR036-61	FE4AN(B,F)005+UI		33,400	12.5	15.0
1117662	38HDR036-61	FE4ANB006+UI		33,400	12.5	15.0
1117656	38HDR036-61	FE4ANF002+UI		33,000	11.5	13.5
1117664	38HDR036-61	FF1ENP036		33,000	11.0	13.0
1117668	38HDR036-61	FV4BNB006		33,400	12.5	15.0
1117666	38HDR036-61	FV4BNF002		33,000	11.5	13.5
3404635	38HDR036-61	FV4CNB006		33,400	12.5	15.0
3404634	38HDR036-61	FV4CNF002		33,000	11.5	13.5
1117652	38HDR036-61	FX4CN(B,F)036		33,000	11.5	14.0
1117654	38HDR036-61	FX4CN(B,F)042		33,400	11.5	14.0
1117648	38HDR036-61	FY4ANF036		33,000	11.0	13.0
1117650	38HDR036-61	FY4ANF042		33,400	11.0	13.0
3465144	38HDR048-32	†CNPV*4821A**+TDR		47,000	11.0	13.0
3465807	38HDR048-32	40QAC048-3		45,500	11.5	13.0
3465146	38HDR048-32	CAP**4817A**	58CV(A,X)090-16	46,500	11.5	13.5
3465148	38HDR048-32	CAP**4817A**	58MEB080-16	46,500	11.5	14.0
3465147	38HDR048-32	CAP**4817A**	58PH*070-16	46,500	11.5	13.5
3465145	38HDR048-32	CAP**4817A**+TDR		46,500	11.0	13.0
3465152	38HDR048-32	CAP**4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465155	38HDR048-32	CAP**4821A**	58MEB100-20	46,500	11.5	14.0
3465150	38HDR048-32	CAP**4821A**	58MV(B,C)080-20	46,000	11.5	13.5
3465151	38HDR048-32	CAP**4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465153	38HDR048-32	CAP**4821A**	58PH*090-16	46,500	11.5	14.0
3465154	38HDR048-32	CAP**4821A**	58PH*110-20	46,500	11.5	14.0
3465149	38HDR048-32	CAP**4821A**+TDR		47,000	11.0	13.0
3465158	38HDR048-32	CAP**4824A**	58CV(A,X)135-22	46,500	11.5	13.5
3465159	38HDR048-32	CAP**4824A**	58CV(A,X)155-22	46,500	11.5	13.5
3465161	38HDR048-32	CAP**4824A**	58MEB120-20	46,500	11.5	14.0
3465157	38HDR048-32	CAP**4824A**	58MV(B,C)120-20	46,500	11.5	13.5
3465160	38HDR048-32	CAP**4824A**	58PH*135-20	46,500	11.5	14.0
3465156	38HDR048-32	CAP**4824A**+TDR		47,000	11.0	13.0
3465165	38HDR048-32	CAP**6021A**	58CV(A,X)110-20	47,000	11.5	13.5
3465168	38HDR048-32	CAP**6021A**	58MEB100-20	47,000	12.0	14.5
3465163	38HDR048-32	CAP**6021A**	58MV(B,C)080-20	47,000	11.5	13.5
3465164	38HDR048-32	CAP**6021A**	58MV(B,C)100-20	47,000	11.5	13.5
3465166	38HDR048-32	CAP**6021A**	58PH*090-16	47,000	12.0	14.5
3465167	38HDR048-32	CAP**6021A**	58PH*110-20	47,000	12.0	14.5
3465162	38HDR048-32	CAP**6021A**+TDR		47,500	11.0	13.0
3465171	38HDR048-32	CAP**6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465172	38HDR048-32	CAP**6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465174	38HDR048-32	CAP**6024A**	58MEB120-20	47,000	12.0	14.5
3465170	38HDR048-32	CAP**6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465173	38HDR048-32	CAP**6024A**	58PH*135-20	47,000	12.0	14.5
3465169	38HDR048-32	CAP**6024A**+TDR		47,500	11.0	13.0
3465221	38HDR048-32	CNPF*4818A**+TDR		46,000	11.0	13.0
3465197	38HDR048-32	CNPH*4821A**	58CV(A,X)090-16	46,500	11.5	13.5
3465198	38HDR048-32	CNPH*4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465199	38HDR048-32	CNPH*4821A**	58CV(A,X)135-22	46,500	11.5	13.5
3465200	38HDR048-32	CNPH*4821A**	58CV(A,X)155-22	46,500	11.5	13.5
3465204	38HDR048-32	CNPH*4821A**	58MEB080-16	46,500	11.5	14.0
3465205	38HDR048-32	CNPH*4821A**	58MEB100-20	46,500	11.5	14.0
3465206	38HDR048-32	CNPH*4821A**	58MEB120-20	46,500	11.5	14.0
3465194	38HDR048-32	CNPH*4821A**	58MV(B,C)080-20	46,500	11.5	13.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465195	38HDR048-32	CNPH*4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465196	38HDR048-32	CNPH*4821A**	58MV(B,C)120-20	46,500	11.5	13.5
3465201	38HDR048-32	CNPH*4821A**	58PH*090-16	46,500	11.5	13.5
3465202	38HDR048-32	CNPH*4821A**	58PH*110-20	46,500	11.5	13.5
3465203	38HDR048-32	CNPH*4821A**	58PH*135-20	46,500	11.5	13.5
3465193	38HDR048-32	CNPH*4821A**+TDR		47,000	11.0	13.0
3465211	38HDR048-32	CNPH*6024A**	58CV(A,X)090-16	47,000	11.5	13.5
3465212	38HDR048-32	CNPH*6024A**	58CV(A,X)110-20	47,000	11.5	13.5
3465213	38HDR048-32	CNPH*6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465214	38HDR048-32	CNPH*6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465218	38HDR048-32	CNPH*6024A**	58MEB080-16	47,000	11.5	14.0
3465219	38HDR048-32	CNPH*6024A**	58MEB100-20	47,000	12.0	14.5
3465220	38HDR048-32	CNPH*6024A**	58MEB120-20	47,000	12.0	14.5
3465208	38HDR048-32	CNPH*6024A**	58MV(B,C)080-20	47,000	11.5	13.5
3465209	38HDR048-32	CNPH*6024A**	58MV(B,C)100-20	47,000	11.5	13.5
3465210	38HDR048-32	CNPH*6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465215	38HDR048-32	CNPH*6024A**	58PH*090-16	47,000	12.0	14.5
3465216	38HDR048-32	CNPH*6024A**	58PH*110-20	47,000	12.0	14.5
3465217	38HDR048-32	CNPH*6024A**	58PH*135-20	47,000	12.0	14.5
3465207	38HDR048-32	CNPH*6024A**+TDR		47,500	11.0	13.0
3465177	38HDR048-32	CNPV*4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465180	38HDR048-32	CNPV*4821A**	58MEB100-20	46,500	11.5	13.5
3465175	38HDR048-32	CNPV*4821A**	58MV(B,C)080-20	46,500	11.5	13.5
3465176	38HDR048-32	CNPV*4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465178	38HDR048-32	CNPV*4821A**	58PH*090-16	46,500	11.5	14.0
3465179	38HDR048-32	CNPV*4821A**	58PH*110-20	46,500	11.5	14.0
3465183	38HDR048-32	CNPV*4824A**	58CV(A,X)135-22	46,500	11.5	13.5
3465184	38HDR048-32	CNPV*4824A**	58CV(A,X)155-22	46,500	11.5	13.5
3465186	38HDR048-32	CNPV*4824A**	58MEB120-20	46,500	11.5	14.0
3465182	38HDR048-32	CNPV*4824A**	58MV(B,C)120-20	46,500	11.5	13.5
3465185	38HDR048-32	CNPV*4824A**	58PH*135-20	46,500	11.5	14.0
3465181	38HDR048-32	CNPV*4824A**+TDR		47,000	11.0	13.0
3465189	38HDR048-32	CNPV*6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465190	38HDR048-32	CNPV*6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465192	38HDR048-32	CNPV*6024A**	58MEB120-20	47,000	12.0	14.5
3465188	38HDR048-32	CNPV*6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465191	38HDR048-32	CNPV*6024A**	58PH*135-20	47,000	12.0	14.5
3465187	38HDR048-32	CNPV*6024A**+TDR		47,500	11.0	13.0
3465226	38HDR048-32	CSPH*4812A**	58CV(A,X)090-16	46,500	11.5	13.5
3465227	38HDR048-32	CSPH*4812A**	58CV(A,X)110-20	46,500	11.5	13.5
3465228	38HDR048-32	CSPH*4812A**	58CV(A,X)135-22	46,500	11.5	13.5
3465229	38HDR048-32	CSPH*4812A**	58CV(A,X)155-22	46,500	11.5	13.5
3465233	38HDR048-32	CSPH*4812A**	58MEB080-16	46,500	11.5	14.0
3465234	38HDR048-32	CSPH*4812A**	58MEB100-20	46,500	11.5	14.0
3465235	38HDR048-32	CSPH*4812A**	58MEB120-20	46,500	11.5	14.0
3465223	38HDR048-32	CSPH*4812A**	58MV(B,C)080-20	46,500	11.5	13.5
3465224	38HDR048-32	CSPH*4812A**	58MV(B,C)100-20	46,500	11.5	13.5
3465225	38HDR048-32	CSPH*4812A**	58MV(B,C)120-20	46,500	11.5	13.5
3465230	38HDR048-32	CSPH*4812A**	58PH*090-16	46,500	11.5	14.0
3465231	38HDR048-32	CSPH*4812A**	58PH*110-20	46,500	11.5	14.0
3465232	38HDR048-32	CSPH*4812A**	58PH*135-20	46,500	11.5	14.0
3465222	38HDR048-32	CSPH*4812A**+TDR		47,000	11.0	13.0
3465240	38HDR048-32	CSPH*6012A**	58CV(A,X)090-16	47,000	11.5	13.5
3465241	38HDR048-32	CSPH*6012A**	58CV(A,X)110-20	47,000	11.5	14.0
3465242	38HDR048-32	CSPH*6012A**	58CV(A,X)135-22	47,000	11.5	14.0
3465243	38HDR048-32	CSPH*6012A**	58CV(A,X)155-22	47,000	11.5	14.0
3465247	38HDR048-32	CSPH*6012A**	58MEB080-16	47,000	12.0	14.5
3465248	38HDR048-32	CSPH*6012A**	58MEB100-20	47,000	12.0	14.5
3465249	38HDR048-32	CSPH*6012A**	58MEB120-20	47,000	12.0	14.5
3465237	38HDR048-32	CSPH*6012A**	58MV(B,C)080-20	47,000	11.5	13.5
3465238	38HDR048-32	CSPH*6012A**	58MV(B,C)100-20	47,000	11.5	13.5
3465239	38HDR048-32	CSPH*6012A**	58MV(B,C)120-20	47,000	11.5	13.5
3465244	38HDR048-32	CSPH*6012A**	58PH*090-16	47,000	12.0	14.5
3465245	38HDR048-32	CSPH*6012A**	58PH*110-20	47,000	12.0	14.5
3465246	38HDR048-32	CSPH*6012A**	58PH*135-20	47,000	12.0	14.5
3465236	38HDR048-32	CSPH*6012A**+TDR		47,500	11.0	13.0
3465254	38HDR048-32	FE4AN(B,F)005+UI		47,000	11.5	13.5
3465255	38HDR048-32	FE4ANB006+UI		47,500	11.5	14.0
3465256	38HDR048-32	FV4BN(B,F)005		47,000	11.5	14.0
3465257	38HDR048-32	FV4BNB006		47,500	11.5	14.0
3465252	38HDR048-32	FX4CN(B,F)048		47,000	11.5	13.5
3465253	38HDR048-32	FX4CN(B,F)060		47,500	11.5	14.0
3465251	38HDR048-32	FY4ANB060		47,500	11.0	13.0
3465250	38HDR048-32	FY4ANF048		47,000	11.0	13.0
3465258	38HDR048-52	†CNPV*4821A**+TDR		47,000	11.0	13.0
3465808	38HDR048-52	40QAC048-3		45,500	11.5	13.0
3465260	38HDR048-52	CAP**4817A**	58CV(A,X)090-16	46,500	11.5	13.5
3465262	38HDR048-52	CAP**4817A**	58MEB080-16	46,500	11.5	14.0

See notes on page 26

38HDR

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465261	38HDR048-52	CAP**4817A**	58PH*070-16	46,500	11.5	13.5
3465259	38HDR048-52	CAP**4817A**+TDR		46,500	11.0	13.0
3465266	38HDR048-52	CAP**4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465269	38HDR048-52	CAP**4821A**	58MEB100-20	46,500	11.5	14.0
3465264	38HDR048-52	CAP**4821A**	58MV(B,C)080-20	46,000	11.5	13.5
3465265	38HDR048-52	CAP**4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465267	38HDR048-52	CAP**4821A**	58PH*090-16	46,500	11.5	14.0
3465268	38HDR048-52	CAP**4821A**	58PH*110-20	46,500	11.5	14.0
3465263	38HDR048-52	CAP**4821A**+TDR		47,000	11.0	13.0
3465272	38HDR048-52	CAP**4824A**	58CV(A,X)135-22	46,500	11.5	13.5
3465273	38HDR048-52	CAP**4824A**	58CV(A,X)155-22	46,500	11.5	13.5
3465275	38HDR048-52	CAP**4824A**	58MEB120-20	46,500	11.5	14.0
3465271	38HDR048-52	CAP**4824A**	58MV(B,C)120-20	46,500	11.5	13.5
3465274	38HDR048-52	CAP**4824A**	58PH*135-20	46,500	11.5	14.0
3465270	38HDR048-52	CAP**4824A**+TDR		47,000	11.0	13.0
3465279	38HDR048-52	CAP**6021A**	58CV(A,X)110-20	47,000	11.5	13.5
3465282	38HDR048-52	CAP**6021A**	58MEB100-20	47,000	12.0	14.5
3465277	38HDR048-52	CAP**6021A**	58MV(B,C)080-20	47,000	11.5	13.5
3465278	38HDR048-52	CAP**6021A**	58MV(B,C)100-20	47,000	11.5	13.5
3465280	38HDR048-52	CAP**6021A**	58PH*090-16	47,000	12.0	14.5
3465281	38HDR048-52	CAP**6021A**	58PH*110-20	47,000	12.0	14.5
3465276	38HDR048-52	CAP**6021A**+TDR		47,500	11.0	13.0
3465285	38HDR048-52	CAP**6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465286	38HDR048-52	CAP**6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465288	38HDR048-52	CAP**6024A**	58MEB120-20	47,000	12.0	14.5
3465284	38HDR048-52	CAP**6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465287	38HDR048-52	CAP**6024A**	58PH*135-20	47,000	12.0	14.5
3465283	38HDR048-52	CAP**6024A**+TDR		47,500	11.0	13.0
3465335	38HDR048-52	CNPF*4818A**+TDR		46,000	11.0	13.0
3465311	38HDR048-52	CNPH*4821A**	58CV(A,X)090-16	46,500	11.5	13.5
3465312	38HDR048-52	CNPH*4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465313	38HDR048-52	CNPH*4821A**	58CV(A,X)135-22	46,500	11.5	13.5
3465314	38HDR048-52	CNPH*4821A**	58CV(A,X)155-22	46,500	11.5	13.5
3465318	38HDR048-52	CNPH*4821A**	58MEB080-16	46,500	11.5	14.0
3465319	38HDR048-52	CNPH*4821A**	58MEB100-20	46,500	11.5	14.0
3465320	38HDR048-52	CNPH*4821A**	58MEB120-20	46,500	11.5	14.0
3465308	38HDR048-52	CNPH*4821A**	58MV(B,C)080-20	46,500	11.5	13.5
3465309	38HDR048-52	CNPH*4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465310	38HDR048-52	CNPH*4821A**	58MV(B,C)120-20	46,500	11.5	13.5
3465315	38HDR048-52	CNPH*4821A**	58PH*090-16	46,500	11.5	13.5
3465316	38HDR048-52	CNPH*4821A**	58PH*110-20	46,500	11.5	13.5
3465317	38HDR048-52	CNPH*4821A**	58PH*135-20	46,500	11.5	13.5
3465307	38HDR048-52	CNPH*4821A**+TDR		47,000	11.0	13.0
3465325	38HDR048-52	CNPH*6024A**	58CV(A,X)090-16	47,000	11.5	13.5
3465326	38HDR048-52	CNPH*6024A**	58CV(A,X)110-20	47,000	11.5	13.5
3465327	38HDR048-52	CNPH*6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465328	38HDR048-52	CNPH*6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465332	38HDR048-52	CNPH*6024A**	58MEB080-16	47,000	11.5	14.0
3465333	38HDR048-52	CNPH*6024A**	58MEB100-20	47,000	12.0	14.5
3465334	38HDR048-52	CNPH*6024A**	58MEB120-20	47,000	12.0	14.5
3465322	38HDR048-52	CNPH*6024A**	58MV(B,C)080-20	47,000	11.5	13.5
3465323	38HDR048-52	CNPH*6024A**	58MV(B,C)100-20	47,000	11.5	13.5
3465324	38HDR048-52	CNPH*6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465329	38HDR048-52	CNPH*6024A**	58PH*090-16	47,000	12.0	14.5
3465330	38HDR048-52	CNPH*6024A**	58PH*110-20	47,000	12.0	14.5
3465331	38HDR048-52	CNPH*6024A**	58PH*135-20	47,000	12.0	14.5
3465321	38HDR048-52	CNPH*6024A**+TDR		47,500	11.0	13.0
3465291	38HDR048-52	CNPV*4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465294	38HDR048-52	CNPV*4821A**	58MEB100-20	46,500	11.5	13.5
3465289	38HDR048-52	CNPV*4821A**	58MV(B,C)080-20	46,500	11.5	13.5
3465290	38HDR048-52	CNPV*4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465292	38HDR048-52	CNPV*4821A**	58PH*090-16	46,500	11.5	14.0
3465293	38HDR048-52	CNPV*4821A**	58PH*110-20	46,500	11.5	14.0
3465297	38HDR048-52	CNPV*4824A**	58CV(A,X)135-22	46,500	11.5	13.5
3465298	38HDR048-52	CNPV*4824A**	58CV(A,X)155-22	46,500	11.5	13.5
3465300	38HDR048-52	CNPV*4824A**	58MEB120-20	46,500	11.5	14.0
3465296	38HDR048-52	CNPV*4824A**	58MV(B,C)120-20	46,500	11.5	13.5
3465299	38HDR048-52	CNPV*4824A**	58PH*135-20	46,500	11.5	14.0
3465295	38HDR048-52	CNPV*4824A**+TDR		47,000	11.0	13.0
3465303	38HDR048-52	CNPV*6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465304	38HDR048-52	CNPV*6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465306	38HDR048-52	CNPV*6024A**	58MEB120-20	47,000	12.0	14.5
3465302	38HDR048-52	CNPV*6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465305	38HDR048-52	CNPV*6024A**	58PH*135-20	47,000	12.0	14.5
3465301	38HDR048-52	CNPV*6024A**+TDR		47,500	11.0	13.0
3465340	38HDR048-52	CSPH*4812A**	58CV(A,X)090-16	46,500	11.5	13.5
3465341	38HDR048-52	CSPH*4812A**	58CV(A,X)110-20	46,500	11.5	13.5
3465342	38HDR048-52	CSPH*4812A**	58CV(A,X)135-22	46,500	11.5	13.5
3465343	38HDR048-52	CSPH*4812A**	58CV(A,X)155-22	46,500	11.5	13.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465347	38HDR048-52	CSPH*4812A**	58MEB080-16	46,500	11.5	14.0
3465348	38HDR048-52	CSPH*4812A**	58MEB100-20	46,500	11.5	14.0
3465349	38HDR048-52	CSPH*4812A**	58MEB120-20	46,500	11.5	14.0
3465337	38HDR048-52	CSPH*4812A**	58MV(B,C)080-20	46,500	11.5	13.5
3465338	38HDR048-52	CSPH*4812A**	58MV(B,C)100-20	46,500	11.5	13.5
3465339	38HDR048-52	CSPH*4812A**	58MV(B,C)120-20	46,500	11.5	13.5
3465344	38HDR048-52	CSPH*4812A**	58PH*090-16	46,500	11.5	14.0
3465345	38HDR048-52	CSPH*4812A**	58PH*110-20	46,500	11.5	14.0
3465346	38HDR048-52	CSPH*4812A**	58PH*135-20	46,500	11.5	14.0
3465336	38HDR048-52	CSPH*4812A**+TDR		47,000	11.0	13.0
3465354	38HDR048-52	CSPH*6012A**	58CV(A,X)090-16	47,000	11.5	13.5
3465355	38HDR048-52	CSPH*6012A**	58CV(A,X)110-20	47,000	11.5	14.0
3465356	38HDR048-52	CSPH*6012A**	58CV(A,X)135-22	47,000	11.5	14.0
3465357	38HDR048-52	CSPH*6012A**	58CV(A,X)155-22	47,000	11.5	14.0
3465361	38HDR048-52	CSPH*6012A**	58MEB080-16	47,000	12.0	14.5
3465362	38HDR048-52	CSPH*6012A**	58MEB100-20	47,000	12.0	14.5
3465363	38HDR048-52	CSPH*6012A**	58MEB120-20	47,000	12.0	14.5
3465351	38HDR048-52	CSPH*6012A**	58MV(B,C)080-20	47,000	11.5	13.5
3465352	38HDR048-52	CSPH*6012A**	58MV(B,C)100-20	47,000	11.5	13.5
3465353	38HDR048-52	CSPH*6012A**	58MV(B,C)120-20	47,000	11.5	13.5
3465358	38HDR048-52	CSPH*6012A**	58PH*090-16	47,000	12.0	14.5
3465359	38HDR048-52	CSPH*6012A**	58PH*110-20	47,000	12.0	14.5
3465360	38HDR048-52	CSPH*6012A**	58PH*135-20	47,000	12.0	14.5
3465350	38HDR048-52	CSPH*6012A**+TDR		47,500	11.0	13.0
3465368	38HDR048-52	FE4AN(B,F)005+UI		47,000	11.5	13.5
3465369	38HDR048-52	FE4ANB006+UI		47,500	11.5	14.0
3465370	38HDR048-52	FV4BN(B,F)005		47,000	11.5	14.0
3465371	38HDR048-52	FV4BNB006		47,500	11.5	14.0
3465366	38HDR048-52	FX4CN(B,F)048		47,000	11.5	13.5
3465367	38HDR048-52	FX4CN(B,F)060		47,500	11.5	14.0
3465365	38HDR048-52	FY4ANB060		47,500	11.0	13.0
3465364	38HDR048-52	FY4ANF048		47,000	11.0	13.0
3465372	38HDR048-62	†CNPV*4821A**+TDR		47,000	11.0	13.0
3465809	38HDR048-62	40QAC048-3		45,500	11.5	13.0
3465374	38HDR048-62	CAP**4817A**	58CV(A,X)090-16	46,500	11.5	13.5
3465376	38HDR048-62	CAP**4817A**	58MEB080-16	46,500	11.5	14.0
3465375	38HDR048-62	CAP**4817A**	58PH*070-16	46,500	11.5	13.5
3465373	38HDR048-62	CAP**4817A**+TDR		46,500	11.0	13.0
3465380	38HDR048-62	CAP**4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465383	38HDR048-62	CAP**4821A**	58MEB100-20	46,500	11.5	14.0
3465378	38HDR048-62	CAP**4821A**	58MV(B,C)080-20	46,000	11.5	13.5
3465379	38HDR048-62	CAP**4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465381	38HDR048-62	CAP**4821A**	58PH*090-16	46,500	11.5	14.0
3465382	38HDR048-62	CAP**4821A**	58PH*110-20	46,500	11.5	14.0
3465377	38HDR048-62	CAP**4821A**+TDR		47,000	11.0	13.0
3465386	38HDR048-62	CAP**4824A**	58CV(A,X)135-22	46,500	11.5	13.5
3465387	38HDR048-62	CAP**4824A**	58CV(A,X)155-22	46,500	11.5	13.5
3465389	38HDR048-62	CAP**4824A**	58MEB120-20	46,500	11.5	14.0
3465385	38HDR048-62	CAP**4824A**	58MV(B,C)120-20	46,500	11.5	13.5
3465388	38HDR048-62	CAP**4824A**	58PH*135-20	46,500	11.5	14.0
3465384	38HDR048-62	CAP**4824A**+TDR		47,000	11.0	13.0
3465393	38HDR048-62	CAP**6021A**	58CV(A,X)110-20	47,000	11.5	13.5
3465396	38HDR048-62	CAP**6021A**	58MEB100-20	47,000	12.0	14.5
3465391	38HDR048-62	CAP**6021A**	58MV(B,C)080-20	47,000	11.5	13.5
3465392	38HDR048-62	CAP**6021A**	58MV(B,C)100-20	47,000	11.5	13.5
3465394	38HDR048-62	CAP**6021A**	58PH*090-16	47,000	12.0	14.5
3465395	38HDR048-62	CAP**6021A**	58PH*110-20	47,000	12.0	14.5
3465390	38HDR048-62	CAP**6021A**+TDR		47,500	11.0	13.0
3465399	38HDR048-62	CAP**6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465400	38HDR048-62	CAP**6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465402	38HDR048-62	CAP**6024A**	58MEB120-20	47,000	12.0	14.5
3465398	38HDR048-62	CAP**6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465401	38HDR048-62	CAP**6024A**	58PH*135-20	47,000	12.0	14.5
3465397	38HDR048-62	CAP**6024A**+TDR		47,500	11.0	13.0
3465449	38HDR048-62	CNPF*4818A**+TDR		46,000	11.0	13.0
3465425	38HDR048-62	CNPH*4821A**	58CV(A,X)090-16	46,500	11.5	13.5
3465426	38HDR048-62	CNPH*4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465427	38HDR048-62	CNPH*4821A**	58CV(A,X)135-22	46,500	11.5	13.5
3465428	38HDR048-62	CNPH*4821A**	58CV(A,X)155-22	46,500	11.5	13.5
3465432	38HDR048-62	CNPH*4821A**	58MEB080-16	46,500	11.5	14.0
3465433	38HDR048-62	CNPH*4821A**	58MEB100-20	46,500	11.5	14.0
3465434	38HDR048-62	CNPH*4821A**	58MEB120-20	46,500	11.5	14.0
3465422	38HDR048-62	CNPH*4821A**	58MV(B,C)080-20	46,500	11.5	13.5
3465423	38HDR048-62	CNPH*4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465424	38HDR048-62	CNPH*4821A**	58MV(B,C)120-20	46,500	11.5	13.5
3465429	38HDR048-62	CNPH*4821A**	58PH*090-16	46,500	11.5	13.5
3465430	38HDR048-62	CNPH*4821A**	58PH*110-20	46,500	11.5	13.5
3465431	38HDR048-62	CNPH*4821A**	58PH*135-20	46,500	11.5	13.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465421	38HDR048-62	CNPH*4821A**+TDR		47,000	11.0	13.0
3465439	38HDR048-62	CNPH*6024A**	58CV(A,X)090-16	47,000	11.5	13.5
3465440	38HDR048-62	CNPH*6024A**	58CV(A,X)110-20	47,000	11.5	13.5
3465441	38HDR048-62	CNPH*6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465442	38HDR048-62	CNPH*6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465446	38HDR048-62	CNPH*6024A**	58MEB080-16	47,000	11.5	14.0
3465447	38HDR048-62	CNPH*6024A**	58MEB100-20	47,000	12.0	14.5
3465448	38HDR048-62	CNPH*6024A**	58MEB120-20	47,000	12.0	14.5
3465436	38HDR048-62	CNPH*6024A**	58MV(B,C)080-20	47,000	11.5	13.5
3465437	38HDR048-62	CNPH*6024A**	58MV(B,C)100-20	47,000	11.5	13.5
3465438	38HDR048-62	CNPH*6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465443	38HDR048-62	CNPH*6024A**	58PH*090-16	47,000	12.0	14.5
3465444	38HDR048-62	CNPH*6024A**	58PH*110-20	47,000	12.0	14.5
3465445	38HDR048-62	CNPH*6024A**	58PH*135-20	47,000	12.0	14.5
3465435	38HDR048-62	CNPH*6024A**+TDR		47,500	11.0	13.0
3465405	38HDR048-62	CNPV*4821A**	58CV(A,X)110-20	46,500	11.5	13.5
3465408	38HDR048-62	CNPV*4821A**	58MEB100-20	46,500	11.5	13.5
3465403	38HDR048-62	CNPV*4821A**	58MV(B,C)080-20	46,500	11.5	13.5
3465404	38HDR048-62	CNPV*4821A**	58MV(B,C)100-20	46,500	11.5	13.5
3465406	38HDR048-62	CNPV*4821A**	58PH*090-16	46,500	11.5	14.0
3465407	38HDR048-62	CNPV*4821A**	58PH*110-20	46,500	11.5	14.0
3465411	38HDR048-62	CNPV*4824A**	58CV(A,X)135-22	46,500	11.5	13.5
3465412	38HDR048-62	CNPV*4824A**	58CV(A,X)155-22	46,500	11.5	13.5
3465414	38HDR048-62	CNPV*4824A**	58MEB120-20	46,500	11.5	14.0
3465410	38HDR048-62	CNPV*4824A**	58MV(B,C)120-20	46,500	11.5	13.5
3465413	38HDR048-62	CNPV*4824A**	58PH*135-20	46,500	11.5	14.0
3465409	38HDR048-62	CNPV*4824A**+TDR		47,000	11.0	13.0
3465417	38HDR048-62	CNPV*6024A**	58CV(A,X)135-22	47,000	11.5	13.5
3465418	38HDR048-62	CNPV*6024A**	58CV(A,X)155-22	47,000	11.5	14.0
3465420	38HDR048-62	CNPV*6024A**	58MEB120-20	47,000	12.0	14.5
3465416	38HDR048-62	CNPV*6024A**	58MV(B,C)120-20	47,000	11.5	13.5
3465419	38HDR048-62	CNPV*6024A**	58PH*135-20	47,000	12.0	14.5
3465415	38HDR048-62	CNPV*6024A**+TDR		47,500	11.0	13.0
3465454	38HDR048-62	CSPH*4812A**	58CV(A,X)090-16	46,500	11.5	13.5
3465455	38HDR048-62	CSPH*4812A**	58CV(A,X)110-20	46,500	11.5	13.5
3465456	38HDR048-62	CSPH*4812A**	58CV(A,X)135-22	46,500	11.5	13.5
3465457	38HDR048-62	CSPH*4812A**	58CV(A,X)155-22	46,500	11.5	13.5
3465461	38HDR048-62	CSPH*4812A**	58MEB080-16	46,500	11.5	14.0
3465462	38HDR048-62	CSPH*4812A**	58MEB100-20	46,500	11.5	14.0
3465463	38HDR048-62	CSPH*4812A**	58MEB120-20	46,500	11.5	14.0
3465451	38HDR048-62	CSPH*4812A**	58MV(B,C)080-20	46,500	11.5	13.5
3465452	38HDR048-62	CSPH*4812A**	58MV(B,C)100-20	46,500	11.5	13.5
3465453	38HDR048-62	CSPH*4812A**	58MV(B,C)120-20	46,500	11.5	13.5
3465458	38HDR048-62	CSPH*4812A**	58PH*090-16	46,500	11.5	14.0
3465459	38HDR048-62	CSPH*4812A**	58PH*110-20	46,500	11.5	14.0
3465460	38HDR048-62	CSPH*4812A**	58PH*135-20	46,500	11.5	14.0
3465450	38HDR048-62	CSPH*4812A**+TDR		47,000	11.0	13.0
3465468	38HDR048-62	CSPH*6012A**	58CV(A,X)090-16	47,000	11.5	13.5
3465469	38HDR048-62	CSPH*6012A**	58CV(A,X)110-20	47,000	11.5	14.0
3465470	38HDR048-62	CSPH*6012A**	58CV(A,X)135-22	47,000	11.5	14.0
3465471	38HDR048-62	CSPH*6012A**	58CV(A,X)155-22	47,000	11.5	14.0
3465475	38HDR048-62	CSPH*6012A**	58MEB080-16	47,000	12.0	14.5
3465476	38HDR048-62	CSPH*6012A**	58MEB100-20	47,000	12.0	14.5
3465477	38HDR048-62	CSPH*6012A**	58MEB120-20	47,000	12.0	14.5
3465465	38HDR048-62	CSPH*6012A**	58MV(B,C)080-20	47,000	11.5	13.5
3465466	38HDR048-62	CSPH*6012A**	58MV(B,C)100-20	47,000	11.5	13.5
3465467	38HDR048-62	CSPH*6012A**	58MV(B,C)120-20	47,000	11.5	13.5
3465472	38HDR048-62	CSPH*6012A**	58PH*090-16	47,000	12.0	14.5
3465473	38HDR048-62	CSPH*6012A**	58PH*110-20	47,000	12.0	14.5
3465474	38HDR048-62	CSPH*6012A**	58PH*135-20	47,000	12.0	14.5
3465464	38HDR048-62	CSPH*6012A**+TDR		47,500	11.0	13.0
3465482	38HDR048-62	FE4AN(B,F)005+UI		47,000	11.5	13.5
3465483	38HDR048-62	FE4ANB006+UI		47,500	11.5	14.0
3465484	38HDR048-62	FV4BN(B,F)005		47,000	11.5	14.0
3465485	38HDR048-62	FV4BNB006		47,500	11.5	14.0
3465480	38HDR048-62	FX4CN(B,F)048		47,000	11.5	13.5
3465481	38HDR048-62	FX4CN(B,F)060		47,500	11.5	14.0
3465479	38HDR048-62	FY4ANB060		47,500	11.0	13.0
3465478	38HDR048-62	FY4ANF048		47,000	11.0	13.0
3465024	38HDR060-32	†CNPV*6024A**+TDR		57,000	11.0	13.0
3465810	38HDR060-32	40QAC060-3		56,000	11.0	13.0
3465026	38HDR060-32	CAP**6021A**	58CV(A,X)110-20	56,000	11.0	13.2
3465029	38HDR060-32	CAP**6021A**	58MEB100-20	56,000	11.0	13.5
3465027	38HDR060-32	CAP**6021A**	58PH*090-16	56,000	11.0	13.2
3465028	38HDR060-32	CAP**6021A**	58PH*110-20	56,000	11.0	13.5
3465025	38HDR060-32	CAP**6021A**+TDR		57,000	11.0	13.0
3465031	38HDR060-32	CAP**6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465032	38HDR060-32	CAP**6024A**	58CV(A,X)155-22	56,000	11.0	13.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465034	38HDR060-32	CAP**6024A**	58MEB120-20	56,000	11.0	13.5
3465033	38HDR060-32	CAP**6024A**	58PH*135-20	56,000	11.0	13.5
3465030	38HDR060-32	CAP**6024A**+TDR		57,000	11.0	13.0
3465040	38HDR060-32	CNPH*6024A**	58CV(A,X)110-20	56,000	11.0	13.2
3465041	38HDR060-32	CNPH*6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465042	38HDR060-32	CNPH*6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465046	38HDR060-32	CNPH*6024A**	58MEB080-16	56,000	11.0	13.2
3465047	38HDR060-32	CNPH*6024A**	58MEB100-20	56,000	11.0	13.5
3465048	38HDR060-32	CNPH*6024A**	58MEB120-20	56,000	11.0	13.5
3465043	38HDR060-32	CNPH*6024A**	58PH*090-16	56,000	11.0	13.2
3465044	38HDR060-32	CNPH*6024A**	58PH*110-20	56,000	11.0	13.5
3465045	38HDR060-32	CNPH*6024A**	58PH*135-20	56,000	11.0	13.5
3465039	38HDR060-32	CNPH*6024A**+TDR		57,000	11.0	13.0
3465035	38HDR060-32	CNPV*6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465036	38HDR060-32	CNPV*6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465038	38HDR060-32	CNPV*6024A**	58MEB120-20	56,000	11.0	13.5
3465037	38HDR060-32	CNPV*6024A**	58PH*135-20	56,000	11.0	13.5
3465051	38HDR060-32	CSPH*6012A**	58CV(A,X)110-20	56,000	11.0	13.5
3465052	38HDR060-32	CSPH*6012A**	58CV(A,X)135-22	56,000	11.0	13.5
3465053	38HDR060-32	CSPH*6012A**	58CV(A,X)155-22	56,000	11.0	13.5
3465057	38HDR060-32	CSPH*6012A**	58MEB080-16	56,000	11.0	13.2
3465058	38HDR060-32	CSPH*6012A**	58MEB100-20	56,000	11.0	13.5
3465059	38HDR060-32	CSPH*6012A**	58MEB120-20	56,000	11.0	13.5
3465050	38HDR060-32	CSPH*6012A**	58MV(B,C)120-20	56,000	11.0	13.2
3465054	38HDR060-32	CSPH*6012A**	58PH*090-16	56,000	11.0	13.5
3465055	38HDR060-32	CSPH*6012A**	58PH*110-20	56,000	11.0	13.5
3465056	38HDR060-32	CSPH*6012A**	58PH*135-20	56,000	11.0	13.5
3465049	38HDR060-32	CSPH*6012A**+TDR		57,000	11.0	13.0
3465062	38HDR060-32	FE4ANB006+UI		57,500	11.0	13.5
3465063	38HDR060-32	FV4BNB006		57,500	11.0	13.5
3465061	38HDR060-32	FX4CN(B,F)060		57,500	11.0	13.5
3465060	38HDR060-32	FY4ANB060		57,000	11.0	13.0
3465064	38HDR060-52	†CNPV*6024A**+TDR		57,000	11.0	13.0
3465811	38HDR060-52	40QAC060-3		56,000	11.0	13.0
3465066	38HDR060-52	CAP**6021A**	58CV(A,X)110-20	56,000	11.0	13.2
3465069	38HDR060-52	CAP**6021A**	58MEB100-20	56,000	11.0	13.5
3465067	38HDR060-52	CAP**6021A**	58PH*090-16	56,000	11.0	13.2
3465068	38HDR060-52	CAP**6021A**	58PH*110-20	56,000	11.0	13.5
3465065	38HDR060-52	CAP**6021A**+TDR		57,000	11.0	13.0
3465071	38HDR060-52	CAP**6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465072	38HDR060-52	CAP**6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465074	38HDR060-52	CAP**6024A**	58MEB120-20	56,000	11.0	13.5
3465073	38HDR060-52	CAP**6024A**	58PH*135-20	56,000	11.0	13.5
3465070	38HDR060-52	CAP**6024A**+TDR		57,000	11.0	13.0
3465080	38HDR060-52	CNPH*6024A**	58CV(A,X)110-20	56,000	11.0	13.2
3465081	38HDR060-52	CNPH*6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465082	38HDR060-52	CNPH*6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465086	38HDR060-52	CNPH*6024A**	58MEB080-16	56,000	11.0	13.2
3465087	38HDR060-52	CNPH*6024A**	58MEB100-20	56,000	11.0	13.5
3465088	38HDR060-52	CNPH*6024A**	58MEB120-20	56,000	11.0	13.5
3465083	38HDR060-52	CNPH*6024A**	58PH*090-16	56,000	11.0	13.2
3465084	38HDR060-52	CNPH*6024A**	58PH*110-20	56,000	11.0	13.5
3465085	38HDR060-52	CNPH*6024A**	58PH*135-20	56,000	11.0	13.5
3465079	38HDR060-52	CNPH*6024A**+TDR		57,000	11.0	13.0
3465075	38HDR060-52	CNPV*6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465076	38HDR060-52	CNPV*6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465078	38HDR060-52	CNPV*6024A**	58MEB120-20	56,000	11.0	13.5
3465077	38HDR060-52	CNPV*6024A**	58PH*135-20	56,000	11.0	13.5
3465091	38HDR060-52	CSPH*6012A**	58CV(A,X)110-20	56,000	11.0	13.5
3465092	38HDR060-52	CSPH*6012A**	58CV(A,X)135-22	56,000	11.0	13.5
3465093	38HDR060-52	CSPH*6012A**	58CV(A,X)155-22	56,000	11.0	13.5
3465097	38HDR060-52	CSPH*6012A**	58MEB080-16	56,000	11.0	13.2
3465098	38HDR060-52	CSPH*6012A**	58MEB100-20	56,000	11.0	13.5
3465099	38HDR060-52	CSPH*6012A**	58MEB120-20	56,000	11.0	13.5
3465090	38HDR060-52	CSPH*6012A**	58MV(B,C)120-20	56,000	11.0	13.2
3465094	38HDR060-52	CSPH*6012A**	58PH*090-16	56,000	11.0	13.5
3465095	38HDR060-52	CSPH*6012A**	58PH*110-20	56,000	11.0	13.5
3465096	38HDR060-52	CSPH*6012A**	58PH*135-20	56,000	11.0	13.5
3465089	38HDR060-52	CSPH*6012A**+TDR		57,000	11.0	13.0
3465102	38HDR060-52	FE4ANB006+UI		57,500	11.0	13.5
3465103	38HDR060-52	FV4BNB006		57,500	11.0	13.5
3465101	38HDR060-52	FX4CN(B,F)060		57,500	11.0	13.5
3465100	38HDR060-52	FY4ANB060		57,000	11.0	13.0
3465104	38HDR060-62	†CNPV*6024A**+TDR		57,000	11.0	13.0
3465812	38HDR060-62	40QAC060-3		56,000	11.0	13.0
3465106	38HDR060-62	CAP**6021A**	58CV(A,X)110-20	56,000	11.0	13.2
3465109	38HDR060-62	CAP**6021A**	58MEB100-20	56,000	11.0	13.5

See notes on page 26

COMBINATION RATINGS (CONT.)

ARI Ref. No.	Model Number	Indoor Model	Furnace Model	Capacity	EER	SEER
3465107	38HDR060-62	CAP**6021A**	58PH*090-16	56,000	11.0	13.2
3465108	38HDR060-62	CAP**6021A**	58PH*110-20	56,000	11.0	13.5
3465105	38HDR060-62	CAP**6021A**+TDR		57,000	11.0	13.0
3465111	38HDR060-62	CAP**6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465112	38HDR060-62	CAP**6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465114	38HDR060-62	CAP**6024A**	58MEB120-20	56,000	11.0	13.5
3465113	38HDR060-62	CAP**6024A**	58PH*135-20	56,000	11.0	13.5
3465110	38HDR060-62	CAP**6024A**+TDR		57,000	11.0	13.0
3465120	38HDR060-62	CNPH*6024A**	58CV(A,X)110-20	56,000	11.0	13.2
3465121	38HDR060-62	CNPH*6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465122	38HDR060-62	CNPH*6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465126	38HDR060-62	CNPH*6024A**	58MEB080-16	56,000	11.0	13.2
3465127	38HDR060-62	CNPH*6024A**	58MEB100-20	56,000	11.0	13.5
3465128	38HDR060-62	CNPH*6024A**	58MEB120-20	56,000	11.0	13.5
3465123	38HDR060-62	CNPH*6024A**	58PH*090-16	56,000	11.0	13.2
3465124	38HDR060-62	CNPH*6024A**	58PH*110-20	56,000	11.0	13.5
3465125	38HDR060-62	CNPH*6024A**	58PH*135-20	56,000	11.0	13.5
3465119	38HDR060-62	CNPH*6024A**+TDR		57,000	11.0	13.0
3465115	38HDR060-62	CNPV*6024A**	58CV(A,X)135-22	56,000	11.0	13.5
3465116	38HDR060-62	CNPV*6024A**	58CV(A,X)155-22	56,000	11.0	13.5
3465118	38HDR060-62	CNPV*6024A**	58MEB120-20	56,000	11.0	13.5
3465117	38HDR060-62	CNPV*6024A**	58PH*135-20	56,000	11.0	13.5
3465131	38HDR060-62	CSPH*6012A**	58CV(A,X)110-20	56,000	11.0	13.5
3465132	38HDR060-62	CSPH*6012A**	58CV(A,X)135-22	56,000	11.0	13.5
3465133	38HDR060-62	CSPH*6012A**	58CV(A,X)155-22	56,000	11.0	13.5
3465137	38HDR060-62	CSPH*6012A**	58MEB080-16	56,000	11.0	13.2
3465138	38HDR060-62	CSPH*6012A**	58MEB100-20	56,000	11.0	13.5
3465139	38HDR060-62	CSPH*6012A**	58MEB120-20	56,000	11.0	13.5
3465130	38HDR060-62	CSPH*6012A**	58MV(B,C)120-20	56,000	11.0	13.2
3465134	38HDR060-62	CSPH*6012A**	58PH*090-16	56,000	11.0	13.5
3465135	38HDR060-62	CSPH*6012A**	58PH*110-20	56,000	11.0	13.5
3465136	38HDR060-62	CSPH*6012A**	58PH*135-20	56,000	11.0	13.5
3465129	38HDR060-62	CSPH*6012A**+TDR		57,000	11.0	13.0
3465142	38HDR060-62	FE4ANB006+UI		57,500	11.0	13.5
3465143	38HDR060-62	FV4BNB006		57,500	11.0	13.5
3465141	38HDR060-62	FX4CN(B,F)060		57,500	11.0	13.5
3465140	38HDR060-62	FY4ANB060		57,000	11.0	13.0

† Tested combination

EER — Energy Efficiency Ratio

SEER — Seasonal Energy Efficiency Ratio

TDR — Time-Delay Relay. In most cases, only 1 method should be used to achieve TDR function. Using more than 1 method in a system may cause degradation in performance. Use either the accessory Time-Delay Relay KAATD0101TDR or a furnace equipped with TDR. Most Carrier furnaces are equipped with TDR.

TXV — Thermostatic Expansion Valve

NOTES:

1. Ratings are net values reflecting the effects of circulating fan motor heat. Supplemental electric heat is not included.
2. Tested outdoor/indoor combinations have been tested in accordance with DOE test procedures for central air conditioners. Ratings for other combinations are determined under DOE computer simulation procedures.
3. Determine actual CFM values obtainable for your system by referring to fan performance data in fan coil or furnace coil literature.
4. Do not apply with capillary tube coils as performance and reliability are significantly affected.

DETAILED COOLING CAPACITIES*

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																							
		75 (23.9)				85 (29.4)				95 (35)				105 (40.6)				115 (46.1)				125 (51.7)			
		Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**			
Total	Sens†	Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†				
525	72 (22.2)	20.28	9.40	1.22	19.31	9.07	1.36	18.30	8.73	1.52	17.26	8.38	1.69	16.14	8.01	1.87	14.90	7.61	2.07						
	67 (19.4)	18.53	11.50	1.22	17.65	11.17	1.36	16.72	10.82	1.52	15.76	10.47	1.69	14.72	10.09	1.87	13.59	9.69	2.07						
	62 (16.7)	16.93	13.58	1.23	16.13	13.24	1.37	15.29	12.89	1.52	14.43	12.52	1.69	13.57	13.57	1.87	12.71	12.71	2.07						
	57 (13.9)	16.85	16.35	1.23	15.72	15.72	1.37	15.05	15.05	1.52	14.34	14.34	1.69	13.57	13.57	1.87	12.71	12.71	2.07						
	72 (22.2)	20.65	9.87	1.25	19.63	9.53	1.39	18.59	9.18	1.54	17.50	8.83	1.71	16.34	8.46	1.90	15.05	8.05	2.10						
600	67 (19.4)	18.90	12.25	1.25	17.97	11.91	1.39	17.00	11.56	1.55	16.00	11.20	1.72	14.93	10.82	1.90	13.75	10.41	2.10						
	62 (16.7)	17.33	14.61	1.25	16.51	14.26	1.39	15.67	15.61	1.55	14.91	14.91	1.72	14.08	14.08	1.90	13.16	13.16	2.10						
	57 (13.9)	17.07	17.07	1.25	16.39	16.39	1.39	15.67	15.67	1.55	14.91	14.91	1.72	14.08	14.08	1.90	13.16	13.16	2.10						
	72 (22.2)	20.91	10.30	1.27	19.86	9.96	1.41	18.78	9.61	1.57	17.67	9.26	1.74	16.47	8.88	1.93	15.15	8.46	2.13						
	67 (19.4)	19.16	12.97	1.27	18.20	12.62	1.42	17.20	12.27	1.57	16.18	11.90	1.74	15.07	11.52	1.93	13.87	11.09	2.13						
675	62 (16.7)	17.70	17.52	1.28	16.94	16.94	1.42	16.17	16.17	1.57	15.37	15.37	1.74	14.49	14.49	1.93	13.52	13.52	2.13						
	57 (13.9)	17.67	17.67	1.28	16.94	16.94	1.42	16.17	16.17	1.57	15.37	15.37	1.74	14.49	14.49	1.93	13.52	13.52	2.13						

COOLING INDOOR MODEL	CAPACITY	POWER	FURNACE MODEL	CAPACITY	POWER	FURNACE MODEL
*CNPV*1814A**	1.00	1.00		1.02	0.98	58MV(B.C)080-14
40AC(Q)024-3	1.06	1.01		1.02	0.98	58MV(B.C)040-14
CAP**1814A**	1.00	1.01		1.02	0.98	58MV(B.C)040-14
CAP**2414A**	1.02	1.02		1.02	0.10	58PH*045-08
CNPV*2414A**	1.02	1.02		1.02	0.94	58PH*045-08
CNPV*2417A**	1.02	1.02		1.02	0.94	58PH*045-08
CNPV*2414A**	1.02	1.02		1.02	0.96	58PH*045-08
CNPV*2417A**	1.02	1.02		1.02	0.94	58PH*045-08
CSPH*2412A**	1.02	1.02		1.02	0.94	58PH*045-08
FE4ANF002	1.02	0.98		1.02	0.94	58PH*045-08
FF1ENP018	1.00	1.05				
FF1ENP024	1.02	1.07				
FV4BNF002	1.02	0.99				
FX4CNF018	1.00	0.96				
FX4CNF024	1.02	0.98				
FY4ANF018	1.00	1.05				
FY4ANF024	1.02	1.07				
CAP**1814A**	1.00	0.96	58CV(A.X)070-12			
CAP**2414A**	1.02	0.98	58CV(A.X)070-12			
CNPV*2417A**	1.02	0.98	58CV(A.X)070-12			
CNPV*1814A**	0.10	0.10	58CV(A.X)070-12			
CNPV*2414A**	1.02	0.98	58CV(A.X)070-12			
CSPH*2412A**	1.02	0.98	58CV(A.X)070-12			
CAP**2417A**	1.02	0.98	58CV(A.X)090-16			
CNPV*2417A**	1.02	0.98	58CV(A.X)090-16			
CNPV*2412A**	1.02	0.98	58CV(A.X)090-16			
CAP**2417A**	1.02	0.94	58MEB040-12			
CNPV*2417A**	1.02	0.94	58MEB040-12			
CSPH*2412A**	1.02	0.94	58MEB040-12			
CAP**2417A**	1.02	0.94	58MEB060-12			
CNPV*2417A**	1.02	0.94	58MEB060-12			
CSPH*2412A**	1.02	0.94	58MEB060-12			
CAP**2417A**	1.02	0.98	58MV(B.C)060-14			
CNPV*2417A**	1.02	0.98	58MV(B.C)060-14			
CNPV*2417A**	1.02	0.98	58MV(B.C)060-14			
CSPH*2412A**	1.02	0.98	58MV(B.C)060-14			
CNPV*2417A**	1.02	0.98	58MV(B.C)060-14			

See notes on pg. 34

See notes on pg. 34

DETAILED COOLING CAPACITIES* (CONT.)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
CFM	EWB ° F (° C)	75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
		Capacity MBtu/h† Total	Sens†	Total System KW**	Capacity MBtu/h† Total	Sens†	Total System KW**	Capacity MBtu/h† Total	Sens†	Total System KW**	Capacity MBtu/h† Total	Sens†	Total System KW**	Capacity MBtu/h† Total	Sens†	Total System KW**			
		38HDR030 Outdoor Section With CNPV*3014A** Indoor Section																	
	72 (22.2)	33.74	16.03	2.06	32.29	15.52	2.29	30.76	14.99	2.54	29.12	14.43	2.81	27.36	13.84	3.11	25.42	13.19	3.44
875	67 (19.4)	30.65	19.58	2.06	29.32	19.06	2.29	27.90	18.51	2.54	26.39	17.94	2.81	24.76	17.34	3.11	22.97	16.69	3.43
	62 (16.7)	28.07	23.01	2.07	26.73	22.59	2.29	25.47	22.03	2.54	24.10	21.45	2.81	22.76	22.72	3.11	21.45	21.45	3.43
	57 (13.9)	27.14	27.14	2.07	26.16	26.16	2.29	25.11	25.11	2.53	24.01	24.01	2.80	22.78	22.78	3.11	21.43	21.43	3.43
	52 (22.2)	34.29	16.79	2.11	32.87	16.29	2.34	31.28	15.69	2.58	29.58	15.18	2.86	27.57	14.54	3.17	25.64	13.91	3.49
	47 (19.4)	31.27	20.81	2.11	29.84	20.29	2.34	28.40	19.75	2.58	26.82	19.17	2.86	24.99	18.52	3.16	23.22	17.87	3.49
1000	62 (16.7)	28.72	24.92	2.11	27.38	24.26	2.34	26.11	26.11	2.58	24.94	24.94	2.85	23.54	23.54	3.16	22.22	22.22	3.48
	57 (13.9)	28.28	28.28	2.11	27.23	27.23	2.34	26.13	26.13	2.58	24.94	24.94	2.85	23.54	23.54	3.16	22.22	22.22	3.48
	52 (22.2)	34.76	17.52	2.16	33.30	17.00	2.39	31.65	16.46	2.63	29.90	15.89	2.91	28.03	15.27	3.21	25.95	14.60	3.53
	47 (19.4)	31.86	21.48	2.16	30.25	21.46	2.38	28.76	20.92	2.63	27.14	20.32	2.90	25.39	19.69	3.21	23.44	18.96	3.54
	42 (16.7)	29.27	29.04	2.16	28.12	28.12	2.38	26.98	26.98	2.63	24.35	25.71	2.90	24.35	24.35	3.21	22.84	22.84	3.53
1125	57 (13.9)	29.23	29.23	2.16	28.13	28.13	2.38	26.99	26.99	2.63	25.71	25.71	2.90	24.23	24.23	3.21	22.85	22.85	3.53

COOLING INDOOR MODEL					FURNACE MODEL				
	CAPACITY	POWER				CAPACITY	POWER		
* CNPV*3014A**	1.00	1.00				1.02	0.98		58CV(A.X)090-16
CAP**3014A**	1.00	1.00				1.02	0.98		58CV(A.X)110-20
CAP**3017A**	1.00	1.00				1.00	0.96		58CV(A.X)110-20
CAP**3614A**	1.02	1.02				1.02	0.98		58CV(A.X)110-20
CAP**3617A**	1.02	1.02				1.02	0.98		58CV(A.X)110-20
CAP**3621A**	1.02	1.02				1.00	0.96		58CV(A.X)110-20
CNPF*3618A**	1.02	1.02				1.02	0.98		58CV(A.X)110-20
CNPH*3017A**	1.00	1.00				1.00	0.96		58CV(A.X)135-22
CNPH*3617A**	1.02	1.02				1.02	0.98		58CV(A.X)135-22
CNPNV*3017A**	1.00	1.00				1.00	0.96		58CV(A.X)135-22
CNPNV*3617A**	1.02	1.02				1.02	0.98		58CV(A.X)135-22
CNPNV*3621A**	1.02	1.02				1.00	0.96		58CV(A.X)155-22
CSPH*3012A**	1.00	1.00				1.02	0.98		58CV(A.X)155-22
CSPH*3612A**	1.02	1.02				1.00	0.96		58CV(A.X)155-22
40ACQ(O)036-3	1.04	1.06				1.02	0.98		58CV(A.X)155-22
FE4AN(B.F)003	1.02	0.98				1.00	0.92		58MEB040-12
FE4AN(B.F)005	1.04	0.91				1.02	0.94		58MEB040-12
FE4ANF002	1.02	0.98				1.00	0.92		58MEB040-12
FE5ANF004	1.00	0.98				1.02	0.94		58MEB040-12
FF1ENP030	1.02	1.02				1.00	0.92		58MEB040-12
FF1ENP036	1.02	1.02				1.02	0.94		58MEB040-12
FV4BN(B.F)003	1.03	0.98				1.00	0.92		58MEB040-12
FV4BN(B.F)005	1.04	0.99				1.02	0.94		58MEB040-12
FV4BNF002	1.02	0.98				1.00	0.92		58MEB060-12
FX4CN(B.F)036	1.02	0.98				1.02	0.94		58MEB060-12
FX4CNF030	1.00	0.96				1.02	0.92		58MEB060-12
FY4ANF030	1.00	0.96				1.00	0.94		58MEB060-12
FY4ANF036	1.02	1.02				1.00	0.92		58MEB060-12
CAP**3014A**	1.00	0.96				1.02	0.94		58MEB060-12
CAP**3614A**	1.02	0.98				1.00	0.92		58MEB060-12
CNPH*3017A**	1.00	0.96				1.02	0.94		58MEB060-12
CNPH*3617A**	1.02	0.98				1.00	0.92		58MEB060-12
CNPNV*3014A**	1.02	0.98				1.02	0.94		58MEB060-12
CSPH*3012A**	1.00	0.96				1.00	0.92		58MEB080-12
CSPH*3612A**	1.02	0.98				1.02	0.94		58MEB080-12
CAP**3017A**	1.00	0.96				1.00	0.92		58MEB080-12
CAP**3617A**	1.02	0.98				1.02	0.94		58MEB080-12
CNPH*3017A**	1.00	0.96				1.00	0.92		58MEB080-12
CNPH*3617A**	1.02	0.98				1.02	0.94		58MEB080-12
CNPNV*3017A**	1.00	0.96				1.00	0.92		58MEB080-12
CNPNV*3617A**	1.02	0.98				1.02	0.94		58MEB080-12
CAP**3017A**	1.00	0.96				1.02	0.94		58MEB080-12
CAP**3617A**	1.02	0.98				1.00	0.92		58MEB080-12
CNPH*3017A**	1.00	0.96				1.00	0.92		58MEB080-12
CNPH*3617A**	1.02	0.98				1.02	0.94		58MEB080-12
CNPNV*3017A**	1.00	0.96				1.00	0.92		58MEB080-12
CNPNV*3617A**	1.02	0.98				1.02	0.94		58MEB080-12

38HDR

DETAILED COOLING CAPACITIES* (CONT.)

38HDR030 Outdoor Section With CNPV*3014A** Indoor Section

COOLING INDOOR MODEL	CAPACITY	POWER	FURNACE MODEL
CNPV*3017A**	1.00	0.96	58PH*070-16
CNPV*3617A**	1.02	0.94	58PH*070-16
CSPH*3012A**	1.00	0.96	58PH*070-16
CSPH*3612A**	1.02	0.94	58PH*070-16
CAP**3621A*	1.02	0.94	58PH*090-16
CNPV*3017A**	1.00	0.96	58PH*090-16
CNPV*3621A**	1.02	0.94	58PH*090-16
CSPH*3012A**	1.00	0.96	58PH*090-16
CSPH*3612A**	1.02	0.94	58PH*090-16

See notes on pg. 34

DETAILED COOLING CAPACITIES* (CONT.)

CONDENSER ENTERING AIR TEMPERATURES °F (°C)																			
EVAPORATOR AIR		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	EWB °F (°C)	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**
		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†	
38HDR036 Outdoor Section With CNPV*4221A** Indoor Section																			
1050	72 (22.2)	39.85	18.85	2.42	38.03	18.23	2.68	38.08	17.58	2.98	33.99	16.89	3.30	31.72	16.14	3.65	29.20	15.33	4.03
	67 (19.4)	36.33	23.19	2.42	34.67	22.57	2.68	32.91	21.91	2.98	31.02	21.23	3.30	28.99	20.49	3.65	26.73	19.69	4.04
	62 (16.7)	33.23	27.51	2.42	31.75	26.88	2.68	30.20	26.20	2.98	28.60	26.45	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	57 (13.9)	32.46	32.46	2.42	31.26	31.26	2.68	29.98	29.98	2.98	28.59	28.59	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	72 (22.2)	40.51	19.77	2.48	38.61	19.14	2.74	36.57	18.47	3.04	34.40	17.77	3.36	32.04	17.01	3.71	29.42	16.18	4.09
1200	67 (19.4)	36.97	24.67	2.48	35.23	24.04	2.74	33.40	23.38	3.04	31.45	22.68	3.36	29.33	21.93	3.71	27.00	21.10	4.09
	62 (16.7)	34.01	29.52	2.48	32.53	32.23	2.74	31.11	31.11	3.04	29.61	29.61	3.36	27.97	27.97	3.71	26.12	26.12	4.09
	57 (13.9)	33.78	33.78	2.48	32.49	32.49	2.74	31.11	31.11	3.04	29.62	29.62	3.36	27.97	27.97	3.71	26.12	26.12	4.09
	72 (22.2)	40.99	20.64	2.54	39.02	19.99	2.80	36.91	19.31	3.09	34.67	18.60	3.42	32.24	17.83	3.77	29.54	16.99	4.15
	67 (19.4)	37.43	26.09	2.54	35.65	25.45	2.80	33.76	24.78	3.10	31.75	24.06	3.42	29.58	23.29	3.77	27.20	22.42	4.15
1350	62 (16.7)	34.86	34.86	2.54	33.49	33.49	2.80	32.02	32.02	3.10	30.44	30.44	3.42	28.70	28.70	3.77	26.73	26.73	4.15
	57 (13.9)	34.86	34.86	2.54	33.49	33.49	2.80	32.03	32.03	3.10	30.44	30.44	3.42	28.70	28.70	3.77	26.73	26.73	4.15

CONDENSER ENTERING AIR TEMPERATURES °F (°C)																			
EVAPORATOR AIR		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	EWB °F (°C)	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**
		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†	
38HDR036 Outdoor Section With CNPV*4221A** Indoor Section																			
1050	72 (22.2)	39.85	18.85	2.42	38.03	18.23	2.68	38.08	17.58	2.98	33.99	16.89	3.30	31.72	16.14	3.65	29.20	15.33	4.03
	67 (19.4)	36.33	23.19	2.42	34.67	22.57	2.68	32.91	21.91	2.98	31.02	21.23	3.30	28.99	20.49	3.65	26.73	19.69	4.04
	62 (16.7)	33.23	27.51	2.42	31.75	26.88	2.68	30.20	26.20	2.98	28.60	26.45	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	57 (13.9)	32.46	32.46	2.42	31.26	31.26	2.68	29.98	29.98	2.98	28.59	28.59	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	72 (22.2)	40.51	19.77	2.48	38.61	19.14	2.74	36.57	18.47	3.04	34.40	17.77	3.36	32.04	17.01	3.71	29.42	16.18	4.09
1200	67 (19.4)	36.97	24.67	2.48	35.23	24.04	2.74	33.40	23.38	3.04	31.45	22.68	3.36	29.33	21.93	3.71	27.00	21.10	4.09
	62 (16.7)	34.01	29.52	2.48	32.53	32.23	2.74	31.11	31.11	3.04	29.61	29.61	3.36	27.97	27.97	3.71	26.12	26.12	4.09
	57 (13.9)	33.78	33.78	2.48	32.49	32.49	2.74	31.11	31.11	3.04	29.62	29.62	3.36	27.97	27.97	3.71	26.12	26.12	4.09
	72 (22.2)	40.99	20.64	2.54	39.02	19.99	2.80	36.91	19.31	3.09	34.67	18.60	3.42	32.24	17.83	3.77	29.54	16.99	4.15
	67 (19.4)	37.43	26.09	2.54	35.65	25.45	2.80	33.76	24.78	3.10	31.75	24.06	3.42	29.58	23.29	3.77	27.20	22.42	4.15
1350	62 (16.7)	34.86	34.86	2.54	33.49	33.49	2.80	32.02	32.02	3.10	30.44	30.44	3.42	28.70	28.70	3.77	26.73	26.73	4.15
	57 (13.9)	34.86	34.86	2.54	33.49	33.49	2.80	32.03	32.03	3.10	30.44	30.44	3.42	28.70	28.70	3.77	26.73	26.73	4.15

CONDENSER ENTERING AIR TEMPERATURES °F (°C)																			
EVAPORATOR AIR		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	EWB °F (°C)	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**
		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†	
38HDR036 Outdoor Section With CNPV*4221A** Indoor Section																			
1050	72 (22.2)	39.85	18.85	2.42	38.03	18.23	2.68	38.08	17.58	2.98	33.99	16.89	3.30	31.72	16.14	3.65	29.20	15.33	4.03
	67 (19.4)	36.33	23.19	2.42	34.67	22.57	2.68	32.91	21.91	2.98	31.02	21.23	3.30	28.99	20.49	3.65	26.73	19.69	4.04
	62 (16.7)	33.23	27.51	2.42	31.75	26.88	2.68	30.20	26.20	2.98	28.60	26.45	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	57 (13.9)	32.46	32.46	2.42	31.26	31.26	2.68	29.98	29.98	2.98	28.59	28.59	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	72 (22.2)	40.51	19.77	2.48	38.61	19.14	2.74	36.57	18.47	3.04	34.40	17.77	3.36	32.04	17.01	3.71	29.42	16.18	4.09
1200	67 (19.4)	36.97	24.67	2.48	35.23	24.04	2.74	33.40	23.38	3.04	31.45	22.68	3.36	29.33	21.93	3.71	27.00	21.10	4.09
	62 (16.7)	34.01	29.52	2.48	32.53	32.23	2.74	31.11	31.11	3.04	29.61	29.61	3.36	27.97	27.97	3.71	26.12	26.12	4.09
	57 (13.9)	33.78	33.78	2.48	32.49	32.49	2.74	31.11	31.11	3.04	29.62	29.62	3.36	27.97	27.97	3.71	26.12	26.12	4.09
	72 (22.2)	40.99	20.64	2.54	39.02	19.99	2.80	36.91	19.31	3.09	34.67	18.60	3.42	32.24	17.83	3.77	29.54	16.99	4.15
	67 (19.4)	37.43	26.09	2.54	35.65	25.45	2.80	33.76	24.78	3.10	31.75	24.06	3.42	29.58	23.29	3.77	27.20	22.42	4.15
1350	62 (16.7)	34.86	34.86	2.54	33.49	33.49	2.80	32.02	32.02	3.10	30.44	30.44	3.42	28.70	28.70	3.77	26.73	26.73	4.15
	57 (13.9)	34.86	34.86	2.54	33.49	33.49	2.80	32.03	32.03	3.10	30.44	30.44	3.42	28.70	28.70	3.77	26.73	26.73	4.15

CONDENSER ENTERING AIR TEMPERATURES °F (°C)																			
EVAPORATOR AIR		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	EWB °F (°C)	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**
		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†	
38HDR036 Outdoor Section With CNPV*4221A** Indoor Section																			
1050	72 (22.2)	39.85	18.85	2.42	38.03	18.23	2.68	38.08	17.58	2.98	33.99	16.89	3.30	31.72	16.14	3.65	29.20	15.33	4.03
	67 (19.4)	36.33	23.19	2.42	34.67	22.57	2.68	32.91	21.91	2.98	31.02	21.23	3.30	28.99	20.49	3.65	26.73	19.69	4.04
	62 (16.7)	33.23	27.51	2.42	31.75	26.88	2.68	30.20	26.20	2.98	28.60	26.45	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	57 (13.9)	32.46	32.46	2.42	31.26	31.26	2.68	29.98	29.98	2.98	28.59	28.59	3.30	27.06	27.06	3.65	25.34	25.34	4.03
	72 (22.2)	40.51	19.77	2.48	38.61	1													

DETAILED COOLING CAPACITIES* (CONT.)

38HDR036 Outdoor Section With CNPV*4221A** Indoor Section

COOLING INDOOR MODEL	CAPACITY	POWER	FURNACE MODEL
CAP**4224A**	1.00	0.96	58MV(B, C)120-20
CNPH*3617A**	0.99	0.95	58MV(B, C)120-20
CNPH*4221A**	1.00	0.96	58MV(B, C)120-20
CSPH*3612A**	0.99	0.95	58MV(B, C)120-20
CSPH*4212A**	1.00	0.96	58MV(B, C)120-20
CAP**4224A**	1.00	0.96	58MV(B040-14
CNPH*3617A**	0.99	0.95	58MV(B040-14
CNPH*4221A**	1.00	0.96	58MV(B040-14
CSPH*3612A**	0.99	0.95	58MV(B040-14
CSPH*4212A**	1.00	0.96	58MV(B040-14
CAP**3614A**	0.99	0.95	58PH*045-08
CNPH*3617A**	0.99	0.95	58PH*045-08
CNPH*4221A**	1.00	0.96	58PH*045-08
CSPH*3612A**	0.99	0.95	58PH*045-08
CSPH*4212A**	1.00	0.96	58PH*045-08
CAP**3617A**	0.99	0.95	58PH*070-16
CNPH*3617A**	0.99	0.95	58PH*070-16
CNPH*4221A**	1.00	0.96	58PH*070-16
CNPV*3617A**	0.99	0.95	58PH*070-16
CNPV*4217A**	1.00	0.92	58PH*070-16
CSPH*3612A**	0.99	0.95	58PH*070-16
CSPH*4212A**	1.00	0.96	58PH*070-16
CAP**3621A**	0.99	0.91	58PH*090-16
CAP**4221A**	1.00	0.92	58PH*090-16
CNPH*3617A**	0.99	0.91	58PH*090-16
CNPH*4221A**	1.00	0.92	58PH*090-16
CNPV*3621A**	0.99	0.91	58PH*090-16
CNPV*4221A**	1.00	0.92	58PH*090-16
CSPH*3612A**	0.99	0.91	58PH*090-16
CSPH*4212A**	1.00	0.92	58PH*090-16
CAP**3621A**	0.99	0.91	58PH*110-20
CAP**4221A**	1.02	0.93	58PH*110-20
CNPH*3617A**	0.99	0.91	58PH*110-20
CNPH*4221A**	1.02	0.93	58PH*110-20
CNPV*3621A**	0.99	0.91	58PH*110-20
CNPV*4221A**	1.00	0.92	58PH*110-20
CSPH*3612A**	0.99	0.91	58PH*110-20
CSPH*4212A**	1.00	0.92	58PH*110-20

See notes on pg. 34

DETAILED COOLING CAPACITIES* (CONT.)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)																	
CFM	EWB ° F (° C)	75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
		Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**	Capacity MBtuHt		Total System KW**
		Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†
1460	72 (22.2)	57.22	27.09	3.31	54.16	26.03	3.74	50.83	24.90	4.20	47.23	23.69	4.69	43.24	22.38	5.21	38.87	20.99	5.76
	67 (19.4)	52.21	33.21	3.33	49.49	32.17	3.76	46.57	31.08	4.22	43.40	29.91	4.71	39.95	28.66	5.23	36.03	27.26	5.77
	62 (16.7)	47.74	39.31	3.35	45.37	38.29	3.78	42.88	37.19	4.23	40.25	39.91	4.72	37.64	37.64	5.23	34.63	34.63	5.78
	57 (13.9)	46.44	46.44	3.36	44.53	44.53	3.78	42.48	42.48	4.23	40.21	40.21	4.72	37.65	37.65	5.23	34.63	34.63	5.78
	72 (22.2)	58.13	28.26	3.37	54.91	27.17	3.81	51.42	26.01	4.27	47.67	24.78	4.76	43.52	23.45	5.28	39.26	22.10	5.84
1650	67 (19.4)	53.07	35.09	3.40	50.21	34.03	3.83	47.16	32.91	4.29	43.87	31.73	4.78	40.28	30.44	5.30	36.23	28.99	5.85
	62 (16.7)	48.75	41.89	3.42	46.32	40.79	3.85	43.85	43.85	4.30	41.42	41.42	4.79	38.64	38.64	5.31	35.37	35.37	5.85
	57 (13.9)	48.17	48.17	3.43	46.11	46.11	3.85	43.88	43.88	4.30	41.42	41.42	4.79	38.64	38.64	5.31	35.37	35.37	5.85
	72 (22.2)	58.83	29.41	3.45	55.48	28.31	3.88	51.86	27.12	4.35	47.97	25.87	4.84	43.73	24.52	5.36	39.89	23.26	5.92
	67 (19.4)	53.74	36.97	3.48	50.78	35.90	3.91	47.62	34.76	4.37	44.22	33.55	4.86	40.51	32.22	5.38	38.39	30.70	5.93
1850	62 (16.7)	49.74	44.35	3.50	47.48	47.48	3.92	45.09	45.09	4.38	42.44	42.44	4.87	39.46	39.46	5.38	35.96	35.96	5.93
	57 (13.9)	49.69	49.69	3.50	47.49	47.49	3.92	45.09	45.09	4.38	42.45	42.45	4.87	39.46	39.46	5.38	35.97	35.97	5.93

COOLING INDOOR MODEL				FURNACE MODEL			
*CNPV*4821A**	40QAC048-3	0.97	1.00	CAP**4821A**	58CV(A,X)155-22	0.95	0.99
	CAP**4817A**	0.99 <td>0.93<td>CNP**6024A**</td><td>58CV(A,X)155-22</td><td>0.96<td>1.00</td></td></td>	0.93 <td>CNP**6024A**</td> <td>58CV(A,X)155-22</td> <td>0.96<td>1.00</td></td>	CNP**6024A**	58CV(A,X)155-22	0.96 <td>1.00</td>	1.00
	CAP**4821A**	1.00	1.00	CNPV*6024A**	58CV(A,X)155-22	0.95 <td>0.99</td>	0.99
	CAP**4824A**	1.00	1.00	CNPV*4824A**	58CV(A,X)155-22	0.96 <td>1.00</td>	1.00
	CAP**6021A**	1.01	1.01	CNPV*6024A**	58CV(A,X)155-22	0.95 <td>0.99</td>	0.99
	CAP**6024A**	1.01	1.01	CSPH*4812A**	58CV(A,X)155-22	0.95 <td>0.99</td>	0.99
	CNPF*4818A**	0.98 <td>0.98</td> <td>CSPH*6012A**</td> <td>58CV(A,X)155-22</td> <td>0.96<td>1.00</td></td>	0.98	CSPH*6012A**	58CV(A,X)155-22	0.96 <td>1.00</td>	1.00
	CNPV*4821A**	1.00	1.00	CAP**4817A**	58MEB080-16	0.95 <td>0.99</td>	0.99
	CNPV*6024A**	1.01	1.01	CNPV*4821A**	58MEB080-16	0.95 <td>0.99</td>	0.99
	CNPV*4824A**	1.00	1.00	CNPV*6024A**	58MEB080-16	0.96 <td>1.00</td>	1.00
	CSPH*4812A**	1.01	1.01	CSPH*4812A**	58MEB080-16	0.95 <td>0.99</td>	0.99
	CSPH*6012A**	1.00	1.00	CAP**4821A**	58MEB100-20	0.92 <td>0.99</td>	0.99
	FE4ANB,F005	1.00	0.96	CAP**6021A**	58MEB100-20	0.92 <td>1.00</td>	1.00
	FE4ANB006	1.01	0.97	CNPV*4821A**	58MEB100-20	0.95 <td>0.99</td>	0.99
	FV4BNB,F005	1.00	0.96	CNPV*6024A**	58MEB100-20	0.92 <td>1.00</td>	1.00
	FV4BNB006	1.01	0.97	CNPV*4821A**	58MEB100-20	0.95 <td>0.99</td>	0.99
	FX4CNB,F048	1.00	0.96	CSPH*4812A**	58MEB100-20	0.95 <td>0.99</td>	0.99
	FX4CNB,F060	1.01	0.97	CSPH*6012A**	58MEB100-20	0.92 <td>1.00</td>	1.00
	FY4ANB060	1.01	1.01	CAP**4824A**	58MEB120-20	0.95 <td>0.99</td>	0.99
	FY4ANF048	1.00	1.00	CAP**6024A**	58MEB120-20	0.92 <td>1.00</td>	1.00
	CAP**4817A**	0.99	0.95	CNPV*4821A**	58MEB120-20	0.95 <td>0.99</td>	0.99
	CNPV*4821A**	0.99	0.99	CNPV*6024A**	58MEB120-20	0.92 <td>1.00</td>	1.00
	CNPV*6024A**	1.00	0.96	CNPV*4824A**	58MEB120-20	0.95 <td>0.99</td>	0.99
	CSPH*4812A**	0.99	0.95	CNPV*6024A**	58MEB120-20	0.92 <td>1.00</td>	1.00
	CSPH*6012A**	1.00	0.96	CSPH*4812A**	58MEB120-20	0.95 <td>0.99</td>	0.99
	CAP**4821A**	0.99	0.96	CSPH*6012A**	58MEB120-20	0.92 <td>1.00</td>	1.00
	CAP**6021A**	1.00	0.96	CAP**4821A**	58MV(B,C)080-20	0.94 <td>0.98</td>	0.98
	CNPV*4821A**	0.99	0.95	CAP**6021A**	58MV(B,C)080-20	0.96 <td>1.00</td>	1.00
	CNPV*6024A**	1.00	0.96	CNPV*4821A**	58MV(B,C)080-20	0.95 <td>0.99</td>	0.99

COOLING INDOOR MODEL				FURNACE MODEL			
CAP**4824A**	58CV(A,X)155-22	0.95	0.99	CAP**4824A**	58CV(A,X)155-22	0.95	0.95
CNP**6024A**	58CV(A,X)155-22	0.96	1.00	CNP**6024A**	58CV(A,X)155-22	0.96	1.00
CNPV*4821A**	58CV(A,X)155-22	0.95	0.99	CNPV*4821A**	58CV(A,X)155-22	0.95	0.99
CNPV*6024A**	58CV(A,X)155-22	0.96	1.00	CNPV*6024A**	58CV(A,X)155-22	0.96	1.00
CNPV*4824A**	58CV(A,X)155-22	0.95	0.99	CNPV*4824A**	58CV(A,X)155-22	0.95	0.99
CNPV*6024A**	58CV(A,X)155-22	0.96	1.00	CNPV*6024A**	58CV(A,X)155-22	0.96	1.00
CSPH*4812A**	58CV(A,X)155-22	0.95	0.99	CSPH*4812A**	58CV(A,X)155-22	0.95	0.99
CSPH*6012A**	58CV(A,X)155-22	0.96	1.00	CSPH*6012A**	58CV(A,X)155-22	0.96	1.00
CAP**4817A**	58MEB080-16	0.95	0.99	CAP**4817A**	58MEB080-16	0.95	0.99
CNPV*4821A**	58MEB080-16	0.95	0.99	CNPV*4821A**	58MEB080-16	0.95	0.99
CNPV*6024A**	58MEB080-16	0.96	1.00	CNPV*6024A**	58MEB080-16	0.96	1.00
CSPH*4812A**	58MEB080-16	0.95	0.99	CSPH*4812A**	58MEB080-16	0.95	0.99
CSPH*6012A**	58MEB080-16	0.92	1.00	CSPH*6012A**	58MEB080-16	0.92	1.00
CAP**4821A**	58MEB100-20	0.95	0.99	CAP**4821A**	58MEB100-20	0.95	0.99
CAP**6021A**	58MEB100-20	0.92	1.00	CAP**6021A**	58MEB100-20	0.92	1.00
CNPV*4821A**	58MEB100-20	0.95	0.99	CNPV*4821A**	58MEB100-20	0.95	0.99
CNPV*6024A**	58MEB100-20	0.96	1.00	CNPV*6024A**	58MEB100-20	0.96	1.00
CSPH*4812A**	58MEB100-20	0.95	0.99	CSPH*4812A**	58MEB100-20	0.95	0.99
CSPH*6012A**	58MEB100-20	0.92	1.00	CSPH*6012A**	58MEB100-20	0.92	1.00
CAP**4824A**	58MEB120-20	0.95	0.99	CAP**4824A**	58MEB120-20	0.95	0.99
CAP**6024A**	58MEB120-20	0.92	1.00	CAP**6024A**	58MEB120-20	0.92	1.00
CNPV*4821A**	58MEB120-20	0.95	0.99	CNPV*4821A**	58MEB120-20	0.95	0.99
CNPV*6024A**	58MEB120-20	0.96	1.00	CNPV*6024A**	58MEB120-20	0.96	1.00
CSPH*4812A**	58MEB120-20	0.95	0.99	CSPH*4812A**	58MEB120-20	0.95	0.99
CSPH*6012A**	58MEB120-20	0.92	1.00	CSPH*6012A**	58MEB120-20	0.92	1.00
CAP**4821A**	58MEB120-20	0.94	0.98	CAP**4821A**	58MEB120-20	0.94	0.98
CAP**6021A**	58MEB120-20	0.96	1.00	CAP**6021A**	58MEB120-20	0.96	1.00
CNPV*4821A**	58MEB120-20	0.95	0.99	CNPV*4821A**	58MEB120-20	0.95	0.99
CNPV*6024A**	58MEB120-20	0.96	1.00	CNPV*6024A**	58MEB120-20	0.96	1.00

COOLING INDOOR MODEL				FURNACE MODEL			
CAP**4824A**	58MV(B,C)120-20	0.95	0.99	CAP**4824A**	58MV(B,C)120-20	0.95	0.95
CNP**6024A**	58MV(B,C)120-20	0.96	1.00	CNP**6024A**	58MV(B,C)120-20	0.96	1.00
CNPV*4821A**	58MV(B,C)120-20	0.95	0.99	CNPV*4821A**	58MV(B,C)120-20	0.95	0.99
CNPV*6024A**	58MV(B,C)120-20	0.96	1.00	CNPV*6024A**	58MV(B,C)120-20	0.96	1.00
CNPV*4824A**	58MV(B,C)120-20	0.95	0.99	CNPV*4824A**	58MV(B,C)120-20	0.95	0.99
CNPV*6024A**	58MV(B,C)120-20	0.96	1.00	CNPV*6024A**	58MV(B,C)120-20	0.96	1.00
CSPH*4812A**	58MV(B,C)120-20	0.95	0.99	CSPH*4812A**	58MV(B,C)120-20	0.95	0.99
CSPH*6012A**	58MV(B,C)120-20	0.96	1.00	CSPH*6012A**	58MV(B,C)120-20	0.96	1.00
CAP**4817A**	58PH*070-16	0.95	0.99	CAP**4817A**	58PH*070-16	0.95	0.95
CNPV*4821A**	58PH*090-16	0.95	0.99	CNPV*4821A**	58PH*090-16	0.95	0.99
CNPV*6021A**	58PH*090-16	0.92	1.00	CNPV*6021A**	58PH*090-16	0.92	1.00
CNPV*4821A**	58PH*090-16	0.95	0.99	CNPV*4821A**	58PH*090-16	0.95	0.99
CNPV*6024A**	58PH*090-16	0.96	1.00	CNPV*6024A**	58PH*090-16	0.96	1.00
CSPH*4812A**	58PH*090-16	0.95	0.99	CSPH*4812A**	58PH*090-16	0.95	0.99
CSPH*6012A**	58PH*090-16	0.92	1.00	CSPH*6012A**	58PH*090-16	0.92	1.00
CAP**4821A**	58PH*110-20	0.95	0.99	CAP**4821A**	58PH*110-20	0.95	0.99
CAP**6021A**	58PH*110-20	0.92	1.00	CAP**6021A**	58PH*110-20	0.92	1.00
CNPV*4821A**	58PH*110-20	0.95	0.99	CNPV*4821A**	58PH*110-20	0.95	0.99
CNPV*6024A**	58PH*110-20	0.96	1.00	CNPV*6024A**	58PH*110-20	0.96	1.00
CSPH*4812A**	58PH*110-20	0.95	0.99	CSPH*4812A**	58PH*110-20	0.95	0.99
CSPH*6012A**	58PH*110-20	0.92	1.00	CSPH*6012A**	58PH*110-20	0.92	1.00
CAP**4824A**	58PH*135-20	0.95	0.99	CAP**4824A**	58PH*135-20	0.95	0.99
CAP**6024A**	58PH*135-20	0.92	1.00	CAP**6024A**	58PH*135-20	0.92	1.00
CNPV*4821A**	58PH*135-20	0.95	0.99	CNPV*4821A**	58PH*135-20	0.95	0.99
CNPV*6024A**	58PH*135-20	0.96	1.00	CNPV*6024A**	58PH*135-20	0.96	1.00
CSPH*4812A**	58PH*135-20	0.95	0.99	CSPH*4812A**	58PH*135-20	0.95	0.99
CSPH*6012A**	58PH*135-20	0.92	1.00	CSPH*6012A**	58PH*135-20	0.92	1.00
CAP**4821A**	58PH*135-20	0.95	0.99	CAP**4821A**	58PH*135-20	0.95	0.99
CAP**6021A**	58PH*135-20	0.92	1.00	CAP**6021A**	58PH*135-20	0.92	1.00
CNPV*4821A**	58PH*135-20	0.95	0.99	CNPV*4821A**	58PH*135-20	0.95	0.99
CNPV*6024A**	58PH*135-20	0.96	1.00	CNPV*6024A**	58PH*135-20	0.96	1.00

CONDENSER ENTERING AIR TEMPERATURES °F (°C)																			
EVAPORATOR AIR		75 (23.9)			85 (29.4)			95 (35)			105 (40.6)			115 (46.1)			125 (51.7)		
CFM	EWB °F (°C)	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**	Capacity MBtu/h†		Total System KW**
		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†		Total	Sens†	
1480	72 (22.2)	57.22	27.09	3.31	54.16	26.03	3.74	50.83	24.90	4.20	47.23	23.69	4.69	43.24	22.38	5.21	38.87	20.99	5.76
	67 (19.4)	52.21	33.21	3.33	49.49	32.17	3.76	46.57	31.08	4.22	43.40	29.91	4.71	39.95	28.66	5.23	36.03	27.26	5.77
	62 (16.7)	47.74	39.31	3.35	45.37	38.29	3.78	42.88	37.19	4.23	40.25	39.91	4.72	37.64	37.64	5.23	34.63	34.63	5.78
	57 (13.9)	46.44	46.44	3.36	44.53	44.53	3.78	42.48	42.48	4.23	40.21	40.21	4.72	37.65	37.65	5.23	34.63	34.63	5.78
	72 (22.2)	58.13	28.26	3.37	54.91	27.17	3.81	51.42	26.01	4.27	47.67	24.78	4.76	43.52	23.45	5.28	39.26	22.10	5.84
1650	67 (19.4)	53.07	35.09	3.40	50.21	34.03	3.83	47.16	32.91	4.29	43.87	31.73	4.78	40.28	30.44	5.30	36.23	28.99	5.85
	62 (16.7)	48.75	41.89	3.42	46.32	40.79	3.85	43.85	43.85	4.30	41.42	41.42	4.79	38.64	38.64	5.31	35.37	35.37	5.85
	57 (13.9)	48.17	48.17	3.43	46.11	46.11	3.85	43.88	43.88	4.30	41.42	41.42	4.79	38.64	38.64	5.31	35.37	35.37	5.85
	72 (22.2)	58.83	29.41	3.45	55.48	28.31	3.88	51.86	27.12	4.35	47.97	25.87	4.84	43.73	24.52	5.36	39.89	23.26	5.92
	67 (19.4)	53.74	36.97	3.48	50.78	35.90	3.91	47.62	34.76	4.37	44.22	33.55	4.86	40.51	32.22	5.38	36.39	30.70	5.93
1850	62 (16.7)	49.74	44.35	3.50	47.48	47.48	3.92	45.09	45.09	4.38	42.44	42.44	4.87	39.46	39.46	5.38	35.96	35.96	5.93
	57 (13.9)	49.69	49.69	3.50	47.49	47.49	3.92	45.09	45.09	4.38	42.45	42.45	4.87	39.46	39.46	5.38	35.97	35.97	5.93

COOLING INDOOR MODEL		CAPACITY	POWER	FURNACE MODEL
CAP**4824A**	CAP**4824A**	0.99	0.95	58CVA/X155-22
	CAP**6024A**	1.00	0.96	58CVA/X155-22
	CNP#4821A**	0.99	0.95	58CVA/X155-22
	CNP#6024A**	1.00	0.96	58CVA/X155-22
	CNP#4824A**	0.99	0.95	58CVA/X155-22
	CNP#6024A**	1.00	0.96	58CVA/X155-22
	CNP#4812A**	0.99	0.95	58CVA/X155-22
	CSP#6012A**	1.00	0.96	58CVA/X155-22
	CAP**4817A**	0.99	0.95	58MEB080-16
	CNP#4821A**	0.99	0.95	58MEB080-16
CSPH*6024A**	CSPH*6024A**	1.00	0.96	58MEB080-16
	CSPH*4812A**	0.99	0.95	58MEB080-16
	CSPH*6012A**	1.00	0.92	58MEB080-16
	CAP**4821A**	0.99	0.95	58MEB100-20
	CAP**6021A**	1.00	0.92	58MEB100-20
	CNP#4821A**	0.99	0.95	58MEB100-20
	CNP#6024A**	1.00	0.95	58MEB100-20
	CNP#4821A**	0.99	0.92	58MEB100-20
	CSPH*4812A**	0.99	0.95	58MEB100-20
	CSPH*6012A**	1.00	0.92	58MEB100-20
CAP**4824A**	CAP**4824A**	0.99	0.95	58MEB120-20
	CAP**6024A**	1.00	0.92	58MEB120-20
	CNP#4821A**	0.99	0.95	58MEB120-20
	CNP#6024A**	1.00	0.92	58MEB120-20
	CNP#4824A**	0.99	0.95	58MEB120-20
	CNP#6024A**	1.00	0.92	58MEB120-20
	CSPH*4812A**	1.00	0.92	58MEB120-20
	CAP**4821A**	0.98	0.94	58MBV/C080-20
	CAP**6021A**	1.00	0.96	58MBV/C080-20
	CNP#4821A**	0.99	0.95	58MBV/C080-20
CNP#6024A**	CNP#6024A**	1.00	0.96	58MBV/C080-20
	CNP#4821A**	1.00	0.96	58MBV/C080-20
	CNP#6024A**	0.99	0.95	58MBV/C080-20
	CSPH*4812A**	0.99	0.95	58MBV/C080-20
	CSPH*6012A**	1.00	0.96	58MBV/C080-20
	CAP**4821A**	0.99	0.95	58MBV/C100-20
	CAP**6021A**	1.00	0.96	58MBV/C100-20
	CNP#4821A**	0.99	0.95	58MBV/C100-20
	CNP#6024A**	1.00	0.96	58MBV/C100-20
	CNP#4821A**	0.99	0.95	58MBV/C100-20
CSPH*4812A**	CSPH*4812A**	0.99	0.95	58MBV/C100-20
	CSPH*6012A**	1.00	0.96	58MBV/C100-20
	CSPH*4812A**	0.99	0.95	58MBV/C100-20
	CSPH*6012A**	1.00	0.96	58MBV/C100-20
	CSPH*4812A**	0.99	0.95	58MBV/C100-20
	CSPH*6012A**	1.00	0.96	58MBV/C100-20
	CSPH*4812A**	0.99	0.95	58MBV/C100-20
	CSPH*6012A**	1.00	0.96	58MBV/C100-20
	CSPH*4812A**	0.99	0.95	58MBV/C100-20
	CSPH*6012A**	1.00	0.96	58MBV/C100-20

DETAILED COOLING CAPACITIES** (CONT.)

EVAPORATOR AIR				CONDENSER ENTERING AIR TEMPERATURES °F (°C)														
CFM		EWB ° F (° C)	75 (23.9)		85 (29.4)		95 (35)		105 (40.6)		115 (46.1)		125 (51.7)					
			Capacity MBtu/h†	Total System KW**	Capacity MBtu/h†	Total System KW**	Capacity MBtu/h†	Total System KW**	Capacity MBtu/h†	Total System KW**	Capacity MBtu/h†	Total System KW**	Capacity MBtu/h†	Total System KW**				
			Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†	Total	Sens†				
38HDR080 Outdoor Section With CNPV*6024A** Indoor Section																		
1750	72 (22.2)		68.88	33.36	4.20	65.13	32.05	4.64	60.97	30.62	5.12	58.47	29.10	5.64	51.66			
	67 (19.4)				4.15	59.98	39.91	4.55	56.34	38.52	5.08	52.38	37.05	5.60	48.00			
	62 (16.7)		58.24	48.95	4.11	55.37	47.69	4.55	52.27	46.30	5.04	48.91	48.85	5.57	45.63			
	57 (13.9)		56.77	56.77	4.09	54.45	54.45	4.54	51.86	51.86	5.03	48.95	48.95	5.57	45.63			
	72 (22.2)		69.89	34.93	4.31	65.94	33.59	4.75	61.58	32.12	5.23	56.96	30.59	5.74	52.01			
2000	67 (19.4)		64.28	43.75	4.26	60.81	42.45	4.70	57.00	41.04	5.18	52.88	39.53	5.71	48.32			
	62 (16.7)		59.48	52.47	4.22	56.55	51.08	4.66	53.58	53.58	5.15	50.40	50.40	5.68	46.78			
	57 (13.9)		58.96	58.96	4.21	56.42	56.42	4.66	53.58	53.58	5.15	50.40	50.40	5.68	46.78			
	72 (22.2)		70.60	36.41	4.42	66.50	35.04	4.86	61.97	33.55	5.33	57.25	32.02	5.85	52.14			
	67 (19.4)		65.01	46.21	4.37	61.41	44.89	4.81	57.46	43.44	5.29	53.20	41.88	5.81	48.56			
2250	62 (16.7)		60.67	60.67	4.33	58.00	58.00	4.78	54.94	54.94	5.26	51.52	51.52	5.79	47.63			
	57 (13.9)		60.73	60.73	4.33	58.00	58.00	4.78	54.94	54.94	5.26	51.52	51.52	5.79	47.63			
			CAPACITY	POWER	FURNACE MODEL		COOLING INDOOR MODEL		CAPACITY	POWER	FURNACE MODEL		COOLING INDOOR MODEL		CAPACITY	POWER	FURNACE MODEL	
*CNPV*6024A**			1.00	1.00			CNPV*6024A**		0.98	0.98	58CV(A,X)135-22		CNPV*6024A**		0.98	0.98	58MEB120-20	
40QAC080-3			0.98	0.98			CNPH*6024A**		0.98	0.98	58CV(A,X)135-22		CSPH*6012A**		0.98	0.98	58MEB120-20	
CAP**6021A**			1.00	1.00			CSPH*6012A**		0.98	0.98	58CV(A,X)135-22		CAP**6012A**		0.98	0.98	58MV(B,C)120-20	
CAP**6024A**			1.00	1.00			CAP**6024A**		0.98	0.98	58CV(A,X)155-22		CAP**6021A**		0.98	0.98	58PH*090-16	
CNPH*6024A**			1.00	1.00			CNPH*6024A**		0.98	0.98	58CV(A,X)155-22		CNPH*6024A**		0.98	0.98	58PH*090-16	
CSPH*6012A**			1.00	1.00			CNPH*6024A**		0.98	0.98	58CV(A,X)155-22		CSPH*6012A**		0.98	0.98	58PH*090-16	
FE4ANB006			1.01	1.01			CSPH*6012A**		0.98	0.98	58CV(A,X)155-22		CAP**6021A**		0.98	0.98	58PH*110-20	
FV4ANB006			1.01	1.01			CNPH*6024A**		0.98	0.98	58MEB080-16		CNPH*6024A**		0.98	0.98	58PH*110-20	
FX4CN(B,F)060			1.01	1.01			CSPH*6012A**		0.98	0.98	58MEB080-16		CSPH*6012A**		0.98	0.98	58PH*110-20	
FY4ANB060			1.00	1.00			CAP**6021A**		0.98	0.98	58MEB100-20		CAP**6024A**		0.98	0.98	58PH*135-20	
CAP**6021A**			0.98	0.98			CNPH*6024A**		0.98	0.98	58MEB100-20		CNPH*6012A**		0.98	0.98	58PH*135-20	
CNPH*6024A**			0.98	0.98			CSPH*6012A**		0.98	0.98	58MEB100-20		CNPH*6024A**		0.98	0.98	58PH*135-20	
CSPH*6012A**			0.98	0.98			CAP**6024A**		0.98	0.98	58MEB120-20		CNPV*6024A**		0.98	0.98	58PH*135-20	
CAP**6024A**			0.98	0.98			CNPH*6024A**		0.98	0.98	58MEB120-20		CSPH*6012A**		0.98	0.98	58PH*135-20	

NOTE: When the required data fall between the published data, interpolation may be performed. Extrapolation is not an acceptable practice.

* Detailed cooling capacities are based on indoor and outdoor unit at the same elevation per the latest edition of AHRI standard 210/240. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

† Total and sensible capacities are net capacities. Blower motor heat has been subtracted.

‡ Sensible capacities shown are based on 80° F (27° C) entering air at the indoor coil. For sensible capacities at other than 80° F (27° C), deduct 835 Btu/h

(245 kW) per 1000 CFM (480 L/S) of indoor coil air for each degree below 80° F (27° C), or add 835 Btu/h (245 kW) per 1000 CFM (480 L/S) of indoor coil air per degree above 80° F (27° C).

When the required data fall between the published data, interpolation may be performed.

** Total system kW is total of indoor and outdoor unit kilowatts.

CONDENSER ONLY RATINGS*

SST ° F (° C)		CONDENSER ENTERING AIR TEMPERATURES ° F (° C)							
		55 (12.8)	65 (18.3)	75 (23.9)	85 (29.4)	95 (35)	105 (40.6)	115 (46.1)	125 (51.7)
38HDR018-31									
30 (-1.6)	TCG	16.20	15.30	14.30	13.40	12.40	11.40	10.30	9.20
	SDT	67.40	77.00	86.50	96.00	105.50	114.90	124.40	133.70
	KW	0.86	0.98	1.11	1.26	1.42	1.59	1.77	1.96
35 (1.7)	TCG	17.90	16.90	15.90	14.80	13.80	12.70	11.60	10.40
	SDT	68.50	78.00	87.50	97.00	106.40	115.80	125.20	134.50
	KW	0.86	0.98	1.11	1.26	1.42	1.59	1.78	1.98
40 (4.4)	TCG	19.70	18.60	17.50	16.40	15.20	14.10	12.90	11.60
	SDT	69.70	79.10	88.60	98.00	107.40	116.80	126.10	135.30
	KW	0.85	0.97	1.11	1.26	1.42	1.60	1.79	1.99
45 (7.2)	TCG	21.60	20.40	19.20	18.00	16.80	15.50	14.20	12.80
	SDT	70.90	80.30	89.70	99.00	108.40	117.70	127.00	136.10
	KW	0.85	0.97	1.11	1.26	1.42	1.60	1.79	2.00
50 (10)	TCG	23.60	22.30	21.10	19.70	18.40	17.00	15.60	14.10
	SDT	72.20	81.50	90.80	100.10	109.40	118.60	127.80	136.90
	KW	0.85	0.97	1.11	1.26	1.42	1.60	1.79	2.00
55 (12.8)	TCG	25.70	24.30	22.90	21.50	20.00	18.60	17.00	15.40
	SDT	73.50	82.70	92.00	101.20	110.40	119.60	128.70	137.70
	KW	0.85	0.97	1.10	1.25	1.42	1.60	1.79	2.00
38HDR024-32									
30 (-1.6)	TCG	22.10	20.90	19.60	18.30	16.90	15.50	14.00	12.40
	SDT	69.00	78.50	88.00	97.40	106.80	116.10	125.30	134.50
	KW	1.08	1.24	1.41	1.60	1.80	2.02	2.25	2.48
35 (1.7)	TCG	24.30	23.00	21.70	20.30	18.80	17.20	15.60	13.80
	SDT	70.30	79.80	89.20	98.60	107.90	117.10	126.30	135.40
	KW	1.09	1.24	1.42	1.61	1.82	2.04	2.28	2.52
40 (4.4)	TCG	26.80	25.30	23.90	22.30	20.70	19.00	17.20	15.30
	SDT	71.70	81.10	90.50	99.80	109.10	118.20	127.30	136.30
	KW	1.10	1.26	1.43	1.62	1.83	2.06	2.30	2.55
45 (7.2)	TCG	29.40	27.80	26.20	24.50	22.70	20.90	18.90	16.70
	SDT	73.20	82.60	91.90	101.10	110.20	119.30	128.30	137.10
	KW	1.11	1.27	1.44	1.64	1.85	2.08	2.32	2.57
50 (10)	TCG	32.10	30.40	28.60	26.80	24.80	22.70	20.50	18.10
	SDT	74.80	84.10	93.30	102.40	111.50	120.40	129.20	137.90
	KW	1.12	1.28	1.46	1.65	1.86	2.09	2.33	2.59
55 (12.8)	TCG	35.00	33.10	31.20	29.10	26.90	24.60	22.20	19.50
	SDT	76.40	85.60	94.70	103.80	112.70	121.50	130.20	138.60
	KW	1.13	1.29	1.47	1.66	1.88	2.10	2.35	2.60
38HDR030-31									
30 (-1.6)	TCG	26.20	24.70	23.20	21.70	20.10	18.40	16.80	15.30
	SDT	72.00	82.30	92.90	103.80	115.00	126.90	139.00	148.90
	KW	1.30	1.48	1.69	1.92	2.19	2.50	2.84	3.12
35 (1.7)	TCG	28.80	27.30	25.70	24.10	22.40	20.60	18.90	17.40
	SDT	73.10	83.50	94.00	104.80	116.10	127.70	139.50	149.30
	KW	1.30	1.49	1.69	1.93	2.21	2.52	2.86	3.15
40 (4.4)	TCG	31.70	30.10	28.40	26.60	24.80	23.00	21.20	19.60
	SDT	74.30	84.70	95.20	105.90	117.10	128.60	140.00	149.70
	KW	1.31	1.49	1.70	1.94	2.22	2.53	2.87	3.18
45 (7.2)	TCG	34.80	33.10	31.20	29.40	27.40	25.50	23.60	21.90
	SDT	75.60	85.90	96.40	107.10	118.10	129.40	140.60	150.10
	KW	1.31	1.50	1.71	1.95	2.22	2.54	2.88	3.19
50 (10)	TCG	38.20	36.20	34.30	32.30	30.30	28.20	26.20	24.40
	SDT	76.90	87.20	97.60	108.20	119.20	130.30	141.10	150.50
	KW	1.32	1.50	1.71	1.95	2.23	2.55	2.89	3.20
55 (12.8)	TCG	41.70	39.70	37.60	35.50	33.30	31.10	29.00	27.10
	SDT	78.30	88.50	98.90	109.40	120.20	131.20	141.80	150.90
	KW	1.32	1.51	1.72	1.96	2.24	2.55	2.89	3.20
38HDR036-31									
30 (-1.6)	TCG	30.10	28.50	26.80	25.10	23.30	21.50	19.60	17.60
	SDT	70.90	80.80	90.90	101.00	111.20	121.60	132.30	143.30
	KW	1.50	1.71	1.94	2.20	2.50	2.83	3.19	3.58
35 (1.7)	TCG	33.20	31.50	29.70	27.80	25.90	24.00	21.90	19.90
	SDT	72.00	82.00	92.00	102.10	112.30	122.80	133.30	143.80
	KW	1.50	1.71	1.95	2.21	2.52	2.85	3.21	3.60
40 (4.4)	TCG	36.50	34.60	32.70	30.70	28.70	26.60	24.40	22.30
	SDT	73.30	83.20	93.20	103.20	113.40	123.60	134.10	144.50
	KW	1.51	1.72	1.95	2.22	2.52	2.85	3.23	3.63
45 (7.2)	TCG	40.10	38.10	36.00	33.80	31.70	29.40	27.10	24.80
	SDT	74.60	84.40	94.40	104.50	113.80	124.50	135.20	145.30
	KW	1.51	1.72	1.96	2.23	2.51	2.86	3.26	3.65
50 (10)	TCG	43.90	41.70	39.50	37.10	34.90	32.40	30.00	27.60
	SDT	75.90	85.80	95.70	105.90	115.50	125.90	136.20	146.00
	KW	1.52	1.73	1.97	2.24	2.54	2.89	3.27	3.66
55 (12.8)	TCG	48.00	45.70	43.30	40.70	38.30	35.70	33.10	30.50
	SDT	77.40	87.10	97.00	107.10	116.70	126.80	137.00	146.70
	KW	1.53	1.74	1.98	2.25	2.55	2.89	3.28	3.66

See notes on page 38

38HDR

CONDENSER ONLY RATINGS* CONTINUED

SST ° F (° C)		CONDENSER ENTERING AIR TEMPERATURES ° F (° C)							
		55 (12.8)	65 (18.3)	75 (23.9)	85 (29.4)	95 (35)	105 (40.6)	115 (46.1)	125 (51.7)
38HDR048-32									
30 (-1.6)	TCG	48.40	45.50	42.50	39.50	36.20	32.90	30.60	28.10
	SDT	67.90	77.30	86.70	96.00	105.40	114.70	124.30	133.80
	KW	2.05	2.39	2.75	3.15	3.56	4.01	4.49	5.00
35 (1.7)	TCG	53.40	50.20	46.90	43.40	39.60	35.70	34.00	25.50
	SDT	69.10	78.40	87.80	97.00	106.20	115.40	125.10	133.00
	KW	2.02	2.37	2.74	3.14	3.56	4.01	4.51	4.99
40 (4.4)	TCG	58.70	55.10	51.40	47.50	43.10	38.30	33.00	27.10
	SDT	70.40	79.60	88.90	98.00	107.10	116.10	124.80	133.40
	KW	1.99	2.35	2.72	3.13	3.55	4.01	4.49	4.99
45 (7.2)	TCG	64.30	60.30	56.20	51.60	46.90	41.20	35.20	28.90
	SDT	71.80	80.90	90.00	99.10	108.10	116.80	125.40	133.80
	KW	1.96	2.32	2.70	3.11	3.54	4.00	4.48	4.99
50 (10)	TCG	70.30	65.80	61.10	55.80	50.40	44.20	37.30	34.60
	SDT	73.30	82.30	91.20	100.10	108.90	117.50	125.90	135.30
	KW	1.92	2.29	2.68	3.09	3.52	3.98	4.46	5.01
55 (12.8)	TCG	76.50	71.40	66.00	60.30	54.00	47.00	50.70	41.10
	SDT	74.80	83.60	92.50	101.20	109.80	118.20	129.40	137.00
	KW	1.88	2.25	2.64	3.06	3.49	3.95	4.57	5.05
38HDR060-32									
30 (-1.6)	TCG	59.30	55.30	50.90	46.20	40.40	37.90	33.80	30.30
	SDT	70.10	79.30	88.40	97.40	106.20	115.80	124.90	134.20
	KW	2.59	2.93	3.31	3.73	4.19	4.72	5.31	5.90
35 (1.7)	TCG	64.70	60.20	55.50	50.00	43.30	42.40	31.50	33.10
	SDT	71.40	80.50	89.50	98.40	106.90	116.90	124.20	134.90
	KW	2.62	2.97	3.34	3.76	4.21	4.76	5.25	5.93
40 (4.4)	TCG	69.90	65.30	60.10	53.80	55.90	47.40	31.70	35.60
	SDT	72.70	81.70	90.60	99.30	110.10	118.10	124.20	135.50
	KW	2.66	3.00	3.38	3.78	4.34	4.81	5.24	5.96
45 (7.2)	TCG	76.00	70.80	64.80	57.40	56.00	54.60	48.50	47.70
	SDT	74.10	83.00	91.80	100.20	110.00	119.90	128.60	138.80
	KW	2.71	3.04	3.40	3.80	4.32	4.89	5.43	6.08
50 (10)	TCG	82.20	76.70	69.30	70.90	61.80	58.60	30.50	52.10
	SDT	75.60	84.40	92.80	103.40	111.40	120.90	123.80	139.80
	KW	2.75	3.09	3.42	3.99	4.38	4.93	5.16	6.13
55 (12.8)	TCG	95.20	87.70	88.40	74.60	75.40	53.90	46.10	60.30
	SDT	78.80	87.10	97.50	104.30	114.70	119.50	127.70	141.70
	KW	2.85	3.13	3.74	3.95	4.56	4.78	5.33	6.25

* AHRI listing applies only to systems shown in Combination Ratings table.

KW – Outdoor Unit Kilowatts Only.

SDT – Saturated Temperature Leaving Compressor (°F)

SST – Saturated Temperature Entering Compressor (°F/°C)

TCG – Gross Cooling Capacity (1000 Btuh)

38HDR

GUIDE SPECIFICATIONS

GENERAL

System Description

Outdoor-mounted, air-cooled, split-system air conditioner unit suitable for ground or rooftop installation. Unit consists of a hermetic compressor, an air-cooled coil, propeller-type condenser fan, and a control box. Unit will discharge supply air horizontally as shown on contract drawings. Unit will be used in a refrigeration circuit to match up to a packaged fan coil or coil unit.

Quality Assurance

- Unit will be rated in accordance with the latest edition of ARI Standard 210.
- Unit will be certified for capacity and efficiency, and listed in the latest ARI directory.
- Unit construction will comply with latest edition of ANSI/ASHRAE and with NEC.
- Unit will be constructed in accordance with UL standards and will carry the UL label of approval. Unit will have c-UL approval.
- Unit cabinet will be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 500-hr salt spray test.
- Air-cooled condenser coils will be leak tested and pressure tested
- Unit constructed in ISO9001 approved facility.

Delivery, Storage, and Handling

- Unit will be shipped as single package only and is stored and handled per unit manufacturer's recommendations.

Warranty (for inclusion by specifying engineer)

- U.S. and Canada only.

PRODUCTS

Equipment

- Factory assembled, single piece, air-cooled air conditioner unit. Contained within the unit enclosure is all factory wiring, piping, controls, compressor, refrigerant charge Puron® (R-410A), and special features required prior to field start-up.

Unit Cabinet

- Unit cabinet will be constructed of galvanized steel, bonderized, and coated with a powder coat paint.

Fans

- Condenser fan will be direct-drive propeller type, discharging air horizontally.

AIR-COOLED, SPLIT-SYSTEM AIR CONDITIONER

38HDR

1-1/2 TO 5 NOMINAL TONS

- Condenser fan motors will be totally enclosed, 1-phase type with class B insulation and permanently lubricated bearings. Shafts will be corrosion resistant.
- Fan blades will be statically and dynamically balanced.
- Condenser fan openings will be equipped with coated steel wire safety guards.

Compressor

- Compressor will be hermetically sealed.
- Compressor will be mounted on rubber vibration isolators.

Condenser Coil

- Condenser coil will be air cooled.
- Coil will be constructed of aluminum fins mechanically bonded to copper tubes which are then cleaned, dehydrated, and sealed.

Refrigeration Components

- Refrigeration circuit components will include liquid-line front-seating shutoff valve with sweat connections, vapor-line front-seating shutoff valve with sweat connections, system charge of Puron® (R-410A) refrigerant, and compressor oil.
- Unit will be equipped with high-pressure switch, low pressure switch and filter drier for Puron refrigerant.

Operating Characteristics

- The capacity of the unit will meet or exceed _____ Btuh at a suction temperature of _____ °F/°C. The power consumption at full load will not exceed _____ kW.
- Combination of the unit and the evaporator or fan coil unit will have a total net cooling capacity of _____ Btuh or greater at conditions of _____ CFM entering air temperature at the evaporator at _____ °F/°C wet bulb and _____ °F/°C dry bulb, and air entering the unit at _____ °F/°C.
- The system will have a SEER of _____ Btuh/watt or greater at DOE conditions.

Electrical Requirements

- Nominal unit electrical characteristics will be _____ v, single phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- Nominal unit electrical characteristics will be _____ v, three phase, 60 hz. The unit will be capable of satisfactory operation within voltage limits of _____ v to _____ v.
- Unit electrical power will be single point connection.
- Control circuit will be 24v.

Special Features

- Refer to section of this literature identifying accessories and descriptions for specific features and available enhancements.

38HDR

SYSTEM DESIGN SUMMARY

1. Intended for outdoor installation with free air inlet and outlet. Outdoor fan external static pressure available is less than 0.01-in. wc.
2. Minimum outdoor operating air temperature without low-ambient operation accessory is 55°F (12.8°C).
3. Maximum outdoor operating air temperature is 125°F (51.7°C).
4. For reliable operation, unit should be level in all horizontal planes.
5. For interconnecting refrigerant tube lengths greater than 80 ft (23.4 m) and/or 35 ft (10.7 m) vertical differential, consult Residential Piping and Longline Guideline and Service Manual available from equipment distributor.
6. If any refrigerant tubing is buried, provide a 6 in. (152.4 mm) vertical rise to the valve connections at the unit. Refrigerant tubing lengths up to 36 in. (914.4 mm) may be buried without further consideration. Do not bury refrigerant lines longer than 36 in. (914.4 mm).
7. Use only copper wire for electric connection at unit. Aluminum and clad aluminum are not acceptable for the type of connector provided.
8. Do not apply capillary tube indoor coils to these units.
9. Factory-supplied filter drier must be installed.



Product Catalog

Packaged Rooftop Air Conditioners Precedent™ — Cooling and Gas/Electric 3 – 10 Tons — 60 Hz



Fan Performance

Table 136. Direct drive plenum fan settings (rpm vs. voltage)^{(a), (b)} (continued)

T/YHC092F, T/YHC102F, T/YSC120F, T/YHC120E	
Potentiometer Voltage	Motor RPM
4.00	929
4.25	995
4.50	1061
4.75	1126
5.00	1191
5.25	1253
5.50	1315
5.75	1374
6.00	1432
6.25	1487
6.50	1539
6.75	1588
7.00	1633
7.25	1675
7.50	1700

(a) See fan tables for unit rpm and cfm units.

(b) Factory setting is 5V.

Table 137. Outdoor sound power level - dB (ref. 10 - 12 W)

Tons	Unit Model Number	Octave Center Frequency								Overall dBA
		63	125	250	500	1000	2000	4000	8000	
3	T/YSC036E	79	85	79	79	77	71	67	58	81
4	T/YSC048E	82	84	83	80	76	72	66	58	82
5	T/YSC060E	85	82	81	81	77	72	67	61	82
6	T/YSC072F	91	95	90	87	84	79	75	68	89
7½	T/YSC090F	91	95	90	87	84	79	75	68	89
7½	T/YSC092F	92	96	92	89	85	80	76	69	91
8½	T/YSC102F	91	95	90	87	84	79	75	68	89
10	T/YSC120F	91	86	90	86	82	78	73	67	88
3	T/YHC036E	79	85	79	79	77	71	67	58	81
4	T/YHC048E	80	86	84	85	83	79	73	67	87
4	T/YHC048F	80	86	84	85	83	79	73	67	87
5	T/YHC060E	80	86	84	85	83	79	73	67	87
5	T/YHC060F	80	86	84	85	83	79	73	67	87
6	T/YHC072E,F	91	95	90	87	84	79	75	68	89
7½	T/YHC092F	91	86	90	86	82	78	73	67	88
8½	T/YHC102F	91	95	90	87	84	79	75	68	89
10	T/YHC120E	89	87	91	85	80	77	73	66	87

Note: Tests follow ARI270-95.

Appendix H

SoundPLAN Modeling Results

Evergreen Commercial Development Project Octave spectra of the sources in dB(A) - OFF Rec_V2

3

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
HVAC	Point				71.7	71.7	0.0	0.0		0	100%/24h	5-ton HVAC (Carrier 38HDR060)		46.9	52.9	60.8	66.5	67.2	65.5	54.4	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
HVAC	Point				70.0	70.0	0.0	0.0		0	100%/24h	3-ton HVAC (Carrier 38HDR036)		48.9	52.9	60.3	65.0	65.7	62.0	53.4	
HVAC	Point				70.0	70.0	0.0	0.0		0	100%/24h	3-ton HVAC (Carrier 38HDR036)		48.9	52.9	60.3	65.0	65.7	62.0	53.4	
HVAC	Point				70.0	70.0	0.0	0.0		0	100%/24h	3-ton HVAC (Carrier 38HDR036)		48.9	52.9	60.3	65.0	65.7	62.0	53.4	
HVAC	Point				70.0	70.0	0.0	0.0		0	100%/24h	3-ton HVAC (Carrier 38HDR036)		48.9	52.9	60.3	65.0	65.7	62.0	53.4	
HVAC	Point				71.7	71.7	0.0	0.0		0	100%/24h	5-ton HVAC (Carrier 38HDR060)		46.9	52.9	60.8	66.5	67.2	65.5	54.4	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
HVAC	Point				87.3	87.3	0.0	0.0		0	100%/24h	10-ton HVAC (Trane T/YHC120E)	62.8	70.9	82.4	81.8	80.0	78.2	74.0	64.9	
Blower 1	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Blower 1	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Blower 2	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Blower 2	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Blower 3	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Blower 3	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	

Rincon Consultants 9320 Chesapeake Drive, Suite 218 San Diego, CA 92123 USA

1

Evergreen Commercial Development Project

Octave spectra of the sources in dB(A) - OFF Rec_V2

3

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
Blower 4	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Blower 4	Point				102.5	102.5	0.0	0.0		0	100%/24h	Blower Exit	69.7	78.2	88.5	98.4	97.1	95.1	91.2	84.4	
Loading Dock	Point				86.1	86.1	0.0	0.0		0	fork lifter (loading)					86.1					
Loading Dock	Point				86.1	86.1	0.0	0.0		0	fork lifter (loading)					86.1					
Loading Dock	Point				86.1	86.1	0.0	0.0		0	fork lifter (loading)					86.1					
Speaker Box	Point				65.0	65.0	0.0	0.0		0	100%/24h					65.0					
Speaker Box	Point				65.0	65.0	0.0	0.0		0	100%/24h					65.0					
Speaker Box	Point				65.0	65.0	0.0	0.0		0	100%/24h					65.0					
Speaker Box	Point				65.0	65.0	0.0	0.0		0	100%/24h					65.0					
Vac1	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac2	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac3	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac4	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac5	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac6	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac7	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac8	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac9	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac10	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac11	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac12	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac13	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac14	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac15	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac16	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac17	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac18	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac19	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac20	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9

Evergreen Commercial Development Project Octave spectra of the sources in dB(A) - OFF Rec_V2

3

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
Vac21	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac22	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac23	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac24	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9
Vac25	Point				73.8	73.8	0.0	0.0		0	100%/24h	Vacuum	55.2	62.0	68.6	65.3	64.0	65.9	65.4	60.6	51.9

Evergreen Commercial Development Project
Assessed receiver spectra in dB(A) - OFF Rec_V2

Time slice	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz			
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)			
Receiver OFF1	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 47.2	dB(A)	Leq,d 40.9	dB(A)	Leq,n 40.8	dB(A)
Ldn	33.1	37.0	42.8	41.0	38.6	36.9	32.3	21.4	2.2			
Leq,d	26.7	30.6	36.4	34.8	32.2	30.5	25.9	15.0	-4.3			
Leq,n	26.7	30.6	36.4	34.5	32.2	30.5	25.9	15.0	-4.3			
Receiver OFF2	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 67.3	dB(A)	Leq,d 60.9	dB(A)	Leq,n 60.9	dB(A)
Ldn	37.5	42.3	48.4	61.7	63.2	61.1	55.7	44.3	7.3			
Leq,d	31.1	35.9	42.0	55.3	56.8	54.7	49.3	37.8	0.9			
Leq,n	31.1	35.9	42.0	55.3	56.8	54.7	49.3	37.8	0.9			
Receiver OFF3	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 58.7	dB(A)	Leq,d 52.3	dB(A)	Leq,n 52.2	dB(A)
Ldn	33.8	38.3	45.1	56.0	53.1	48.6	40.3	23.3	-28.8			
Leq,d	27.4	31.9	38.7	49.7	46.7	42.2	33.9	16.9	-35.2			
Leq,n	27.4	31.9	38.7	49.6	46.7	42.2	33.9	16.9	-35.2			
Receiver OFF4	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 59.2	dB(A)	Leq,d 52.8	dB(A)	Leq,n 52.7	dB(A)
Ldn	32.3	37.2	44.1	55.7	54.1	51.2	44.3	27.2	-33.6			
Leq,d	25.9	30.8	37.7	49.4	47.7	44.8	37.9	20.8	-40.1			
Leq,n	25.9	30.8	37.7	49.3	47.7	44.8	37.9	20.8	-40.1			
Receiver OFF5	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 44.9	dB(A)	Leq,d 38.5	dB(A)	Leq,n 38.5	dB(A)
Ldn	26.1	29.8	39.8	41.1	37.1	32.1	23.0	2.6	-87.1			
Leq,d	19.7	23.4	33.3	34.7	30.7	25.7	16.6	-3.8	-93.5			
Leq,n	19.7	23.4	33.3	34.7	30.7	25.7	16.6	-3.8	-93.5			
Receiver OFF6	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 46.5	dB(A)	Leq,d 40.1	dB(A)	Leq,n 40.1	dB(A)
Ldn	28.0	31.0	39.8	41.4	37.0	41.0	31.9	9.0	-76.6			
Leq,d	21.6	24.5	33.4	35.0	30.6	34.6	25.5	2.6	-83.0			
Leq,n	21.6	24.5	33.4	35.0	30.6	34.6	25.5	2.6	-83.0			
Receiver OFF7	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 65.6	dB(A)	Leq,d 59.2	dB(A)	Leq,n 59.2	dB(A)
Ldn	36.7	37.3	41.0	54.6	62.8	60.5	53.9	37.9	-7.4			
Leq,d	30.3	30.9	34.5	48.2	56.4	54.1	47.5	31.5	-13.8			
Leq,n	30.3	30.9	34.5	48.2	56.4	54.1	47.5	31.5	-13.8			
Receiver OFF8	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 52.5	dB(A)	Leq,d 46.1	dB(A)	Leq,n 46.1	dB(A)
Ldn	24.3	26.6	33.2	36.4	50.4	47.4	37.6	11.6	-36.0			
Leq,d	17.9	20.2	26.8	30.0	44.0	41.0	31.2	5.2	-42.4			
Leq,n	17.9	20.2	26.8	30.0	44.0	41.0	31.2	5.2	-42.4			
Receiver OFF9	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 40.2	dB(A)	Leq,d 33.8	dB(A)	Leq,n 33.8	dB(A)
Ldn	22.9	25.3	33.4	35.7	34.2	31.0	22.9	0.4	-82.2			
Leq,d	16.5	18.9	27.0	29.3	27.8	24.6	16.5	-6.0	-88.6			
Leq,n	16.5	18.9	27.0	29.3	27.8	24.6	16.5	-6.0	-88.6			
Receiver OFF10	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 54.4	dB(A)	Leq,d 48.0	dB(A)	Leq,n 48.0	dB(A)
Ldn	27.7	31.0	38.7	49.0	50.4	48.2	39.4	15.5	-71.9			
Leq,d	21.3	24.6	32.3	42.6	44.0	41.8	32.9	9.1	-78.3			
Leq,n	21.3	24.6	32.3	42.6	44.0	41.8	32.9	9.1	-78.3			

Evergreen Commercial Development Project
Assessed receiver spectra in dB(A) - Operation_V2_MM

Time slice	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	16kHz
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver OFF1	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 47.2 dB(A)	Leq,d 40.9 dB(A)	Leq,n 40.8 dB(A)
Ldn	33.1	37.0	42.8	41.0	38.6	36.9	32.3	21.4	2.2
Leq,d	26.7	30.6	36.4	34.8	32.2	30.5	25.9	15.0	-4.3
Leq,n	26.7	30.6	36.4	34.5	32.2	30.5	25.9	15.0	-4.3
Receiver OFF2	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 59.3 dB(A)	Leq,d 52.9 dB(A)	Leq,n 52.9 dB(A)
Ldn	34.5	38.6	47.1	56.6	53.7	49.5	42.8	30.8	7.4
Leq,d	28.0	32.2	40.7	50.2	47.2	43.1	36.4	24.4	1.0
Leq,n	28.0	32.2	40.7	50.2	47.2	43.1	36.4	24.4	1.0
Receiver OFF3	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 52.1 dB(A)	Leq,d 45.8 dB(A)	Leq,n 45.7 dB(A)
Ldn	32.2	35.6	43.4	49.5	45.4	40.1	31.5	14.6	-28.8
Leq,d	25.8	29.2	37.0	43.2	39.0	33.7	25.0	8.1	-35.2
Leq,n	25.8	29.2	37.0	43.1	39.0	33.7	25.0	8.1	-35.2
Receiver OFF4	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 54.2 dB(A)	Leq,d 47.9 dB(A)	Leq,n 47.8 dB(A)
Ldn	31.5	35.7	44.0	51.2	48.3	44.6	37.1	19.4	-33.6
Leq,d	25.1	29.3	37.6	45.0	41.9	38.2	30.7	13.0	-40.1
Leq,n	25.1	29.3	37.6	44.7	41.9	38.2	30.7	13.0	-40.1
Receiver OFF5	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 45.9 dB(A)	Leq,d 39.5 dB(A)	Leq,n 39.5 dB(A)
Ldn	26.1	29.8	40.0	42.6	38.5	33.2	23.7	2.9	-87.1
Leq,d	19.7	23.4	33.6	36.2	32.0	26.8	17.2	-3.5	-93.6
Leq,n	19.7	23.4	33.6	36.2	32.0	26.8	17.2	-3.5	-93.6
Receiver OFF6	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 48.1 dB(A)	Leq,d 41.7 dB(A)	Leq,n 41.7 dB(A)
Ldn	28.0	31.1	40.1	43.2	38.7	43.4	34.2	10.5	-76.6
Leq,d	21.6	24.7	33.7	36.8	32.3	37.0	27.8	4.1	-83.0
Leq,n	21.6	24.7	33.7	36.8	32.3	37.0	27.8	4.1	-83.0
Receiver OFF7	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 65.6 dB(A)	Leq,d 59.2 dB(A)	Leq,n 59.2 dB(A)
Ldn	36.7	37.3	41.0	54.6	62.8	60.5	53.9	37.9	-7.4
Leq,d	30.3	30.9	34.5	48.2	56.4	54.1	47.5	31.5	-13.8
Leq,n	30.3	30.9	34.5	48.2	56.4	54.1	47.5	31.5	-13.8
Receiver OFF8	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 54.0 dB(A)	Leq,d 47.5 dB(A)	Leq,n 47.5 dB(A)
Ldn	24.3	26.6	33.2	36.4	51.8	49.1	39.1	12.4	-36.0
Leq,d	17.9	20.2	26.8	30.0	45.4	42.7	32.7	5.9	-42.4
Leq,n	17.9	20.2	26.8	30.0	45.4	42.7	32.7	5.9	-42.4
Receiver OFF9	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 44.6 dB(A)	Leq,d 38.2 dB(A)	Leq,n 38.2 dB(A)
Ldn	22.9	25.3	33.4	35.7	41.6	38.6	29.1	3.0	-82.3
Leq,d	16.5	18.9	27.0	29.3	35.2	32.2	22.7	-3.4	-88.7
Leq,n	16.5	18.9	27.0	29.3	35.2	32.2	22.7	-3.4	-88.7
Receiver OFF10	FI G	dB(A)	Lr,lim	dB(A)	Lr,lim	dB(A)	Ldn 56.2 dB(A)	Leq,d 49.8 dB(A)	Leq,n 49.8 dB(A)
Ldn	27.7	31.0	38.7	50.0	52.7	50.3	41.5	17.5	-83.9
Leq,d	21.3	24.6	32.3	43.6	46.3	43.9	35.1	11.1	-90.4
Leq,n	21.3	24.6	32.3	43.6	46.3	43.9	35.1	11.1	-90.4

Appendix I

Traffic Noise Modeling Results

Appendix I

Model Input

Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

rincon

Model Results

Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	68.8	0.0	0.0	58.9	60.7	69.8
2	Riverside Drive	Strickland Avenue	to the west	68.4	0.0	0.0	58.5	60.4	69.4
3	Collier Avenue	Riverside Drive	Central Avenue	69.0	0.0	0.0	56.2	67.0	71.3
4	Central Avenue	Collier Avenue	I-15 on ramps	69.5	0.0	0.0	56.7	67.5	71.8
5	Central Avenue	Dexter Avenue	Cambern Avenue	71.7	0.0	0.0	58.6	69.2	73.8
6	Central Avenue	Cambern Avenue	Driveway 4	70.8	0.0	0.0	57.7	68.4	72.9
7	Central Avenue	Driveway 4	Driveway 5	70.8	0.0	0.0	57.7	68.4	72.9
8	Central Avenue	Driveway 5	Conrad Avenue	70.8	0.0	0.0	57.7	68.4	72.9
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	72.7	0.0	0.0	58.9	69.4	74.5
10	Central Avenue	Rosetta Canyon Road	to the east	73.2	0.0	0.0	59.2	69.5	74.9
11	Camiono Del Norte	Main Street	2nd Street	67.4	0.0	0.0	56.6	58.0	68.2
12	Dexter Avenue	2nd Street	3rd Street	64.3	0.0	0.0	54.4	56.2	65.3
13	Dexter Avenue	3rd Street	Central Avenue	63.0	0.0	0.0	53.1	54.9	64.0
14	Dexter Avenue	Central Avenue	to the north	67.3	0.0	0.0	57.2	58.8	68.3
15	3rd Street	Dexter Avenue	Cambern Avenue	58.5	0.0	0.0	48.9	51.4	59.6
16	3rd Street	Cambern Avenue	Conrad Avenue	52.5	0.0	0.0	42.9	45.5	53.7
17	Cambern Avenue	3rd Street	Driveway 3	58.3	0.0	0.0	48.4	50.2	59.3
18	Cambern Avenue	Driveway3	Driveway 2	58.3	0.0	0.0	48.4	50.2	59.3
19	Cambern Avenue	Driveway 2	Driveway 1	58.3	0.0	0.0	48.4	50.2	59.3
20	Cambern Avenue	Driveway 1	Central Avenue	58.3	0.0	0.0	48.4	50.2	59.3
21	Conrad Avenue	Central Avenue	3rd Street	55.4	0.0	0.0	45.8	48.3	56.6
22	Rosetta Canyon Road	Central Avenue	to the south	61.5	0.0	0.0	51.6	53.4	62.5

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
49	105	225	486	1,046
46	99	213	459	989
61	131	283	610	1,314
66	142	305	657	1,416
89	192	414	893	1,924
78	169	364	784	1,690
78	169	364	784	1,690
78	169	364	784	1,690
99	214	460	992	2,137
105	227	489	1,053	2,269
38	81	175	377	812
24	52	112	242	522
20	43	93	200	430
38	82	178	383	824
10	22	47	102	219
4	9	19	41	88
10	21	45	97	208
10	21	45	97	208
10	21	45	97	208
10	21	45	97	208
6	14	29	63	137
16	34	73	158	340

Appendix I

Model Input

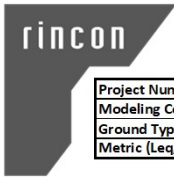
Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Project (Phase 1)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

Model Results



Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Project (Phase 1)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	68.9	0.0	0.0	58.9	60.8	69.8
2	Riverside Drive	Strickland Avenue	to the west	68.5	0.0	0.0	58.6	60.4	69.5
3	Collier Avenue	Riverside Drive	Central Avenue	69.1	0.0	0.0	56.2	67.1	71.3
4	Central Avenue	Collier Avenue	I-15 on ramps	69.6	0.0	0.0	56.7	67.6	71.8
5	Central Avenue	Dexter Avenue	Cambern Avenue	71.8	0.0	0.0	58.7	69.4	73.9
6	Central Avenue	Cambern Avenue	Driveway 4	70.9	0.0	0.0	57.8	68.5	73.0
7	Central Avenue	Driveway 4	Driveway 5	70.9	0.0	0.0	57.8	68.4	73.0
8	Central Avenue	Driveway 5	Conrad Avenue	70.9	0.0	0.0	57.8	68.4	73.0
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	72.7	0.0	0.0	59.0	69.4	74.5
10	Central Avenue	Rosetta Canyon Road	to the east	73.2	0.0	0.0	59.2	69.5	74.9
11	Camiono Del Norte	Main Street	2nd Street	67.5	0.0	0.0	56.7	58.1	68.3
12	Dexter Avenue	2nd Street	3rd Street	64.4	0.0	0.0	54.5	56.3	65.4
13	Dexter Avenue	3rd Street	Central Avenue	63.1	0.0	0.0	53.2	55.0	64.1
14	Dexter Avenue	Central Avenue	to the north	67.4	0.0	0.0	57.2	58.8	68.3
15	3rd Street	Dexter Avenue	Cambern Avenue	58.6	0.0	0.0	49.0	51.6	59.8
16	3rd Street	Cambern Avenue	Conrad Avenue	53.0	0.0	0.0	43.4	45.9	54.1
17	Cambern Avenue	3rd Street	Driveway 3	58.5	0.0	0.0	48.5	50.4	59.4
18	Cambern Avenue	Driveway3	Driveway 2	58.5	0.0	0.0	48.5	50.4	59.4
19	Cambern Avenue	Driveway 2	Driveway 1	58.5	0.0	0.0	48.5	50.4	59.4
20	Cambern Avenue	Driveway 1	Central Avenue	59.4	0.0	0.0	49.5	51.3	60.4
21	Conrad Avenue	Central Avenue	3rd Street	55.6	0.0	0.0	46.0	48.6	56.8
22	Rosetta Canyon Road	Central Avenue	to the south	61.5	0.0	0.0	51.6	53.4	62.5

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
49	105	227	489	1,053
46	99	214	461	993
61	132	285	614	1,324
66	143	308	663	1,428
91	196	422	910	1,960
79	171	369	795	1,712
79	170	367	790	1,702
79	170	366	789	1,700
100	214	462	996	2,145
106	228	491	1,057	2,277
38	83	178	383	825
25	53	114	247	531
20	44	94	202	435
38	83	178	384	827
10	23	49	105	225
4	9	20	44	94
10	21	46	99	213
10	21	46	99	213
10	21	46	99	213
12	25	53	115	248
7	14	31	66	142
16	34	74	159	342

Appendix I

Model Input

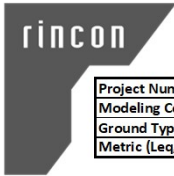
Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Project (Buildout)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

Model Results



Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Project (Buildout)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	68.9	0.0	0.0	59.0	60.8	69.9
2	Riverside Drive	Strickland Avenue	to the west	68.5	0.0	0.0	58.6	60.4	69.5
3	Collier Avenue	Riverside Drive	Central Avenue	69.1	0.0	0.0	56.3	67.2	71.4
4	Central Avenue	Collier Avenue	I-15 on ramps	69.6	0.0	0.0	56.8	67.7	71.9
5	Central Avenue	Dexter Avenue	Cambern Avenue	72.0	0.0	0.0	58.9	69.5	74.1
6	Central Avenue	Cambern Avenue	Driveway 4	71.0	0.0	0.0	57.9	68.5	73.1
7	Central Avenue	Driveway 4	Driveway 5	70.9	0.0	0.0	57.8	68.4	73.0
8	Central Avenue	Driveway 5	Conrad Avenue	70.9	0.0	0.0	57.8	68.5	73.0
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	72.7	0.0	0.0	59.0	69.4	74.5
10	Central Avenue	Rosetta Canyon Road	to the east	73.2	0.0	0.0	59.2	69.6	74.9
11	Camiono Del Norte	Main Street	2nd Street	67.6	0.0	0.0	56.8	58.2	68.4
12	Dexter Avenue	2nd Street	3rd Street	64.6	0.0	0.0	54.7	56.5	65.6
13	Dexter Avenue	3rd Street	Central Avenue	63.2	0.0	0.0	53.3	55.1	64.2
14	Dexter Avenue	Central Avenue	to the north	67.4	0.0	0.0	57.2	58.8	68.3
15	3rd Street	Dexter Avenue	Cambern Avenue	58.9	0.0	0.0	49.3	51.9	60.1
16	3rd Street	Cambern Avenue	Conrad Avenue	53.0	0.0	0.0	43.4	45.9	54.1
17	Cambern Avenue	3rd Street	Driveway 3	58.9	0.0	0.0	49.0	50.8	59.9
18	Cambern Avenue	Driveway3	Driveway 2	59.1	0.0	0.0	49.2	51.0	60.1
19	Cambern Avenue	Driveway 2	Driveway 1	60.1	0.0	0.0	50.2	52.0	61.1
20	Cambern Avenue	Driveway 1	Central Avenue	61.0	0.0	0.0	51.1	52.9	62.0
21	Conrad Avenue	Central Avenue	3rd Street	55.4	0.0	0.0	45.8	48.4	56.6
22	Rosetta Canyon Road	Central Avenue	to the south	61.6	0.0	0.0	51.7	53.5	62.6

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
49	106	229	493	1,062
46	100	215	464	1,000
62	134	288	620	1,336
67	144	311	670	1,444
93	201	433	933	2,009
80	172	371	799	1,721
79	170	366	789	1,700
79	171	368	793	1,709
100	216	465	1,002	2,158
106	229	493	1,062	2,289
39	84	182	392	844
25	54	117	253	545
21	44	96	206	444
39	83	179	386	832
11	24	51	109	235
4	9	20	44	94
11	23	49	106	227
11	23	51	109	234
13	28	60	128	276
15	32	68	147	317
6	14	30	64	138
16	35	75	161	346

Appendix I

Model Input

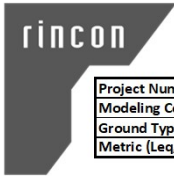
Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Ambient Growth (2023)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

Model Results



Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Ambient Growth (2023)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	69.1	0.0	0.0	59.2	61.0	70.1
2	Riverside Drive	Strickland Avenue	to the west	68.7	0.0	0.0	58.8	60.6	69.7
3	Collier Avenue	Riverside Drive	Central Avenue	69.3	0.0	0.0	56.5	67.3	71.6
4	Central Avenue	Collier Avenue	I-15 on ramps	69.8	0.0	0.0	57.0	67.8	72.1
5	Central Avenue	Dexter Avenue	Cambern Avenue	72.1	0.0	0.0	59.0	69.7	74.2
6	Central Avenue	Cambern Avenue	Driveway 4	71.1	0.0	0.0	58.0	68.7	73.2
7	Central Avenue	Driveway 4	Driveway 5	71.1	0.0	0.0	58.0	68.6	73.1
8	Central Avenue	Driveway 5	Conrad Avenue	71.1	0.0	0.0	58.0	68.6	73.2
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	72.9	0.0	0.0	59.2	69.6	74.7
10	Central Avenue	Rosetta Canyon Road	to the east	73.4	0.0	0.0	59.4	69.7	75.1
11	Camiono Del Norte	Main Street	2nd Street	67.8	0.0	0.0	57.0	58.4	68.6
12	Dexter Avenue	2nd Street	3rd Street	64.7	0.0	0.0	54.8	56.6	65.7
13	Dexter Avenue	3rd Street	Central Avenue	63.4	0.0	0.0	53.5	55.3	64.4
14	Dexter Avenue	Central Avenue	to the north	67.6	0.0	0.0	57.4	59.0	68.5
15	3rd Street	Dexter Avenue	Cambern Avenue	59.1	0.0	0.0	49.5	52.0	60.2
16	3rd Street	Cambern Avenue	Conrad Avenue	52.7	0.0	0.0	43.1	45.6	53.8
17	Cambern Avenue	3rd Street	Driveway 3	59.0	0.0	0.0	49.1	50.9	60.0
18	Cambern Avenue	Driveway3	Driveway 2	59.2	0.0	0.0	49.3	51.1	60.2
19	Cambern Avenue	Driveway 2	Driveway 1	60.3	0.0	0.0	50.4	52.2	61.3
20	Cambern Avenue	Driveway 1	Central Avenue	61.1	0.0	0.0	51.2	53.1	62.1
21	Conrad Avenue	Central Avenue	3rd Street	55.5	0.0	0.0	45.9	48.5	56.7
22	Rosetta Canyon Road	Central Avenue	to the south	61.8	0.0	0.0	51.9	53.7	62.8

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
51	109	235	506	1,091
48	103	221	476	1,026
64	137	296	637	1,372
69	148	319	688	1,482
96	206	444	957	2,062
82	177	380	820	1,766
81	175	376	810	1,745
81	176	378	815	1,755
103	221	477	1,028	2,215
109	235	506	1,090	2,349
40	87	187	402	867
26	56	120	259	559
21	45	98	211	455
40	85	184	396	854
11	24	52	112	241
4	9	19	42	90
11	23	50	108	232
11	24	51	111	238
13	28	61	131	282
15	32	69	150	322
6	14	30	65	140
16	35	76	164	354

Appendix I

Model Input

Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Ambient Growth Plus Phase 1 (2023)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

rincon

Model Results

Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Ambient Growth Plus Phase 1 (2023)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	69.1	0.0	0.0	59.2	61.0	70.1
2	Riverside Drive	Strickland Avenue	to the west	68.7	0.0	0.0	58.8	60.6	69.7
3	Collier Avenue	Riverside Drive	Central Avenue	69.4	0.0	0.0	56.5	67.4	71.6
4	Central Avenue	Collier Avenue	I-15 on ramps	69.9	0.0	0.0	57.0	67.9	72.1
5	Central Avenue	Dexter Avenue	Cambern Avenue	72.2	0.0	0.0	59.1	69.8	74.3
6	Central Avenue	Cambern Avenue	Driveway 4	71.2	0.0	0.0	58.1	68.8	73.3
7	Central Avenue	Driveway 4	Driveway 5	71.1	0.0	0.0	58.0	68.7	73.2
8	Central Avenue	Driveway 5	Conrad Avenue	71.1	0.0	0.0	58.0	68.7	73.2
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	72.9	0.0	0.0	59.2	69.6	74.7
10	Central Avenue	Rosetta Canyon Road	to the east	73.4	0.0	0.0	59.4	69.8	75.1
11	Camiono Del Norte	Main Street	2nd Street	67.9	0.0	0.0	57.1	58.5	68.7
12	Dexter Avenue	2nd Street	3rd Street	64.8	0.0	0.0	54.9	56.7	65.8
13	Dexter Avenue	3rd Street	Central Avenue	63.5	0.0	0.0	53.5	55.4	64.5
14	Dexter Avenue	Central Avenue	to the north	67.6	0.0	0.0	57.4	59.0	68.5
15	3rd Street	Dexter Avenue	Cambern Avenue	59.2	0.0	0.0	49.6	52.2	60.4
16	3rd Street	Cambern Avenue	Conrad Avenue	53.1	0.0	0.0	43.5	46.1	54.3
17	Cambern Avenue	3rd Street	Driveway 3	59.1	0.0	0.0	49.2	51.0	60.1
18	Cambern Avenue	Driveway3	Driveway 2	59.3	0.0	0.0	49.4	51.2	60.3
19	Cambern Avenue	Driveway 2	Driveway 1	60.4	0.0	0.0	50.5	52.3	61.4
20	Cambern Avenue	Driveway 1	Central Avenue	61.8	0.0	0.0	51.9	53.7	62.8
21	Conrad Avenue	Central Avenue	3rd Street	55.8	0.0	0.0	46.2	48.7	56.9
22	Rosetta Canyon Road	Central Avenue	to the south	61.9	0.0	0.0	52.0	53.8	62.9

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
51	110	236	509	1,097
48	103	222	478	1,030
64	138	298	641	1,382
69	149	322	693	1,494
97	210	452	974	2,098
83	179	385	830	1,788
82	176	379	815	1,757
82	177	380	820	1,766
103	222	479	1,032	2,223
109	236	508	1,094	2,357
41	88	189	408	880
26	57	122	264	568
21	46	99	213	460
40	86	185	398	856
11	25	53	115	247
4	10	21	45	96
11	24	51	110	237
11	24	52	113	243
13	29	62	133	287
16	35	76	165	355
7	14	31	67	145
17	36	78	167	360

Appendix I

Model Input

Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Ambient Growth Plus Buildout (2023)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model



Model Results

Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Ambient Growth Plus Buildout (2023)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	69.2	0.0	0.0	59.3	61.1	70.2
2	Riverside Drive	Strickland Avenue	to the west	68.8	0.0	0.0	58.8	60.7	69.7
3	Collier Avenue	Riverside Drive	Central Avenue	69.4	0.0	0.0	56.6	67.4	71.7
4	Central Avenue	Collier Avenue	I-15 on ramps	70.0	0.0	0.0	57.2	68.0	72.2
5	Central Avenue	Dexter Avenue	Cambern Avenue	72.4	0.0	0.0	59.3	70.0	74.5
6	Central Avenue	Cambern Avenue	Driveway 4	71.2	0.0	0.0	58.1	68.8	73.3
7	Central Avenue	Driveway 4	Driveway 5	71.1	0.0	0.0	58.0	68.6	73.2
8	Central Avenue	Driveway 5	Conrad Avenue	71.2	0.0	0.0	58.1	68.7	73.3
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	73.0	0.0	0.0	59.2	69.7	74.8
10	Central Avenue	Rosetta Canyon Road	to the east	73.5	0.0	0.0	59.4	69.8	75.1
11	Camiono Del Norte	Main Street	2nd Street	68.0	0.0	0.0	57.2	58.6	68.8
12	Dexter Avenue	2nd Street	3rd Street	65.0	0.0	0.0	55.1	56.9	66.0
13	Dexter Avenue	3rd Street	Central Avenue	63.6	0.0	0.0	53.7	55.5	64.6
14	Dexter Avenue	Central Avenue	to the north	67.6	0.0	0.0	57.4	59.1	68.5
15	3rd Street	Dexter Avenue	Cambern Avenue	59.5	0.0	0.0	49.9	52.4	60.6
16	3rd Street	Cambern Avenue	Conrad Avenue	53.1	0.0	0.0	43.5	46.1	54.3
17	Cambern Avenue	3rd Street	Driveway 3	59.5	0.0	0.0	49.6	51.4	60.5
18	Cambern Avenue	Driveway3	Driveway 2	59.8	0.0	0.0	49.9	51.7	60.8
19	Cambern Avenue	Driveway 2	Driveway 1	61.5	0.0	0.0	51.6	53.4	62.5
20	Cambern Avenue	Driveway 1	Central Avenue	62.2	0.0	0.0	52.3	54.1	63.2
21	Conrad Avenue	Central Avenue	3rd Street	55.8	0.0	0.0	46.2	48.7	56.9
22	Rosetta Canyon Road	Central Avenue	to the south	62.0	0.0	0.0	52.1	53.9	63.0

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
51	111	238	514	1,107
48	104	223	481	1,037
65	139	300	647	1,394
71	152	328	706	1,521
100	215	462	996	2,145
83	180	387	834	1,796
81	176	378	815	1,756
82	177	382	824	1,775
104	224	482	1,038	2,236
110	237	510	1,099	2,368
42	90	194	417	898
27	58	125	270	581
22	47	101	217	468
40	86	185	399	861
12	26	55	119	256
4	10	21	45	96
12	25	54	116	250
12	26	57	122	263
16	34	74	159	342
18	38	82	176	379
7	14	31	67	145
17	37	79	170	367

Appendix I

Model Input

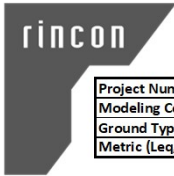
Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Ambient Growth Plus Cumulative (2023)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

Model Results



Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Ambient Growth Plus Cumulative (2023)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	69.9	0.0	0.0	60.0	61.8	70.9
2	Riverside Drive	Strickland Avenue	to the west	69.3	0.0	0.0	59.4	61.2	70.3
3	Collier Avenue	Riverside Drive	Central Avenue	70.1	0.0	0.0	57.3	68.2	72.4
4	Central Avenue	Collier Avenue	I-15 on ramps	70.8	0.0	0.0	58.0	68.9	73.1
5	Central Avenue	Dexter Avenue	Cambern Avenue	73.0	0.0	0.0	59.9	70.5	75.1
6	Central Avenue	Cambern Avenue	Driveway 4	72.0	0.0	0.0	58.9	69.5	74.1
7	Central Avenue	Driveway 4	Driveway 5	71.9	0.0	0.0	58.8	69.5	74.0
8	Central Avenue	Driveway 5	Conrad Avenue	71.9	0.0	0.0	58.8	69.5	74.0
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	73.7	0.0	0.0	60.0	70.4	75.5
10	Central Avenue	Rosetta Canyon Road	to the east	73.9	0.0	0.0	59.9	70.3	75.6
11	Camiono Del Norte	Main Street	2nd Street	68.3	0.0	0.0	57.5	58.9	69.1
12	Dexter Avenue	2nd Street	3rd Street	65.3	0.0	0.0	55.4	57.2	66.3
13	Dexter Avenue	3rd Street	Central Avenue	63.4	0.0	0.0	53.5	55.3	64.4
14	Dexter Avenue	Central Avenue	to the north	68.0	0.0	0.0	57.8	59.4	68.9
15	3rd Street	Dexter Avenue	Cambern Avenue	60.6	0.0	0.0	51.0	53.6	61.8
16	3rd Street	Cambern Avenue	Conrad Avenue	55.7	0.0	0.0	46.1	48.7	56.9
17	Cambern Avenue	3rd Street	Driveway 3	62.8	0.0	0.0	52.9	54.7	63.8
18	Cambern Avenue	Driveway3	Driveway 2	62.9	0.0	0.0	53.0	54.8	63.9
19	Cambern Avenue	Driveway 2	Driveway 1	63.4	0.0	0.0	53.5	55.3	64.4
20	Cambern Avenue	Driveway 1	Central Avenue	63.8	0.0	0.0	53.9	55.8	64.8
21	Conrad Avenue	Central Avenue	3rd Street	56.3	0.0	0.0	46.7	49.3	57.5
22	Rosetta Canyon Road	Central Avenue	to the south	64.2	0.0	0.0	54.3	56.1	65.2

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
57	123	265	570	1,229
52	112	242	522	1,124
72	156	336	723	1,558
81	174	374	806	1,737
109	235	506	1,090	2,348
93	201	433	933	2,009
92	199	429	924	1,990
93	200	431	928	2,000
116	251	541	1,165	2,510
118	255	549	1,184	2,550
44	94	202	436	939
28	61	131	283	610
21	45	98	211	455
42	91	195	421	907
14	30	66	142	305
7	14	31	67	144
19	42	90	194	417
20	42	91	196	422
21	46	98	212	456
23	49	105	226	488
7	16	34	73	158
24	52	112	240	518

Appendix I

Model Input

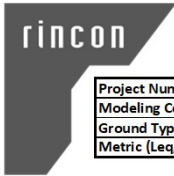
Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Ambient Growth Plus Cumulative Plus Phase 1 (2023)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

Model Results



Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Ambient Growth Plus Cumulative Plus Phase 1 (2023)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	69.9	0.0	0.0	60.0	61.8	70.9
2	Riverside Drive	Strickland Avenue	to the west	69.3	0.0	0.0	59.4	61.2	70.3
3	Collier Avenue	Riverside Drive	Central Avenue	70.2	0.0	0.0	57.3	68.2	72.4
4	Central Avenue	Collier Avenue	I-15 on ramps	70.9	0.0	0.0	58.1	68.9	73.2
5	Central Avenue	Dexter Avenue	Cambern Avenue	73.1	0.0	0.0	60.0	70.6	75.2
6	Central Avenue	Cambern Avenue	Driveway 4	72.0	0.0	0.0	58.9	69.6	74.1
7	Central Avenue	Driveway 4	Driveway 5	71.9	0.0	0.0	58.8	69.5	74.0
8	Central Avenue	Driveway 5	Conrad Avenue	72.0	0.0	0.0	58.9	69.5	74.1
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	73.7	0.0	0.0	60.0	70.4	75.5
10	Central Avenue	Rosetta Canyon Road	to the east	74.0	0.0	0.0	59.9	70.3	75.6
11	Camiono Del Norte	Main Street	2nd Street	68.4	0.0	0.0	57.6	59.0	69.2
12	Dexter Avenue	2nd Street	3rd Street	65.4	0.0	0.0	55.5	57.3	66.4
13	Dexter Avenue	3rd Street	Central Avenue	63.5	0.0	0.0	53.5	55.4	64.5
14	Dexter Avenue	Central Avenue	to the north	68.0	0.0	0.0	57.8	59.4	68.9
15	3rd Street	Dexter Avenue	Cambern Avenue	60.7	0.0	0.0	51.1	53.7	61.9
16	3rd Street	Cambern Avenue	Conrad Avenue	56.0	0.0	0.0	46.4	48.9	57.1
17	Cambern Avenue	3rd Street	Driveway 3	62.9	0.0	0.0	53.0	54.8	63.9
18	Cambern Avenue	Driveway3	Driveway 2	63.0	0.0	0.0	53.0	54.9	63.9
19	Cambern Avenue	Driveway 2	Driveway 1	63.5	0.0	0.0	53.5	55.4	64.4
20	Cambern Avenue	Driveway 1	Central Avenue	64.2	0.0	0.0	54.3	56.1	65.2
21	Conrad Avenue	Central Avenue	3rd Street	56.5	0.0	0.0	46.9	49.5	57.7
22	Rosetta Canyon Road	Central Avenue	to the south	64.3	0.0	0.0	54.3	56.2	65.3

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
57	123	266	573	1,235
52	113	243	524	1,128
73	157	338	727	1,567
81	175	377	811	1,748
111	238	513	1,105	2,381
94	203	437	942	2,030
93	200	431	929	2,001
93	201	433	933	2,009
117	252	542	1,169	2,517
119	256	551	1,187	2,558
44	95	205	441	951
29	62	133	287	618
21	46	99	213	460
42	91	196	422	910
14	31	67	144	310
7	15	32	69	149
20	42	91	195	421
20	43	92	197	425
21	46	99	213	459
24	51	111	239	515
8	16	35	76	163
24	52	112	241	520

Appendix I

Model Input

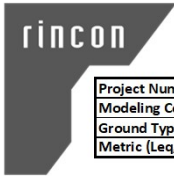
Project Name :	Evergreen Commercial Development Project		
Project Number :	21-10899		
Modeling Condition :	Existing Plus Ambient Growth Plus Cumulative Plus Buildout (2023)		
Ground Type :	Soft	Peak ratio to ADT:	
Metric [L_{eq} , L_{dn} , CNEL] :	Ldn	Traffic Desc. (Peak or ADT) :	ADT

[illegible]

Appendix I

Rincon FHWA Traffic Noise Model

Model Results



Project Number :	Evergreen Commercial Development Project
Modeling Condition :	21-10899
Ground Type :	Existing Plus Ambient Growth Plus Cumulative Plus Buildout (2023)
Metric (Leq, Ldn, CNEL) :	Ldn

Segment Number	Roadway	Segment		Noise Levels (dB) Ldn					
		From	To	Automobiles	Motorcycles	Bus	Medium Trucks	Heavy Trucks	Total
1	Riverside Drive	Strickland Avenue	Collier Avenue	69.9	0.0	0.0	60.0	61.8	70.9
2	Riverside Drive	Strickland Avenue	to the west	69.3	0.0	0.0	59.4	61.3	70.3
3	Collier Avenue	Riverside Drive	Central Avenue	70.2	0.0	0.0	57.4	68.2	72.5
4	Central Avenue	Collier Avenue	I-15 on ramps	70.9	0.0	0.0	58.1	69.0	73.2
5	Central Avenue	Dexter Avenue	Cambern Avenue	73.2	0.0	0.0	60.1	70.8	75.3
6	Central Avenue	Cambern Avenue	Driveway 4	72.1	0.0	0.0	59.0	69.6	74.2
7	Central Avenue	Driveway 4	Driveway 5	71.9	0.0	0.0	58.8	69.5	74.0
8	Central Avenue	Driveway 5	Conrad Avenue	72.0	0.0	0.0	58.9	69.6	74.1
9	Central Avenue	Conrad Avenue	Rosetta Canyon Road	73.8	0.0	0.0	60.0	70.5	75.6
10	Central Avenue	Rosetta Canyon Road	to the east	74.0	0.0	0.0	60.0	70.3	75.7
11	Camiono Del Norte	Main Street	2nd Street	68.5	0.0	0.0	57.7	59.1	69.3
12	Dexter Avenue	2nd Street	3rd Street	65.5	0.0	0.0	55.6	57.4	66.5
13	Dexter Avenue	3rd Street	Central Avenue	63.6	0.0	0.0	53.7	55.5	64.6
14	Dexter Avenue	Central Avenue	to the north	68.0	0.0	0.0	57.8	59.5	68.9
15	3rd Street	Dexter Avenue	Cambern Avenue	60.9	0.0	0.0	51.3	53.9	62.1
16	3rd Street	Cambern Avenue	Conrad Avenue	56.0	0.0	0.0	46.4	48.9	57.1
17	Cambern Avenue	3rd Street	Driveway 3	63.0	0.0	0.0	53.1	54.9	64.0
18	Cambern Avenue	Driveway3	Driveway 2	63.2	0.0	0.0	53.3	55.1	64.2
19	Cambern Avenue	Driveway 2	Driveway 1	64.1	0.0	0.0	54.2	56.0	65.1
20	Cambern Avenue	Driveway 1	Central Avenue	64.4	0.0	0.0	54.5	56.3	65.4
21	Conrad Avenue	Central Avenue	3rd Street	56.5	0.0	0.0	46.9	49.5	57.7
22	Rosetta Canyon Road	Central Avenue	to the south	64.3	0.0	0.0	54.4	56.2	65.3

Distance to Traffic Noise Contours (feet)				
70 dB	65 dB	60 dB	55 dB	50 dB
58	124	268	577	1,244
53	113	244	527	1,135
73	158	340	733	1,579
82	176	380	818	1,762
113	243	523	1,126	2,426
95	204	439	946	2,038
93	200	431	928	2,000
94	202	435	936	2,017
117	253	545	1,174	2,530
119	257	553	1,192	2,569
45	97	209	450	969
29	63	136	293	631
22	47	101	217	468
42	91	197	424	914
15	32	69	148	319
7	15	32	69	149
20	43	93	200	431
20	44	95	205	441
23	50	109	234	504
25	53	115	248	535
8	16	35	76	163
24	52	113	242	522

Appendix J

Construction Vibration Modeling Results

Groundborne Noise and Vibration Modeling

Notes

The reference distance is measured from the nearest anticipated point of construction equipment to the nearest structure.

Equipment	Reference Level Inputs			
	PPV _{ref} (in/sec)	Lv _{ref} (VdB)	RMS _{ref} (in/sec)	Reference Distance
Large Vibratory Roller	0.21	94	0.050	25
Small Vibratory Roller	0.101	88	0.025	25
Hoe Ram	0.089	87	0.022	25
Large bulldozer	0.089	87	0.022	25
Caisson drilling	0.089	87	0.022	25
Loaded trucks	0.076	83	0.014	25
Jack hammer	0.035	79	0.009	25
Small bulldozer	0.003	58	0.001	25

Equipment	Vibration Level at Receiver			
	Distance (feet)	PPV _x (in/sec)	Lv _x (VdB)	RMS _x (in/sec)
Vibratory Roller	15	0.3683	99	0.088
Small Vibratory Roller	15	0.1772	93	0.044
Hoe Ram	135	0.0139	71	0.004
Large bulldozer	135	0.0139	71	0.004
Caisson drilling	135	0.0139	71	0.004
Loaded trucks	135	0.0119	67	0.002
Jack hammer	135	0.0055	63	0.001
Small bulldozer	135	0.0005	42	0.000

Equipment	Vibration Contours		
	Distance to (feet)		
	0.200 PPV	72.0 VdB	0.0080 RMS
Vibratory Roller	26	250	133
Hoe Ram	12	120	64
Large bulldozer	12	120	64
Caisson drilling	12	120	64
Loaded trucks	10	79	42
Jack hammer	5	52	28
Small bulldozer	1	6	3

Source

California Department of Transportation (Caltrans). 2013. Transportation and Construction
Last Updated: 4/11/2019