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December 29, 2014

Steen Design Studio, Inc.
11774 Hesperia Road, Suite B1
Hesperia, CA 92345
Attn.: Sophie Steeno

Subject: Preliminary Acoustical Analysis of the Proposed VVR L.L.C. Commercial Development in Phelan.

Dear Ms. Steeno,

Prompted by a request from the County of San Bernardino Environmental Health Services that the proposed project be evaluated for anticipated compliance with the County Noise Standards as found in San Bernardino Development Code Section 83.01.080, we have performed site noise measurements and mathematical analyses to determine future on-site and off-site noise impacts associated with the operation of the proposed development. The proposed project will consist of nine new buildings located at the southwest corner of Phelan Road and Valle Vista Road in the Phelan area of unincorporated San Bernardino County (see attached site plan). One building is slated for a restaurant, another for a large hardware store, and others will be used for multi-tenant, retail, and a gas station.

The area to the north and west of the site is essentially commercial involving such uses as automotive, real estate, pharmacy, pet clinic, fitness center, chiropractic etc. The major sources of noise impacts onto the proposed commercial site is the vehicular traffic on Phelan Road which lies about 162 feet to the north of the nearest building. Noise measurements made on the site showed relatively low noise levels from the vehicular traffic. Noise levels from traffic on Phelan Road Road was measured as 56 dB(A) Leq at 12:30 p.m. on a weekday at the 162-foot distance from the road centerline, the building line of the proposed building nearest Phelan Road. Using this value in a short-term noise measurement/noise prediction vehicular traffic noise model yielded an estimated CNEL of about 59 dB(A) at the subject building line which is less than the applicable exterior noise level limit of 65 dB(A) CNEL imposed by the County of San Bernardino for office buildings, R&D, and professional offices (ref. 4, Table 83-3). There are no exterior noise level limits specified for retail, banks, or restaurants, however.

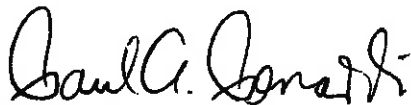
The primary off-site area of concern with regard to noise generation *from* the proposed development is the residential property bordering the site on the south. Potential noise sources would be the roof-top HVAC units on the buildings and vehicle movement on the site. Since the project is in the planning stage, specific noise emission data for the HVAC units are not available. As such, an estimated generic Sound Power Level (Lw) of 78 dB(A) for a single unit was used in a methodology found in ARI Standard 275 (ref. 5) to calculate a Sound Pressure

Level (SPL) at the nearest residential building adjoining the south property line. The worst case would involve multiple units on the roof of the large Buildings A and B which adjoin the south property line. As typical, a parapet will be installed along the roof edges to visually shield the mechanical equipment from view. The parapets will also serve to provide noise shielding. Calculations made for an assumed number of four roof-top units show that reduced noise levels ranging from about 37 dB(A) to 48.5 dB(A) can be expected at the exteriors of the nearest residences, depending upon where the roof-top units will be located. The San Bernardino County applicable exterior noise level limits for stationary noise sources are 55 dB(A) Leq for the daytime hours of 7 a.m. to 10 p.m., and 45 dB(A) Leq for the nighttime hours of 10 p.m. to 7 a.m. (ref. 4, Table 83-2). As such, it is recommended that the roof-top HVAC equipment and installation designs for the subject buildings be reviewed and analyzed for compliance with the San Bernardino County noise criteria before the equipment is installed. Potential noise mitigation measures could involve the selection of quiet units, placement away from the south edge of the buildings, an increase in parapet heights, or unit-specific noise barriers.

Another potential source of site-generated noise impact onto the subject residential area would be the movement of vehicles on the property. Most of the automobile parking will be located north of the large buildings along the south property line such that little disturbance is expected at the residences. The loudest motor vehicles would potentially be the delivery trucks that would service Buildings A and B. Unlike the typical frequent food and dairy deliveries to supermarkets, deliveries of products and supplies to these buildings are not expected to occur more than about twice a week. This infrequency wouldn't produce noise levels that could result in a calculation of a substantial CNEL value. Additionally, the presence of the proposed 6-foot retaining wall and the existing garden wall results in a large grade differential between the project site and the residential area (the site being about 12 feet lower) such that significant noise shielding of the delivery trucks can be expected for the residences

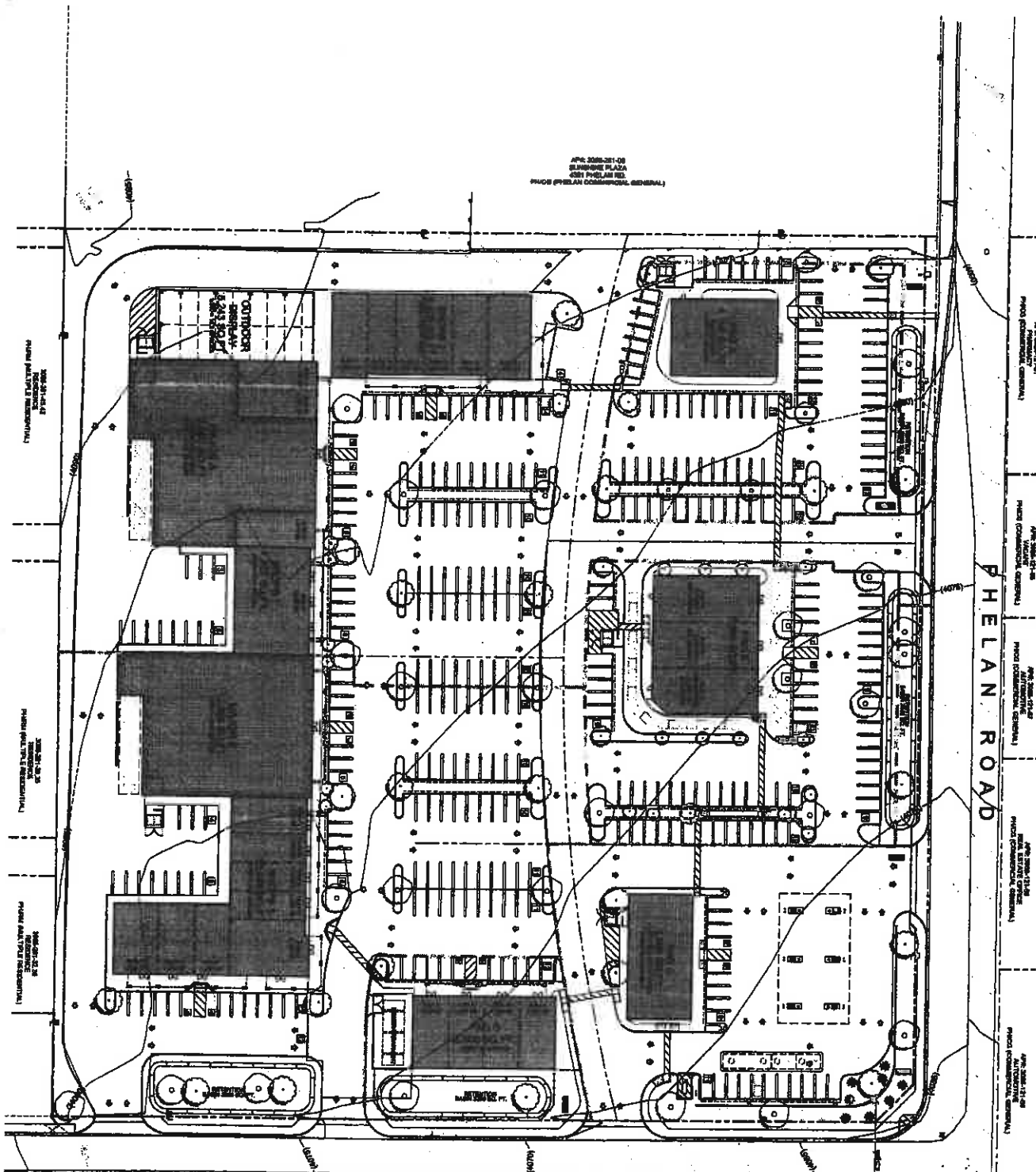
The conclusion of this preliminary noise impact evaluation is that the proposed commercial development can be expected to be in compliance with applicable noise criteria of the County of San Bernardino Development Code, with the caveat that the proposed roof-top HVAC equipment, and placement on Buildings A and B, be evaluated before actual installation.

Yours truly,



Paul A. Penardi
Acoustical Consultant
Member, Acoustical Society of America

Attachments



APR 2008-01-08
 BLISSMORE PLAZA
 600 PHOENIX BLVD
 PHOENIX COMMERCIAL GENERAL

PHELEAN ROAD

VALLE VISTA ROAD

2008-01-08
 VV001 COMMERCIAL GENERAL

2008-01-08
 VV001 COMMERCIAL GENERAL



PROJECT DATA PROJECT: COMMERCIAL DEVELOPMENT VVR L.L.C. PROJECT NUMBER: VV001 PROJECT DATE: 01/08/08 PROJECT LOCATION: 600 PHOENIX BLVD, PHOENIX, AZ 85004 PROJECT OWNER: VVR L.L.C. PROJECT ARCHITECT: [Faded] PROJECT ENGINEER: [Faded]																
BUILDING DATA BUILDING TYPE: [Faded] BUILDING AREA: [Faded] BUILDING HEIGHT: [Faded] BUILDING FOOTPRINT: [Faded] BUILDING SETBACK: [Faded]																
PARKING DATA <table border="1"> <thead> <tr> <th>TYPE</th> <th>AREA (SQ FT)</th> <th>STALLS</th> </tr> </thead> <tbody> <tr> <td>STANDARD</td> <td>10,000</td> <td>100</td> </tr> <tr> <td>COMPACT</td> <td>5,000</td> <td>50</td> </tr> <tr> <td>BIKE</td> <td>1,000</td> <td>10</td> </tr> <tr> <td>TOTAL</td> <td>16,000</td> <td>160</td> </tr> </tbody> </table>		TYPE	AREA (SQ FT)	STALLS	STANDARD	10,000	100	COMPACT	5,000	50	BIKE	1,000	10	TOTAL	16,000	160
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SHEET NO. A-0 OF 11	PREPARED BY DATE	PROJECT: COMMERCIAL DEVELOPMENT VVR L.L.C.	ARCHITECTURE DESIGN 11771 MESQUITA ROAD SUITE 400 PHOENIX, AZ 85027 PHONE: (602) 998-1111 FAX: (602) 998-1112 WWW.ADCDESIGN.COM
		PROJECT NUMBER: VV001 PROJECT DATE: 01/08/08	

REFERENCE LIST

1. Pearsons, Karl S., et. al., Handbook of Noise Ratings, NTIS, U.S. Department of Commerce Document #N74-23275, prepared by Bolt, Beranek, and Newman for NASA, April 1974.
2. Beranek, Leo L., Noise and Vibration Control, Revised Edition, Institute of Noise Control Engineering, Washington, D.C., 1988.
3. Harris, Cyril M., Handbook of Acoustical Measurements and Noise Control, 3rd Edition, Acoustical Society of America, Woodbury, New York, 1998.
4. San Bernardino County Title 8 Development Code; Chapter 83.01: General Performance Standards; Section 83.01.080, Noise.
5. Air Conditioning & Refrigeration Institute, 1997 Standard for Application of Sound Rating Levels of Outdoor Unitary Equipment, Standard 275.