

File No. S87-0057-R Aerial Map Cameron Park CSD Rasmussen Park

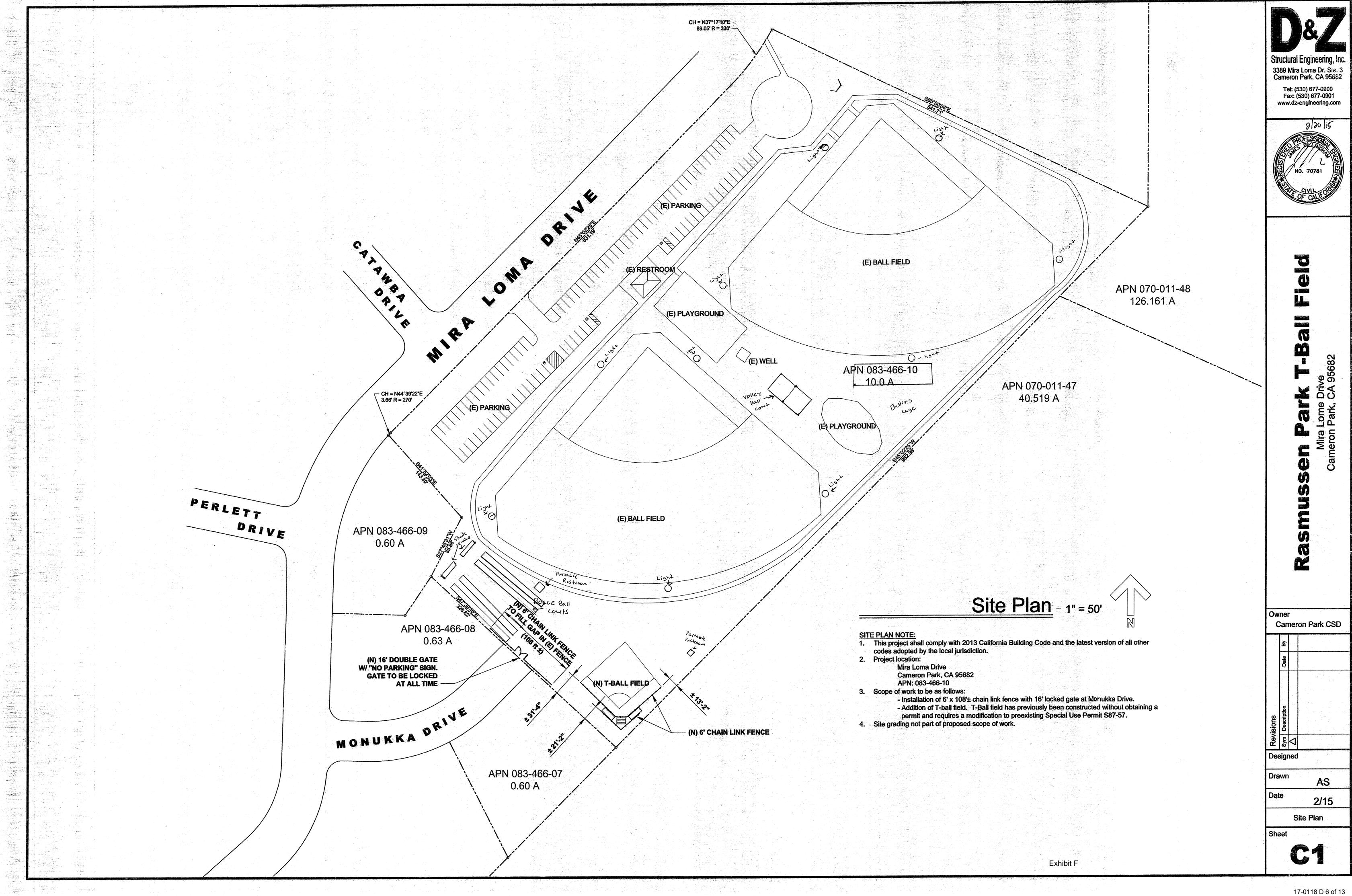
Special Use Permit Revision

Site

0 50 100 200 Feet

Exhibit E





May 25, 2016

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J.R. Hichborn

Cameron Park Community Services District

Transmitted via email: J.R.Hichborn@cameronpark.org

Subject: T-Ball Playing Field Noise Monitoring Results

Dear Mr. Hichborn,

Pursuant to your request, Bollard Acoustical Consultants, Inc. (BAC) has conducted a site inspection and short-term noise level measurements at the T-Ball playing field located in Rasmussen Community Park in El Dorado County, California. The purpose of the noise level measurements was to determine if the noise generated during a regular T-Ball game exceeded the El Dorado County General Plan Noise Element standards at the nearby residence to the south of the ball field. This letter contains the results of our measurements and determination regarding compliance with County noise standards.

# El Dorado County General Plan Noise Standards

The Noise Element of the El Dorado County General Plan contains policies to ensure that County residents are not subjected to noise beyond acceptable levels. The County General Plan Policies which are applicable to this evaluation are reproduced below:

Policy 6.5.1.2

Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 1 at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.7

Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 1 for noise-sensitive uses.

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# Table 1 16 AUG 19 PM 3: 28 Noise Level Performance Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources RECEIVED (Table 6-2 of El Dorado County General Plan Noise Element) EPARTMENT

	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
Noise Level Descriptor	Community	Rural	Community	Rural	Community	Rural
Hourly Leq, dB	55	50	50	45	45	40
Maximum Level, dB	70	60	60	55	55	50

### Notes:

Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property.

In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.

Because the project area is in an urban area, the *Community* noise standards shown in Table 1 would apply at the nearest residential property line. In addition, because the noise generated by a T-Ball game consist primarily of speech, the noise standards shown above are reduced by 5 dB. Furthermore, because T-Ball games would only be played during daytime hours, the noise level limits applicable to this noise source are as follows:

Hourly Level:

50 dB Lea

Maximum Level:

65 dB Lmax

## **Noise Level Monitoring Results**

On Wednesday, April 6, 2016 BAC staff (Paul Bollard) conducted sound level measurements at the T-Ball playing field located at Rasmussen Community Park in El Dorado County, California. Larson Davis Laboratories Model 820 precision integrating sound level meters were used for the measurements. The meters were calibrated before use and placed on a tripod 5 feet above ground at two locations. One meter was placed behind the home plate at the nearest residential property line (Site 1) and another meter was placed in the outfield (Site 2). See Attachment A for the noise measurement locations. The measurement system used meets all pertinent ANSI specifications for precision sound level monitoring.

The noise monitoring results indicated that the 40-minute game generated noise levels of about 59 dB  $L_{eq}$  and typical maximum noise levels ( $L_{max}$ ) below 75 dB at Site 1. Site 2 was exposed to lower noise levels of about 51 dB  $L_{eq}$  and 60 dB  $L_{max}$ . See Attachment B for detailed noise monitoring results.

Mr. J.R. Hichborn May 25, 2016 Page 3

The measured T-ball noise levels at Site 1 exceed both the County's Hourly Legand Maximum Level noise standards by approximately 9 dB Leq and 10 dB Lmax, respectively. Therefore, noise mitigation would be required to comply with the El Dorado County General Plan Noise Element standards.

### **Noise Mitigation Measures**

In order to comply with the County's noise standards at the nearest residential property line, BAC evaluated the effectiveness of a solid noise barrier in reducing T-Ball generated noise levels. The analysis showed that a noise barrier of 8 feet tall constructed near the eastern residential property line would be adequate to reduce backyard noise exposure to a state of compliance with El Dorado County Noise Standards. Detailed noise barrier inputs and results are shown in Attachment C. Attachment A shows the location of the recommended noise barrier.

Wood fencing can be sufficient in reducing backyard noise levels to 65 dB  $L_{max}$  or less given that the wood fence is properly constructed to avoid gaps in construction which occur with prolonged exposure to the elements. Specifically, provided the fence is constructed with 100% overlap of the wood fence slats and provided those slats are screwed to the frame and not nailed or stapled, the fence would provide adequate sound attenuation.

### Conclusions

BAC staff observations and noise level measurements conducted at the T-Ball playing field on Wednesday, April 6, 2016 indicated that noise generated during the game was in excess of El Dorado County noise standards. However, a solid noise barrier of 8 feet in height will reduce noise levels to a state of compliance provided that the fence is constructed as described in the previous section and as shown in Attachment A.

This concludes BAC's assessment of the T-Ball playing field at Rasmussen Community Park in El Dorado County, California. Please contact Paul Bollard at (916) 663-0500 or <a href="mailto:paulb@bacnoise.com">paulb@bacnoise.com</a> with any questions or requests for additional information.

Sincerely,

Bollard Acoustical Consultants, Inc.

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Paul Bollard President

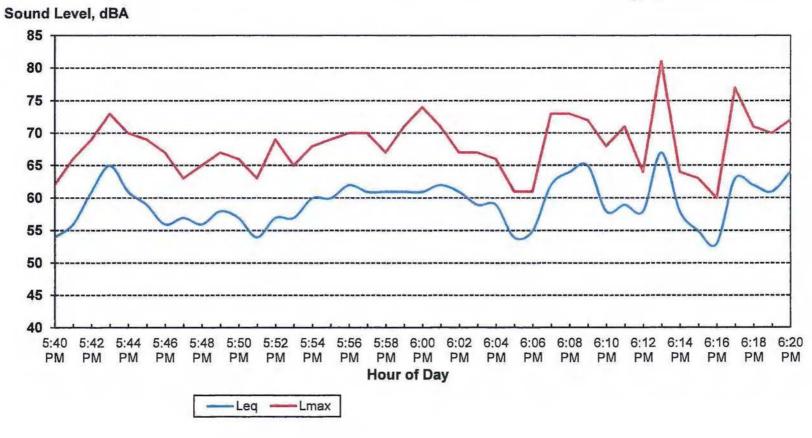
# Attachment A

Noise Measurement Locations and Recommended Noise Barrier
T-Ball Playing Field Noise Monitoring - El Dorado County, California



# Attachment B-1 T-Ball Playing Field Noise Monitoring Noise Monitoring Results - Site 1 Wednesday, April 6, 2016

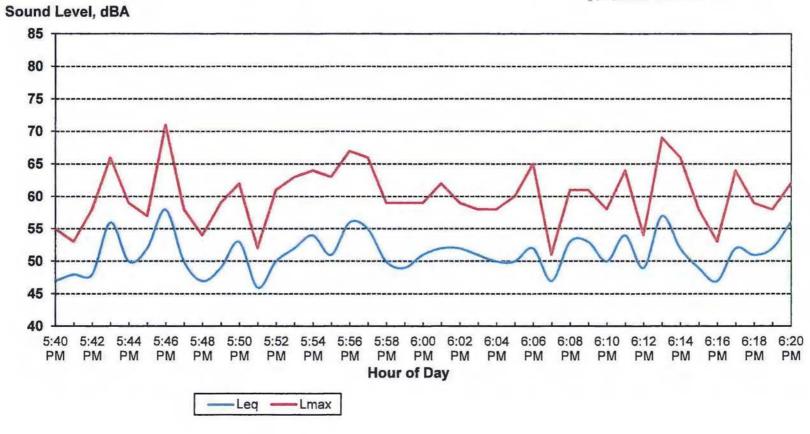
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# Attachment B-2 T-Ball Playing Field Noise Monitoring Noise Monitoring Results - Site 2 Wednesday, April 6, 2016

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Attachment C

# **Barrier Insertion Loss Calculation**

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**Project Information:** 

Job Number: 2016-060

Project Name: T-Ball Playing Field

Location(s): Nearest Residence

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Noise Level Data:

Source Description: Crowd cheering

Source Noise Level, dBA Lmax: 75 Source Frequency (Hz): 1000

Source Height (ft): 3

Site Geometry:

Receiver Description: Nearest Backyard

Source to Barrier Distance ( $C_1$ ): 35 Barrier to Receiver Distance ( $C_2$ ): 10

Pad/Ground Elevation at Receiver: 0

Receiver Elevation<sup>1</sup>: 5

Base of Barrier Elevation: 0 Starting Barrier Height 6

**Barrier Effectiveness:** 

Top of Barrier Barrier Height

Barrier Breaks Line of Site to

Elevation (ft)	(ft)	Insertion Loss, dB	Noise Level, dB	Source?	
6	6	-6.9	68.1	Yes	
7	7	-9.2	65.8	Yes	
8	8	-10.9	64.1	Yes	
9	9	-12.5	62.5	Yes	
10	10	-13.8	61.2	Yes	
11	11	-14.6	60.4	Yes	
12	12	-15.3	59.7	Yes	
13	13	-16.3	58.7	Yes	
14	14	-16.9	58.1	Yes	
15	15	-17.1	57.9	Yes	
16	16	-17.1	57.9	Yes	

Notes:

1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

