

13 February 2015

Chris Joseph
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Subject: **Hollywood Park**
Results of Preliminary Acoustical Modeling
CSA Project: 14-0718

Dear Chris:

We have conducted preliminary acoustical modeling for the proposed stadium at the Hollywood Park site. The purpose of this modeling is to provide an analysis of potential event generated noise levels surrounding the proposed stadium. This report summarizes the results of our analysis.

PROJECT DESCRIPTION

The proposed stadium will be located at the north side of the former Hollywood Park racing facility in Inglewood, California. Existing residential neighborhoods are located to the north, east, and west sides of the project site. The closest residences are approximately 700 feet north of the stadium.

The current design of the stadium shows it being partially sunken, so that the field is located below the existing grade elevation of the site. The upper levels of the stadium, including the upper seating deck, will be above the existing grade elevation of the site. These upper levels are currently designed to be open on the sides and ends.

For the purposes of this model, we have assumed that the roof will consist of an acoustically transparent material, such as ETFE.

EVENT PARAMETERS

Noise levels generated by an amplified sound system were modeled for the following scenarios: a 75,000 person football game; a 50,000 person concert in an "endzone" configuration; and a 50,000 person concert in a "center-field" configuration. We have not predicted noise levels for crowd noise, but expect that noise from the crowd will be louder than that generated by the amplified sound system during a football game, and quieter than noise levels generated by a concert.

Based on preliminary discussions with the design team, we understand that the "house" sound system will be used during football games and "touring" sound systems will be provided by the organizers of each concert (the house system will not be used). We have assumed that the house sound system will consist of approximately 18 line arrays hung from the structure. The line arrays will be suspended at two different heights (serving the lower and upper decks) and will be oriented so that they will serve the entire seating area. For the purpose of our modeling, we have assumed that the regularly

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occurring noise levels generated by announcements and music during football games will be 80 dBA in the stands.

For concerts, we have assumed that each show will provide its own sound system. For a 50,000 person concert, the upper deck will be closed, so the sound system will only be serving the lower portions of the stadium. The endzone concert arrangement will have the stage located in the south endzone facing towards the north. The center-field concert arrangement will have the stage located at midfield with the audience surrounding the stage (e.g., an "in-the-round" setup). In both scenarios, line arrays will be supported from the stage and the house system will not be used, however, the endzone configuration would have additional line array speakers placed at midfield to augment concert music at the rear of the stadium. We have assumed that the regularly occurring noise levels for these two scenarios will both be approximately 100 dBA in the stands, which is consistent with the noise levels used for the Farmers Field analysis.

DISCUSSION OF RESULTS

Based on the assumptions shown above, we have estimated the following noise levels at the nearby residences, as shown in Table 1. For our analysis, we created a three dimensional (3D) model using the Odeon noise modeling software. In addition to the noise levels shown below, we have also included three figures showing projected noise contours for each scenario. Those are attached as Figures 1 to 3.

Table 1: Estimated Regularly Occurring Noise Levels at Nearby Residences

Configuration	Estimated Noise Levels (dBA)		
	East Residences	North Residences	West Residences
Football game	50	51	46
Center Field Concert	65	64	65
Endzone Concert	67	69	67

The noise levels shown above in Table 1 are predicted at the first row of homes. Noise levels would drop off by approximately 5 to 10 dBA after the first row of homes, due to shielding provided by these structures. For reference, a difference of 10 dBA would be perceived as a 50% reduction in loudness. A difference of 3 dB is considered a just-noticeable difference.

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This concludes our preliminary analysis for the Hollywood Park stadium project.

Sincerely,

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HOLLYWOOD PARK
FOOTBALL CONFIGURATION
NOISE CONTOURS

FIGURE 1

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HOLLYWOOD PARK
ENDZONE CONCERT CONFIGURATION
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FIGURE 3

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