

13 April 2021

Mr. George Alexandris
Hutton
736 Cherry Street
Chattanooga, Tennessee 37402
georgea@hutton.build

Re: Acoustical Evaluation of Proposed Blowers and Vacuum Producer
Proposed Modwash Facility, Seven Fields, Pennsylvania
LSG&A File 2021016

Dear Mr. Alexandris:

Lewis S. Goodfriend & Associates (LSG&A) has completed an evaluation of the expected outdoor sound pressure levels due to the dryer blowers and vacuum producer for the proposed Modwash facility to be located in Seven Fields, Pennsylvania. This letter summarizes the results of our evaluation, including a summary of the expected sound levels at the adjacent residential properties to the north and east due to the proposed blowers and vacuum producer.

1.0 SITE LAYOUT

The proposed car wash is to be located at 501 Northpointe Circle, Seven Fields, Pennsylvania. The nearest adjacent residential properties are located to the north and east of the site. Figure 1, at the end of this letter, shows the site and acoustical evaluation locations.

2.0 EVALUATION AND RECOMMENDATIONS

To calculate the expected sound pressure levels, the acoustical model considered the propagation of sound over distance, the shielding and reflection of sound due to buildings and barriers, the effect of topography, and the effect of air absorption. The calculations were performed using SoundPLAN software, based on the ISO Standard 9613-2. The input sound data was based on sound level measurements of blowers from a similar car wash facility, provided by Sonny's Enterprises, vacuum producer sound data provided by Sonny's Enterprises, and vacuum hose data measured by LSG&A at a similar car wash facility.

LSG&A understands that Seven Fields does not have a noise regulation with decibel limits. For comparative purposes, a common daytime sound level goal is 65 dB(A) for residential receivers. Therefore, results of the evaluation are also presented with the following optional noise control recommendations for consideration.

2.1 Sound Barrier Recommendation

To reduce the impact on the residential properties, a sound barrier was considered on the north, east, and west sides of the vacuum producer. The sound barrier should have a total height of at least 8 feet above grade. Figure 1, at the end of this letter, shows the sound barrier placement considered in the acoustical evaluation.

2.2 Blower Silencer Recommendation

LSG&A understands that the dryers provided by Sonny's Enterprises have a silencer option for the blower intakes. The effect of these silencers was considered in the acoustical evaluation.

3.0 RESULTS

Table 1, below, shows the expected A-weighted sound levels at the north and east residential properties due to the operation the proposed equipment with the recommended noise control measures. These results represent the combined total sound contribution from the vacuum producer, the vacuum hoses, and the tunnel entrance and exit with active dryer blowers.

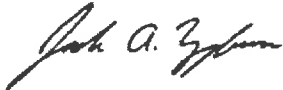
Description	Sound Level, dB(A)	
	No Noise Control	Blower Silencers and Barriers
North Residential	63	59
East Residential	64	62
Design Goal	65	

The results of the evaluation indicate that the sound levels due to the proposed equipment without noise control are slightly below the design goal, and are further below the goal with the addition of the noise control options.

Please note that all recommendations included in this report are acoustical in nature and should be reviewed by the appropriate licensed design professionals. Alternative products should be submitted to LSG&A for review. I trust that this information is sufficient for your present needs. Please call if you have any questions regarding this letter.

Very truly yours,

LEWIS S. GOODFRIEND & ASSOCIATES



Jack A. Zybura, P.E., INCE Bd. Cert.
Project Manager

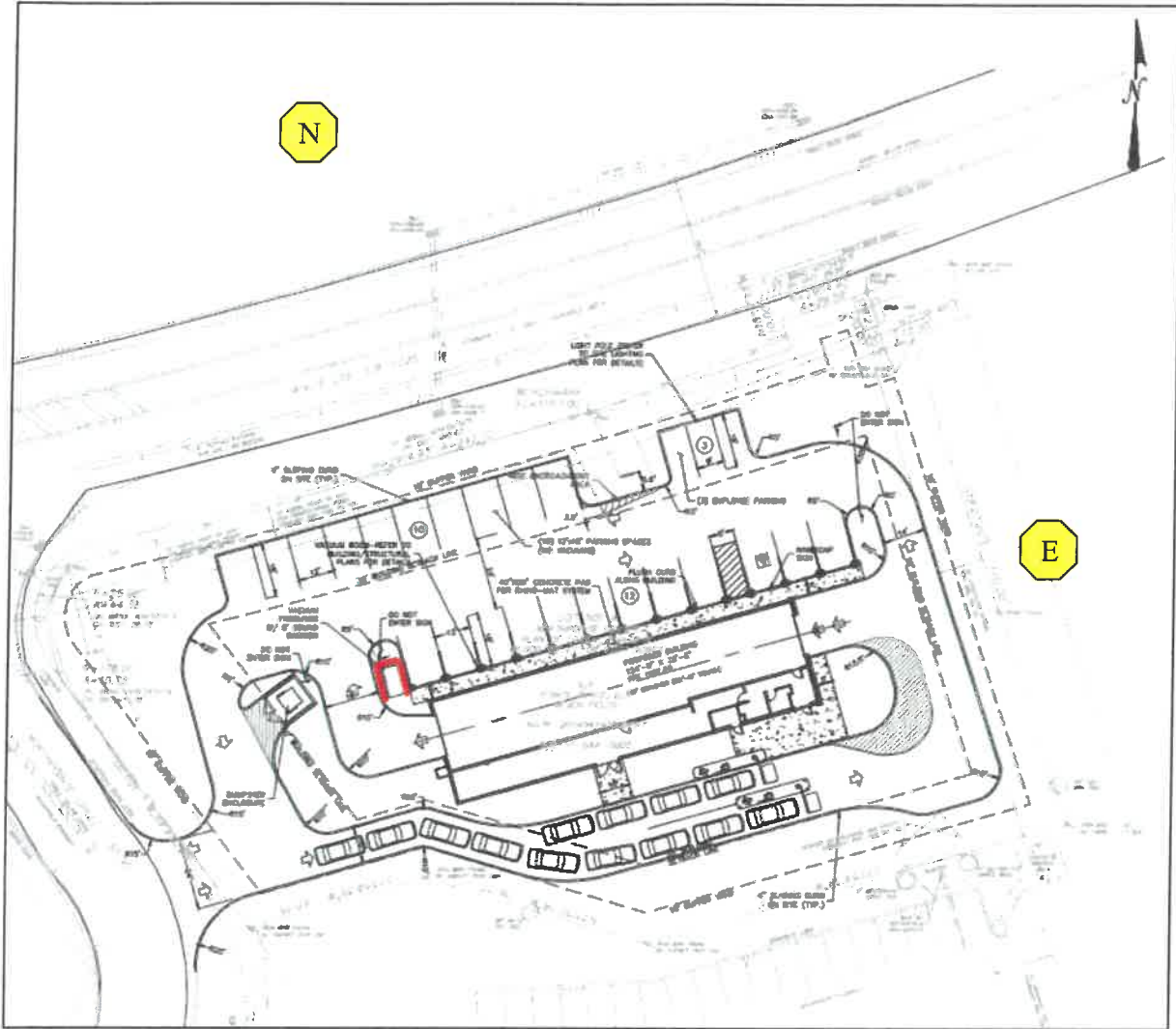


Andrew R. Bosco
Staff Engineer



JAZ:jaz
Enclosures

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Figure 1 – Site Plan Showing the Proposed Site, Acoustical Evaluation Locations, and Recommended Barrier Location, Modwash, Seven Fields, Pennsylvania.



NOTES: All Locations Approximate
Not to Scale
Not for Construction

	Evaluation Location
	Sound Barrier

Sound Barrier Construction:

Appropriate sound barrier materials include minimum 4-inch thick masonry construction or a pre-fabricated modular panel system, such as the following:

- AIL Tuf-Barrier (PVC panels)
- Plywall (Wood panels)

The barrier must be continuous between all sections, with no gaps between the barrier and the ground.

LSG&A's sound barrier recommendation is based upon acoustical performance only. All other aspects of the final design, construction, and implementation of the recommended sound barrier must be provided by a licensed structural or civil engineer for correct support, loading, and code compliance.

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