

ADMINISTRATIVE NOTICE

TO: Distribution
FROM: Carlo Costanza, Executive Director
DATE: July 2, 2020
SUBJECT: Instructions for the Measurement of Sound Output and Light Levels

EFFECTIVE IMMEDIATELY

All applications involving existing commercial and/or manufacturing uses utilizing existing sound/noise-producing and/or lighting systems, and located adjacent to residential uses, must provide site plans with sound-level plots (i.e., sound from the utilized sound/noise-producing system) and lighting lumen spread plots (i.e., lumens from the utilized lighting system). These plots shall be based on actual field measurements of sound and lighting levels taken at various spots within the subject site as described herein.

All applications involving commercial and/or manufacturing uses that will utilize sound/noise-producing and/or lighting systems to be installed after the application is granted, and located adjacent to residential uses, shall provide site plans with similar plots to those described herein, but may be based on analytical/mathematical models which, if requested by the Board, shall be field-verified based on field measurements performed after the installation of the proposed sound/lighting system is completed.

Sound Output Measurements

All sound-emitting and noise-producing equipment (e.g., drive-through speaker/menu board, or any other noise-producing equipment) shall be located away from all residential property lines. The area of the residential use opposite to any sound-emitting or noise-producing equipment must be protected from being impacted by noise by installing a Board-approved acoustical fencing and dense vegetation to create a visual and sound buffer. Planting beds must be in-ground planting with a minimum front-to-back depth sufficient to accommodate at least two (2) rows of dense vegetation, such as *arborvitae*, which shall be maintained to grow to a minimum height of eight (8) feet.

Field measurements using industry-standard sound level metering equipment shall be taken and the sound/noise output levels must be plotted on plan and in elevation/sectional views. These readings shall be taken at the same height of the sound-emitting/noise-producing equipment (e.g., the speaker of the menu board). These readings shall be taken beginning at two (2) feet from the sound source and continue in the same direction of sound propagation at doubling distances (i.e., at 2 feet, 4 feet, 8 feet, etc.). At least three (3) measurements shall be taken at the fence located on the property line shared with the adjacent residential use: 1) at the height of the speaker, 2) the height of the speaker plus three feet, and 3) the height of the speaker plus six feet.

As a minimum, one (1) set of field measurements shall be taken with the sound-emitting/noise-producing equipment producing an output of not less than 84 dBA. If an "Automatic Volume Control" ("AVC") system is utilized, a second set of field measurements shall be provided with the AVC activated. Backup data for the sound measurements, specifications and a photograph of the meter used, and photographs of the meter readings at the locations taken shall be provided.

Lumen Spread Diagram

A “Lumen Spread Diagram” must be submitted to demonstrate zero (0.0) foot-candle (F-Cs) light levels at all property lines that are shared with adjacent residential uses. Field measurements, using industry-standard light level metering equipment shall be taken to demonstrate compliance with this standard. In undertaking field measurements, spillover light levels from adjacent residential property lighting systems, if any, must be deducted/eliminated from the light level readings. Deduction/elimination of the lumen spread from adjacent residential property, if any, may be achieved by either turning the residential property lights off while performing commercial lighting-level measurements (i.e., one direct set of measurements is needed) or by measuring the lumen spread from these adjacent residential property lights separately (while turning the commercial lights off) and then measuring the lumen spread from both commercial and residential lightings (i.e., two sets of measurements will be needed).

Field measurements of the subject property shall be performed on a ten-foot grid. However, within 20 feet of the property line shared with residential use, all measurements shall be performed on a five-foot grid. Measurements within the subject property must be taken at a height of zero (0) to three (3) feet above grade. At the property line, measurements must be taken at the height at the top of the fence along the five-foot grid.

The following must be provided and attached to the Lumen Spread Diagram:

- Backup field data, specifications, and a photograph of the meter used.
- Photographs of meter reading outputs at the top of the fence at 20-foot intervals.