Property: 99 Washington Street, Melrose, MA

Applicant: Oak Grove Mill, LLC

Acoustical Analysis

12/11/19

Only the minimal amount of equipment required for the common areas will be located on the roof, all of which will be kept out of sight lines. Individual unit mechanical equipment will be located within the units themselves with the exception of the residential sized condensers which are gathered towards the center of the building. These condensers will all have screen walls to the exterior and will be out of the sight line from the public way.

Common area ERV's (Energy Recovery Ventilators), of which there are two, are supported on vibration isolation curbs. The unit has low sound condenser blades and is one of the quietest on the market. Based on equipment manufacturer information the unit will be 88 dB. Each unit will be greater than 100 feet from the street. The acoustic intensity level and decibel math is represented in the following equation:

$$B_2 = B_1 + 20 \log (R_1/R_2)$$

Our RTU is 88 dB (B_1) 1 foot away from the unit (R_1) and the second distance is 100 feet (R_1). The log of 1/100 = -2. So, 88 dB + 20 (-2) becomes 88 – 40 = 48dB.

Thus, our projected noise level of 48 dB is below the Melrose Noise Ordinance Thresholds for this district at all hours of the day.