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August 17, 2023

Chairman Kevin Conero
Village of Montgomery Planning Board
133 Clinton Street
Montgomery, NY 12549

Re Review letter by The Noise Consultancy, LLC of the sound study prepared by the Applicant for the
proposed KSH Warehouse Facility, Union Street, Village of Montgomery, NY

Dear Chairman Conero:

The Noise Consultancy, LLC has been engaged by the Village of Montgomery Planning Board to review and comment on the acoustical report prepared by B. Laing Associates, dated April 2023, and other relevant documents submitted on behalf of the Applicant. The Applicant is proposing to construct warehouses on the subject property.

The documents that were reviewed include the following.

1. *Sound Measurements and Impact Review, Proposed KSH Warehouse Facility, Village of Montgomery, New York, April 2023* (Noise Report). Prepared by B. Laing Associates.
2. Engineering drawings prepared by Engineering & Surveying Properties dated 12/10/21 and revised 6/16/23 (sheets O-100, C-101-111, C-301-304).
3. Noise ordinance of the Village of Montgomery, NY – *Chapter 77. Noise*. Adopted 5/18/2021.
4. *Assessing and Mitigating Noise Impacts*, dated 10/6/2000, revised 2/2/2001. Publication of NYSDEC, Division of Environmental Permits.
5. B. Laing Associates letter dated May 2, 2023
6. Engineering and Surveying Properties letter dated May 12, 2023

We are providing our comments based on the sequence of topics in the B. Laing Associate report ("Noise Report"). Our expectation is that B. Laing Associates will respond to these comments in writing and/or as testimony at a planning board meeting. In some cases, we are requesting additional information to substantiate conclusions provided in the Noise Report.

1.1 Purpose of Study

It is stated that the fully built facility will include four warehouse buildings, totaling 280,000 square feet which will be used for general warehouse purposes and distribution of medical products the company produces. There will be parking spaces for 266 cars and 96 loading bays.

It is worth noting that the applicable regulations in this matter include the Village of Montgomery Noise Code ("Village Noise Code") as stated, as well as the NYS Department of Environmental Conservation (NYSDEC) State Environmental Quality Review Act (SEQR) criteria.

1.2 General Sound Characteristics

While it is generally recognized that a 10 dBA increase is a doubling of the perceived loudness of a sound, for low frequency noise sources, such as those associated with transportation sources (e.g., diesel trucks), a 6 dBA increase is found to result in a perceived doubling of the loudness.

1.3 Sound Monitoring

Concerns regarding the ambient monitoring as follows:

A. Most of the sound level measurements were taken at times of morning and afternoon peak traffic periods. As a result, such sound levels will be higher than at periods when traffic volume is lower (e.g., mid-morning, mid-afternoon and overnight). Measurements conducted at the off-peak period times would more closely reflect larger time periods and greater impact for adjacent residential properties.

B. Those sound level measurements taken during the "nighttime" period as defined by the Village Noise Code (9PM to 8AM, Sunday evening to Saturday morning & 9PM Saturday to 9AM Sunday) were taken just prior to 9PM or shortly after 9 PM (latest measurement was 9:35 PM). When you consider that the facility will operate up to 24 hours per day, the nighttime measurement times inadequately address the potential impacts that may occur later in the evening, overnight and during the early morning hours.

C. The measurements conducted on April 12 were conducted when the winds were "...between 15 and 20 miles per hour..." The American National Standards Institute at *ANSI 12.18 Procedures for the Outdoor Measurement of Sound Pressure Level* requires that general purpose sound level measurements not be taken when the winds exceed 5 m/sec (approx. 12 MPH). The sound level meter is measuring pressure and elevated winds will bias the sound level measurements higher. Higher ambient levels provide an impression of lower impacts on the adjacent residential properties. This is particularly problematic when comparing estimated sound levels from the proposed source (noise from trucks,

HVAC, etc) and the existing ambient sound levels in accordance with NYSDEC SEQR criteria. A smaller differential between the source levels and the ambient level improperly suggests a lower impact to the adjacent residential properties.

D. Conducting sound level measurement along roadways (Sample Locations A & C, Table 2a) is not a reasonable location at which to assess existing ambient sound levels for residential impacts. People are not recreating, relaxing or sleeping at their mailbox or on the sidewalk. Noting the sound levels at the site's emergency entrance along NYS Route 211 (pg. 2 para.2) is irrelevant. Ambient sound level measurements should have been conducted along the rear (southern) property lines of the Weaver Street residences, abutting the site.

Sample Location B, ambient sound level measurements were conducted at a location that was not directly adjacent to a roadway, however, it was at the rear property line of 211 Auto Body, which may have been active during some of the measurements (there is no notation) and thus would be unrepresentative of the ambient sound levels at the property lines of the R-4 zone residences to the south, where those measurements should have been conducted.

Furthermore, it appears the locations of monitoring for ambient conditions are not those where regulatory compliance was assessed, according to Table 2a and the aerial map on page 15. Doing otherwise provides for erroneous results. The Village Noise Code at 77-4C.(5) states that "Measurements shall be taken at the point that is located about one foot beyond the boundary of the emitter's premises." The location must be reasonably the same for the ambient sound level measurements and that of the combined sound levels associated with all sound generating sources at the emitter's premises. Otherwise, the two are not comparable as they represent different conditions.

E. While the NYSDEC criteria is based on an average sound level represented by the metric, LAeq or Leq dBA (these are equivalent), the Village Noise Code noise level standards are clearly based on not exceeding the limits provided in 77-5B.(1) represent by the metric, LAmax or Lmax dBA (these are equivalent). The ambient sound level data provided in Table 2a are all reported as Leq dBA. This metric is appropriate for the NYSDEC compliance assessment but the assessment of compliance with regard to the Village Noise Code would be better represented by using the L90 statistical sound level for the ambient sound level measurements and is an industry-recognized metric for assessing ambient sound levels. The L90 data are already provided as part of the data on the Measurement Summary Reports in Appendix A of the Noise Report. The L90 data are substantially lower than the Leq data and are more representative of the ambient conditions in the surrounding community.

F. The Measurement Summary Report in Appendix A shows that the sound level meter was set to the *Fast* response time. This is not consistent with the requirements of the Village Noise Code at 77-4D

which requires the sound level meter be set to "...slow response except for sounds or noises which occur in single or multiple bursts with a duration of less than one second for which fast response shall be used." The meter set to FAST response time will bias the measured ambient sound levels higher than it would with it set to SLOW response time.

G. There is no notation of the date of the laboratory certification of the sound level meter used or field calibration checks conducted, as are industry standard practices, and the latter of which is required by Montgomery's Noise Code at §77-4.C.(2).

2.1 Department of Environmental Conservation Criteria

In this matter, it is our understanding that the Village may serve as the lead agency in making a SEQR determination, as specified by NYSDEC, which may be either of the following:

> ***Negative Declaration***
> If an action is determined to not significantly impact the environment.
>
> ***Conditioned Negative Declaration***
> If an action is determined to impact the environment, but enforceable conditions can reduce impacts.
>
> ***Positive Declaration***
> If an action is determined to have potential impacts to the environment, an Environmental Impact Statement (EIS) must be prepared for public review. Under the SEQR process, the EIS is used to analyze reasonable alternatives to the proposed action and to identify ways to avoid or reduce adverse impacts. See more about *Preparing a Draft EIS.*
>
> Additionally, SEQR encourages agencies to establish a clear and indisputable record of their decision-making process, including public participation. Under SEQR, the public may take part in:
>
> - Scoping the draft EIS
> - Reviewing documents and providing comments
> - Public hearings"

The representation made in the Noise Report regarding what increases in ambient sound levels would result in what level of impact are inconsistent with the discussion in the NYSDEC Assessing and Mitigating Noise Impacts document which states:

> "The goal for any permitted operation should be to minimize increases in sound pressure level above ambient levels at the chosen point of sound reception. Increases ranging from 0-3 dB should have no appreciable effect on receptors. Increases from 3-6 dB may have potential for adverse noise impact only in cases where the most sensitive of receptors are present. Sound pressure increases of more than 6 dB may

> require a closer analysis of impact potential depending on DEP-00-1rev.2/2/01 The DEC Policy System 14 February 2, 2001, existing SPLs and the character of surrounding land use and receptors. SPL increases approaching 10 dB result in a perceived doubling of SPL. The perceived doubling of the SPL results from the fact that SPLs are measured on a logarithmic scale. An increase of 10 dB(A) deserves consideration of avoidance and mitigation measures in most cases. The above thresholds as indicators of impact potential should be viewed as guidelines subject to adjustment as appropriate for the specific circumstances one encounters."

The NYSDEC Assessing and Mitigating Noise document also states:

> "In non-industrial settings the SPL should probably not exceed ambient noise by more than 6 dB(A) at the receptor. An increase of 6 dB(A) may cause complaints. There may be occasions where an increase in SPLs of greater than 6 dB(A) might be acceptable. The addition of any noise source, in a nonindustrial setting, should not raise the ambient noise level above a maximum of 65 dB(A). This would be considered the "upper end" limit since 65 dB(A) allows for undisturbed speech at a distance of approximately three feet."

This criterion is generally referred to as "the increase above ambient". The Noise Report references this criterion in subsequent sections of the report in an effort to demonstrate compliance with the NYSDEC criteria.

To properly evaluate operational sound emissions of the proposed facility pursuant to NYSDEC criteria it is important for the ambient sound levels to be measured at locations that accurately represent the potential exposure of residential receptors, at all times that there may be facility operations, and that the facility sound levels represent those emitted from the sum of all site activities that may occur simultaneously at those times. The Noise Report has not done this. Furthermore, the calculations shown in Table 5 (page 12) of the Noise Report have numerous errors and cannot be relied upon to assess regulatory compliance with NYSDEC criteria or the Village Noise Code (discussed in detail in Section 3.1).

2.2 Federal Highway Administration Criteria

FHWA criteria does not have applicability in this matter.

2.3 Village of Montgomery Noise Ordinance

Construction noise – As stated in the Village Noise Code at Chapter 77-5.E.(1), construction noise is exempt during daytime hours. The Applicant has stated on page 14 of the Noise Report that they agreed to limit their construction activity to daytime hours only. If the Planning Board decides to approve this project, a condition of approval should include this stipulation.

It must be noted that while construction limited to daytime hours is exempt from Montgomery's Noise Code, it is not without impact, as implied in the Noise Report in Section 3.3. On page 14, the unreasonable comparison is made between the anticipated construction noise levels ("63 to 76 dB(A)") and the sound levels measured at the site's emergency entrance immediately adjacent to NYS Route 211, concluding "(t)hus, the ambient sound levels at this point will be approximately the same and will be audible during the heavy construction phase of the site." But no one lives there; that's not the residential property line. There may very well be impacts from the construction noise at the rear property lines of the residences on Weaver Street and Rt. 211, even if it is exempt from the noise code.

As stated in the Village Noise Code at Chapter 77-5.D.(4),Occupational Health and Safety Administration (OSHA) required safety devices are excluded from the noise levels. It is important to note that "backup alarms" typically installed on vehicles/equipment are not the only means of satisfying OSHA's safety requirements. In place of backup alarms personnel can serve as "flaggers" to ensure the vehicle can safely reverse or a strobe light can be used during nighttime operations. If backup alarms are used, they should be the type that continuously monitors the noise level behind the vehicle/equipment and adjusts the alarm volume so that it only exceeds the ambient level by 10 dB (e.g., Ecco Smart Alarm). Another feature available for backup alarms is a broadband spectrum alarm signal (e.g., Brigade Alarm) as opposed to the more typical narrowband spectrum alarm signal. The broadband spectrum alarm is much less intrusive and less annoying. The Planning Board may choose to request that the facility employ safety features to minimize the impacts on the neighbors, particularly for fleet vehicles.

3.1 Operational Sound Analysis

Limiting access to trucks – It is unclear whether the facility is proposing something other than signage to restrict truck operations from the northern portion of the facility. Compliance with signage alone may be low. It would be proactive of the Applicant to consider proposing an approach that would not impede emergency vehicles, in the case of an emergency, while discouraging trucks from traveling in restricted areas.

Rooftop HVAC – The Noise Report states that only the offices will be served by air conditioning (3.1.10). It does not appear reasonable that the warehouse areas (other than the office spaces) would not be outfitted with air conditioning, heat and/or ventilation (air exchange). Not only will there be workers in the warehouses requiring some level of HVAC, but at least part of the warehouse space will be used for distribution of medical products. Are these products unaffected by temperature variations? Will all forklifts be electric? Are there no concerns that tenants in other spaces will be storing/distributing products that require conditioned air or concerns regarding warehouse worker comfort? None of this was

included in the acoustical analysis. If there is to be no HVAC systems other than those serving the office spaces, the Applicant should stipulate this as a condition of approval.

As proposed, there is no indication a warehouse tenant will want to outfit their leased space with refrigeration. Will the Applicant stipulate that a new application shall be made to the Planning Board if the addition of a refrigeration system is contemplated at any of the warehouses in order to demonstrate compliance with the Village Noise Code and NYSDEC criteria?

Calculations are not provided for the operational sound emissions as received at the Weaver Street residential properties after Phase 1 is completed, but Phase 2 is not. Comment #5 on Sheet C-106 (Engineering Drawings) notes that a temporary 8 ft sound wall will be constructed on top of a 3 ft berm. The attenuation for this structure will not be the same as for a 19 ft tall building, which will be the case when Phase 2 is completed.

In addition, the proposed sound wall apparently only extends to the westerly margin of the Phase 1 (Sheet C-106). There will apparently be a direct line of sight from the westerly loading docks in the Phase 1 building to the westerly properties on Weaver Street, as well as a flanking path for sound around the edge of the barrier for residences somewhat behind the barrier. All these receptors should be evaluated for regulatory compliance.

Notes on Sheet C-101 specify that one of the sound walls between warehouses 1 and 2 shall be 14 ft in height and the other 15 ft. Please clarify if this is accurate, or a typo. Also address whether the spacing between the two barriers is such that sound will be reflected off vertical building surfaces and off the close side of the more distant barrier and the backside of the closer barrier. This effect would reduce the effectiveness of the barrier; thereby, increasing the sound levels at the Weaver Street properties.

Emergency generators (EG) - The site plans do not appear to show where the EGs will be located. It is also unclear based on the narrative provided on page 11 of the Noise Report where it states:

> "The truck loading bays and generators will be located in the site's interior, outside spaces and the buildings themselves (the two southern buildings) will then act as a very effective sound barrier for receptors to the northeast resulting in lower decibel levels Analysis Point 3 for those sources."

On page 10 of the Noise Report, it states:

> "12. Concrete "pads" will be added at ground level along the buildings near the truck loading bays for emergency generator use. Their use will not be for day-to-day operations but for emergencies accompanied by a power outage7."

The location of the EGs should be shown on the site plan so it is clear where they will be located. It is only with this location information that a proper review of the potential impacts can be made.

What analysis has been done to demonstrate compliance at the Rt. 211 residential properties for the EGs?

Additional information regarding the EGs need also be provided including when they will be tested (time of day and day of week) and how frequently will they be tested? How many will be tested simultaneously or if staggered how will the testing be scheduled? Simply because the testing of the units may be compliant with the Village's Noise Code does not negate that the EGs will likely be audible and therefore, provide some degree of annoyance to the adjacent residential properties.

Will there be any potential impulse sounds — as defined by the Village Noise Code —occurring at the proposed facility? If so, how will these sounds be mitigated to comply with the provisions of the Village Noise Code?

The warehouse buildings as sound barriers - The building can serve as both a barrier to noise originating from the opposite side of the facility site from the Weaver Street residential properties and it can also serve as a source of noise if windows or doorways are left open. Are there windows or ventilation openings? Will the Applicant stipulate to keeping closed all windows, doors and also dock doors when unoccupied by a trailer?

Comment regarding Table 5 (page 12 of the Noise Report):

A. What are the actual distances from the facility source locations and the receptor locations used to determine compliance with the Village Noise Code?
B. The labels used in Table 5 are inconsistent with those used in Table 2a and the aerial map on page 15.
C. The sound levels for all sources at the facility must be combined at each receptor location prior to making a compliance determination with the applicable daytime and nighttime standards in the Village Noise Code and when comparing to the ambient sound level associated with that receptor location.
D. It appears that it is assumed for purposes of determining prospective compliance that there will be only one vehicle traversing the site at a time. This is not a reasonable assumption considering the report notes that "(s)pace will be provided for up to 266 cars and 96 trucks (loading bays)." Engineering and Surveying Properties letter dated May 12, 2023, states the "Applicant is proposing 94 spaces for loading/parking and has defined 8 additional spaces for truck parking for an ability to load/park 102 trucks."

E. Auxiliary equipment should be considered (refrigeration units) on the trucks, if applicable, as should be the noise from loading activities (e.g., forklifts entering and exiting truck bodies, boxes hitting the sides of trailers, etc.), and the hooking and unhooking of trailers.

F. It is not correct to calculate a barrier insertion loss for one set of distances and apply it to all other subsequent distances as was done in Table 5 for each source. For example, the Noise Barrier Insertion Loss Estimate calculation sheet on page 22 which was based on a truck on the entrance lane, operating 24 feet from the barrier and the receptor location at 12 feet on the other side of the barrier. At a distance of 12 from the barrier, the analysis location would be within the facility's property boundary (also within the conservation easement). For obvious reasons – most importantly that the analysis location is not at the more distant location of the property boundary with the adjacent residential properties – this is a completely erroneous calculation and is meaningless in terms of determining compliance. The other issues with the Barrier Insertion Loss Estimation calculations include:
    a. that the assumption of the dominant frequency of sound emissions from a diesel vehicle is 1000 hertz when in fact it is more appropriately represented by 500 hertz. Doing the same calculation at 500 hertz will lower the effectiveness of the barrier.
    b. the height of the source (in this example a truck) is higher than the height of the barrier.

Vegetation as a Sound Barrier (based on May 12, 2023, correspondence from Engineering & Surveying Properties and May 2, 2023, correspondence from B. Laing Associates) – The attenuation of foliage is addressed in International Standard Organization, *ISO 9613-2 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation.* "This part of ISO 9613 specifies an engineering method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources."

> *A.1 Foliage* - The foliage of trees and shrubs provides a small amount of attenuation, but only if it is sufficiently dense to completely block the view along the propagation path, i.e. when it is impossible to see a short distance through the foliage. The attenuation may be by vegetation close to the source, or close to the receiver, or by both situations.

Even if those conditions were met, the ISO Standard shows no attenuation (0 dB reduction in sound level) for a propagation path length through dense vegetation of less than 10 meters (33 feet). When the path length is between 10 and 20 meters, the Standard shows 0 dB attenuation for frequencies below 250 Hz (the low frequencies of diesels) and only 1-2 dB attenuation for the other frequencies emitted by diesels, gas-powered trucks, and passenger cars.

Planting a row or two of pine trees (trees of any kind) will have no acoustical impact. This is not an acoustically acceptable alternative to a Hoover Plywall sound barrier.

The B. Laing Letter dated May 2, 2023, discusses how two rows of evergreens will remediate the sound levels of the driveway enough to achieve compliance at the adjacent industrial property line. With the reservations noted above, that's not the issue. The issue is the residential properties in the R-4 district on Rt. 211, a couple of hundred feet beyond that, which will potentially have tractor trailers driving past the back of their houses 24 hours a day. A regulatory analysis of those levels should be provided and to the second-floor bedroom window, as well, if there are to be overnight operations. In addition, without the driveway soundwall, there will be no barrier between all the loading activities, at every loading dock, to the Rt. 211 R-4 residences. The houses front on Rt. 211, but it's our experience that in such residences the bedrooms often face the back, and in this case, it would currently be towards undeveloped woods.

3.2 Traffic Sound Analysis

no comment

3.3 Construction Sound Analysis

The Applicant should stipulate that there will be no construction at nighttime hours or at restricted hours on the weekend as stated in the Village Noise Code.

We have concerns regarding the Phasing Plan as shown on drawing C-105 where the southeastern warehouse will be constructed first (building #1 as shown on that drawing) followed by each of the other buildings in counterclockwise order. One of the main mitigation features of the Applicant's plan is to utilize the warehouse buildings which are closest to the residential properties on Weaver Street to attenuate the noise from trucking operations and loading dock operations associated with all four buildings. Our concerns remain even though the Applicant is proposing to construct a temporary barrier of 8 ft on top of a 3 ft berm for a total effective height of 11 ft found at Comment #5 on Sheet C-106 (Engineering Drawings).

Calculations are not provided for the operational sound emissions as received at the Weaver Street residential properties after Phase 1 is completed, but Phase 2 is not. The attenuation for this structure will not be the same as for a 19 ft tall building, which will be the case when Phase 2 is completed.

In addition, the proposed sound wall apparently only extends to the westerly margin of the Phase 1 (Sheet C-106). There will apparently be a direct line of sight from the westerly loading docks in the Phase 1 building to the westerly properties on Weaver Street, as well as a flanking path for sound around the edge of the barrier for residences somewhat behind the barrier. All these receptors should be evaluated for regulatory compliance.

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If you have any questions, please contact me directly by email or phone (see below).

Sincerely,

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