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**VIA EMAIL**

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Mr. Timothy P. McColgan  
U.S. Crane & Rigging, LLC  
1520 Decatur Street  
Ridgewood, NY 11385

Re: 850 Route 28  
Town of Kingston, Ulster County, New York  
MC Project No. 20003360A

Dear Mr. McColgan:

The following items are in response to the comments contained in the letter prepared by Barton & Loguidice addressed to Ms. Maxanne Resnick of the Woodstock Land Conservancy dated May 28, 2020. The items are numbered according to their review comments.

1. The study does not take into account air handlers or other equipment that typically would be on the roof of the building(s). Noise levels from these units is consistent and additive, will add to the existing sound environment, and needs to be combined with all the other noise sources.

***Response: The updated Noise Evaluation includes consideration of the air handlers and other HVAC equipment associated with the buildings based on the proposed building locations. These have been combined with other sound sources, including vehicle movements to and from the site, to create a total combined noise level for the project.***

2. Impacts to all wildlife such as amphibians, birds, and mammals should be addressed.



***Response: The NYSDEC requires evaluation of noise impacts as it relates to potential human impacts. There are currently no NYSDEC standards regarding any potential impacts to other mammals/wildlife from a noise standpoint and the mitigation measures being incorporated into the design/operations to mitigate only impacts on humans would also expect to address any potential impact on wildlife. Note that there are other existing commercial operations in the overall area and along Route 28 including traffic volume sources that generate noise. These all already contribute to the ambient noise levels for the area.***

3. The study appears to assume that only one blast hole drill rig will be used at a time. Two or more drill rigs operating at the same time are very different from a noise perspective than just one at a time. To produce the volume of rock removal proposed, please provide the (actual) maximum number of drill rigs to be used on site at the same time and assume that they will be operating relatively adjacent to each other as many blast holes are required in a concentrated area to produce controlled blasts. Also, account for drilling in multiple locations on the site.

Bluestone is described as a “hard” rock with a Mohs hardness of 7 (for comparison, granite is 6.5 to 7 and Limestone is 3.5 to 4) according to the NYSDEC 2018 Mineral facts publication. Drilling operations will take longer in bluestone than they would in “softer” rock and it is not clear if that has been taken into consideration in the blast rock production which also lends to believe there will be many more than one rock drill operating at the same time.

***Response: The evaluation assumes one blast hole drill rig operating on the site at any specific time. The contractor’s site-specific blasting plan will have to be reviewed with the Town.***

4. The noise impact from a drill rig appears to be based on the drill rig located at the center of the site. The noise impact should be determined at the closest sensitive noise receptors or receptor area using the actual number of drill rigs that will be operating at the same time and under the circumstances that would cause the worst (noise) case.

***Response: The positioning of the drill rig has been moved to reflect the worst-case location scenario. Other locations on the site would be less critical from the most sensitive noise receptors. As noted on the Noise Mitigation Plan, the temporary/movable noise barriers will be positioned based on where the drill rig is situated on the site during any specific time.***



5. The report states that “noise levels (84 dBA) for the drill rig was based on a Sandvik DP150 I Pantera at 50’ from H2H historical data”.
- Please compare and present this information to the actual drill rig to be used.
  - The study stated that the information on noise for the rock drill was from H2H historical data. That data backup needs to be provided for review. It needs to be clarified exactly what the historical data reflects from a noise perspective and how it applies specifically to the 850-project site.
  - If the project will use different drill rig(s), the historical data discussed can be very different than what is actually experienced at the site under operations.

***Response:*** *The noise levels for the rock drill used in the updated Noise Evaluation are based on published data, including NYSDEC data, and data provided by the manufacturer. It is anticipated that any equipment used on the site would have comparable or less sound generation than the drill analyzed.*

6. The Sandvik website and data specifications state that the noise levels inside the operator’s cabin will be 80 dBA or less, but no data on 50’ was able to be found. If the Sandvik equipment will absolutely be used, please provide manufacturers noise specifications that can be used to compare to the NYSDEC Noise Policy.

***Response:*** *Comment noted. See attached reference data from NYSDEC Noise Policy Table D for typical equipment. If equipment with lower dBA levels at 50’ referenced distance is used, the resultant levels will be lower.*

7. The rock drill that will actually be used needs to be included in the noise study.

***Response:*** *The noise specifications for the rock drill equipment was considered and the NYSDEC levels were utilized in the updated Noise Evaluation.*

8. NYSDEC Table C says typical noise level at 50’ = 98 dba for rock drilling rigs. How does this compare to the data discussed, but not substantiated, in the noise study?

***Response:*** *The analysis utilizes the noise level at a 50 feet reference distance as indicated in Table D of the NYSDEC guidelines evaluating potential noise impacts. If a quieter piece of equipment is used, the impacts will be less.*

9. The report states that the berm noise barriers claim a reduction of 14 dBA based on historical data from H2H, please provide the substantiation of that data.

***Response:*** *Based on information published by the Federal Highway Administration, typical berm attenuation can be up to 15 dBA when the berm is several feet*



*above the sources but more typically the attenuation ranges are between 10-12 dBA and this latter range was utilized in the updated Noise Evaluation.*

10. The statement “A 30-foot wide by 15-foot high berm will cause a ~14 dB decrease in sound levels produced by mobile and stationary equipment when the sound source is 5 feet below the top of the berm is not substantiated by any data provided or analysis software. When the “line of sight” from a noise source to a receptor is “cut off” the result is typically a 5 dB reduction for A weighted sound. Reductions of 1.5 dBA +/- for every 3.3 feet can be also expected.

***Response:*** *The attenuation factors have been adjusted to reflect typical reductions taking into account the line of sight and varying elevations involved. Actual attenuation at receptor locations will include the reduction due to the berm as well as the reductions for distance separation from the noise sources. The estimated reductions due to the berm ranges between 10 to 12 dBA. As the berm height increases, the amount of expected attenuation will also increase further as noted in the comment.*

- It is presumed the rock crusher will be used (for four (4) years) during the development and operational phases of the site. Will it be moved as the existing grade is transitioned to the final grade? How many different locations will the rock crusher occupy? Please identify them.

***Response:*** *It is anticipated that a rock crusher will be utilized over the entire site preparation period for each building and will be located to maximize efficiency of use. The associated levels are based on the values contained in Table C of the NYSDEC guidelines. The proposed temporary noise barriers/berms and temporary fencing will be moved to match the position of the rock crusher on the site during the site preparation/construction phase (see EAF Addendum for discussion of expected duration).*

- The rock crusher is shown in Section B-B' to be only 5 or 6 feet tall. It can be reasonably assumed that will not be the case. What is the actual “noise” height of the proposed rock crusher?

***Response:*** *The height of the sound source of the rock crusher has been adjusted and is now at a more typical 10 feet elevation above ground level.*



- Conservatively, and for example only, reasonably assume the noise from the crusher can be shown to emanate from 10 feet above its base or foundation. This puts the noise from the crusher at elevation 500 feet according to Section B-B' in the 11/14/2019 study. Also, in section B-B', the bottom of proposed berm B-2 is shown more than 100 feet away (see comment 10) at elevation 489 feet. When the berm is added to elevation 489 with a flat top (see comment 11) and 15 feet in height, the elevation for noise attenuating purposes would be 503'.

Based on these elevations, taken from Section B-B', the rock crushers noise source could actually be above, or just a few feet below the top of berm B-2 using the proposed site grades. An attenuation of even 2 dBA at best could be claimed if a few feet below the berm top, not the 14 dBA claimed by the applicant.

Additionally, the grades shown in B-B' for the pre-development phase, place the rock crusher noise source even higher at least 509 feet, which would be 6 feet above berm B-2, that presumably won't even be there yet. Therefore, the actual noise levels from the crusher would be approximately 73 dBA during the pre-development phase of 2 to 3 years, not the 58 dBA claimed.

Using the sound attenuation principles (6dBA per distance doubled) stated by the applicant, the expected noise levels from the rock crusher at M-2 would likely be 70 to 73 dBA in predevelopment and in the final grade conditions, not the 58 dBA claimed in the study.

An increase in existing noise levels of more than 20 dBA (from the existing 52 dBA to 73 dBA) should not be taken lightly. The applicable NYSDEC Noise Policy including as Appendix A in the study, states that an "increase of 6 dB(A) may cause complaints" and human reactions to increases of 5 dBA is considered "intrusive" with increases of 15 to 20 dBA as "objectionable". There needs to be an analysis accounting for actual elevations of the noise sources and clear results presented to allow reviewers to be fully aware of, and understand, the total combined impacts.

***Response: Comments noted. Based on the revised Noise Evaluation, the levels were recomputed, and daytime levels are expected to be in the low 50 to 60 dBA range which is typical of the level of roadway traffic noise. After mitigation, the levels are projected to be in the low to mid 50 dBA range. The shape of the top of the berm and the adjusted elevation of the berms have been shown on the revised berm detail on the Medenbach and Eggers Sound Barrier***



***Plan. Furthermore, additional mitigation measures have been identified to address and minimize the noise level increases at the area receptors.***

11. The further away the noise barriers are from the source, the less effective the barrier or berm will be due to scattering and other factors. The noise, or sound pressure, does not travel in a parallel path fully intact to the barrier because it begins to spread out over distance in all directions spreading more and more the further it travels. The sound pressure that rises over the berm(s) un-attenuated will increase as the distance between the berm and source increases, rendering the barrier less effective the further away it is.
- For example: The berm (B-4) shown on Section C-C', is directly adjacent to the blast hole drilling rig rendering that berm relatively effective in the case of receptor M-1. If the rock drill was say, 125+ feet away from the barrier, the effective attenuation of the barrier would be less. Yet, the applicant claims the same attenuation of 14 dBA for this example as they do for the barriers that are 125' or more from the example noise sources. There is no accounting for the increased distances between noise sources and barriers that exists in real situations. This needs to be addressed to fully quantify the noise impacts.

***Response: The comment is correct. The revised Noise Evaluation addresses this situation.***

12. The proposed berms also have “breaks” which reduce the effectiveness. The applicant should verify, quantitatively, the reduced effectiveness of the proposed berms with breaks in them.

***Response: The revised Noise Evaluation addresses this situation of berm “breaks” and identifies recommended methods to address the effect of any areas of discontinuous berms, including use of temporary barriers, during the site preparation/construction phases.***

13. Earth berms should have a flat top to work optimally and the theoretical “point” on the top of a berm is not practical, stable, or sustainable from a construction standpoint. The barriers will not perform as predicted and need to be revised or predicted attenuation corrected (reduced) as appropriate.

***Response: The berm treatment has been updated on the revised Medenbach and Eggers Sound Barrier Plan to reflect a more effective and more easily constructed and stabilized flat top configuration which is estimated at approximately at 5' width. The revised Noise Evaluation also identifies recommended methods to maximize berm effectiveness.***



14. The report does not appear to address the noise from truck traffic by combining these levels to the other on-site noise sources.

**Response:** *The revised Noise Evaluation addresses the combination of all noise sources on the site including that generated from the truck traffic movements on the site during the site preparation and construction phase. For the operational phase, the truck traffic movements to and from the site based on the CME traffic report, together with the building related HVAC equipment and onsite operations, are evaluated.*

15. The surface of the ground is highly reflective (hard rock) and linear source noise such as the noise from haul trucks, would not be expected to be attenuated at 6 dBA consistently over rock. A more conservative rate of 3.0 dBA over hard surfaces is more appropriate with 4.5 dBA over “soft ground” as per NYSDOT and FHWA guidance (referenced here as most appropriate for linear moving motor vehicles). Testing with actual truck traffic, measured at distance doubling intervals on-site could be used to show actual results if the applicant feels more than 3 dBA inverse square law attenuation is applicable.

**Response:** *This has been adjusted to reflect the results from the FHWA Noise Model as consideration of the standard inverse square law, as well as other contributing factors. See updated Noise Evaluation and recommended future monitoring to obtain actual operating results to ensure that within the recommended threshold the predicted noise levels are not exceeded.*

16. Trucks will be idling on the site; this needs to be added to the other on-site project produced noise levels.

**Response:** *The updated Noise Evaluation includes the addition of on-site truck sources to reflect the effect of idling trucks as a stationary noise source as well as that from other trucks moving on the site.*

17. The studies discuss vegetation and trees helping to attenuate noise levels such as a dense forest will do. The areas between the project site and sensitive receptors consist of a greater majority of deciduous trees and will not provide attenuation as claimed during non-peak foliage and underbrush periods. As we understand, there may have also been tree removals, approved in 2019 by the Planning Board for no more than two acres. There has been no confirmation on what the actual cleared acreage was. Please revise the attenuation that was based on trees and vegetation accounting for reduced density during non-leaf periods, tree removals, and sparse underbrush.

**Response:** *The vegetation attenuation effect was removed from the modeling for the “leaf off” results in the revised Noise Evaluation to reflect late Fall, Winter,*



*and early Spring. However, the typical condition results for other seasons considers that there would still be some positive reduction affects expected from vegetation, i.e., during late Spring, Summer, and early Fall.*

18. The study references the construction period or site development phase as temporary. It appears that this period will be three (3) to four (4) years, which would not likely be considered “temporary” to the impacted resources or even the general public.

***Response:*** *Comment noted. The site preparation/development period is estimated at up to approximately 12 to 18 months for each building or approximately three (3) years based on the EAF Addendum. This is a somewhat longer period than some other typical construction activity but is clearly not a permanent condition. After the grading is completed and the buildings are constructed, these activities will cease. Therefore, it was referenced as temporary in the original study and this condition has been further clarified in the text of the updated Noise Evaluation and EAF Addendum.*

19. Building materials and construction need to be considered in attenuation of interior noise transmission to outside the confines of the building. The density of the building materials may not be enough to fully attenuate interior noise. Known mitigation measures in similar facilities included installation of noise absorption/attenuating mats to reduce noise levels escaping the building. Doors and windows are also points of exit for interior noise to become outdoor noise and have been a contributing factor in similar facilities. The noise levels from these sources need to be addressed and accounted for.

Additionally, an all-inclusive description and quantification of noise sources inside the building needs to be evaluated and included. Backup alarms from forklifts, jackhammering of concrete waste from tooling, and air compressors, are examples (but not all-inclusive) of noise sources that need to be evaluated.

***Response:*** *The revised Noise Evaluation includes additional recommended mitigation measures to reduce noise levels that potentially could escape from the building. A list of equipment and activities is also provided in the EAF Addendum. Potential building insulating noise reduction measures are also identified in the evaluation.*





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20. Noise contour plans/maps should be required by the Town as they can easily be used to represent the existing and proposed noise environment at the site including all sources and provide a full understanding to fully assess the projects' noise impacts. At a minimum, the actual expected levels compared to existing levels need to be represented in a consolidated manner.

***Response:*** *A table has been added to the revised Noise Evaluation comparing the existing and expected future noise levels, which account for the effect of the combination of all noise sources during both the site preparation and for future operating conditions.*

If you have any questions regarding the above, please do not hesitate to contact us.

Very truly yours,

MASER CONSULTING CONNECTICUT, P.C.

  
Philip J. Greal, Ph.D., P.E.  
Principal/Department Manager

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Enclosures