**AURORA ACOUSTICAL CONSULTANTS Inc.**
745 Warren Drive
East Aurora, New York 14052
716-655-2200 office
info@auroraacoustical.com

April 13, 2023

S.A. Dunn and Company, LLC.
Dunn Landfill
315 Partition St Ext.
Rensselaer, NY 12144

**Attention:** Mr. Curt Taylor
**Subject:** S.A. Dunn Mine and C&D Landfill MSE Berm Construction Noise Assessments

Dear Mr. Taylor:

As requested to provide information to respond to noise assessment comments by NYSDEC, Aurora Acoustical Consultants Inc. performed separate assessments of noise projected to be received at the closest receiver locations during construction of the MSE berm at the northeast portion of the S.A. Dunn Mine and C&D Landfill.

The berm construction noise assessments characterized the maximum noise levels produced by construction equipment operating at four representative source positions along the northeast portion of the site. The construction sound levels are evaluated at the closest receiver locations that include Locations 1, 6, and E, which are described in the following Figure 1.

The evaluated berm construction equipment sources consisted of a Caterpillar 8DR bulldozer placing soil along the berm, simultaneous with an articulated truck depositing soil. The modeled source level inputs were obtained from measurements of landfill construction equipment. The bulldozer was represented with a maximum source level of 79 dBA measured at a distance of 45m, and the truck was represented with a maximum source level of 81 dBA measured at a distance of 5m. The berm construction noise assessments also included evaluations of sound levels from pass-bys of articulated trucks on top of the berm. The assessments characterize the sound levels from pass-bys of loaded articulated trucks with a maximum truck pass-by sound level of 84 dBA measured at a distance of 6m and a pass-by rate of 40 vehicles per hour. The sources were represented with heights of 3.3m above grade elevation representing the engine exhaust position.

Figures 2 to 5 summarize the predicted noise contours from assessments of four representative equipment source scenarios developed using the landfill terrain elevations associated with Fill Progression 5 Phase 8A. Sound level boxes were placed in the model at representative boundary and community locations corresponding to survey and assessment locations employed in sound surveys performed in August, 2022. The background sound surveys characterized facility operations and background noise from road traffic, environmental sources, and mechanical sources and activities at nearby school facilities.

The construction noise levels predicted at receiver locations closest to the northeast berm construction area are summarized in the attached table, along with the average daytime background sound levels obtained from sampling surveys at three locations and from continuous logging at two of the locations. The table also summarizes the average of logged daytime sound levels at Locations 1 and 6, and the average of sampled daytime sound levels at Location E.

**AURORA ACOUSTICAL CONSULTANTS Inc.**
745 Warren Drive
East Aurora, New York 14052
716-655-2200 office
info@auroraacoustical.com


The predicted maximum construction noise levels received at Location 1 on the facility's east boundary to the south of the construction site were well within 6 dBA of the average of the logged background sound levels for each of the four evaluated construction equipment site scenarios. Noise levels that are less than 6 dBA above background sound levels are consistent with the NYSDEC noise assessment policy.

The predicted construction noise levels received at Location 6 (on the facility's east boundary to the north of the construction site) and the sound levels at Location E (at the school playing fields to the north of the construction site) were both within 6 dBA of the average of the sampled daytime background sound levels for two of the evaluated construction equipment source scenarios and were higher than the background sound levels by more than 6 dBA for two other source scenarios.

Construction modeling assessments were accordingly performed to evaluate received sound levels with mitigations that reduce potential differences between the maximum predicted construction noise levels and the measured average background noise levels to less than 6 dBA at the closest receiver locations. The assessed mitigations consisted of portable noise screens placed adjacent to the construction equipment sites at corresponding site elevations. The attached table summarizes the predicted received sound levels from berm construction operations with the mitigation of portable noise screens with heights of 12 feet.

Figures 6 to 9 summarize the predicted noise contours from berm construction sources mitigated by portable noise screens place along the construction sources. In comparison to Figures 2 to 5, the latter figures show that screening should reduce construction sound levels to within 6 dBA of the background sound levels, which would be acceptable in accord with NYSDEC noise assessment policy.

The predicted noise contours from pass-bys of articulated soil trucks on the top of the northeast berm are summarized in Figure 10. The predicted truck sound levels are several decibels lower than the measured average daytime background sound levels and are not expected to significantly increase the average background sound levels.

The following clarifies Paragraph 1 on page 53 of the facility noise assessment of November 12, 2022:

"An environmental noise modeling program was used to predict the sound levels received at residential boundaries and at representative residential locations beyond the facility boundaries, representing current facility operations and future facility operations combined with planned northeast berm construction activities. Figures 6-7 predict the sound levels from current facility operations with cell excavation and construction. Figures 8-10 characterize the received sound levels from facility operations in the northern area, combined with planned berm construction activities at the northeast area."

AURORA ACOUSTICAL CONSULTANTS, Inc.

Daniel P. Prusinowski
Principal Consultant

**AURORA ACOUSTICAL CONSULTANTS Inc.**
745 Warren Drive
East Aurora, New York 14052
716-655-2200 office
info@auroraacoustical.com



## Berm Construction Noise Modeling Summary
### Comparisons of Modeled Construction Sound Levels With and Without Screening Mitigations to Measured Ambient Sound Levels

| Loc. | Modeled Sound Levels without Mitigations | | | | Modeled Sound Levels with Screen Mitigations | | | | Measured Ambient Sound Levels From Sampling Surveys, dBA | | | Measured Ambient Sound Levels From Extended Logging (Daytime Average), dBA | | | Averaged Daytime Ambient, dBA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Constr. Site 1 | Constr Site 2 | Constr. Site 3 | Constr. Site 4 | Constr. Site 1 | Constr Site 2 | Constr. Site 3 | Constr. Site 4 | | 8/1/22 | 8/2/22 | | 8/1/22 | 8/2/22 | |
| 1 | 55.3 | 54.1 | 53.5 | 56.9 | 55.8 | 54.1 | 53.5 | 56.9 | A.M. | 60.9 | 55.5 | 7am-5pm | 60.1 | 60.5 | **60.3** |
| | | | | | | | | | P.M. | 54.2 | 59.6 | | | | |
| | | | | | | | | | Eve | 44.4 | 60.9 | | | | |
| 6 | 63.3 | 56.7 | 55.5 | 64.0 | 59.0 | 55.7 | 54.7 | 58.8 | A.M. | 51.0 | 55.5 | 7am-5pm | 53.8 | 57.0 | **55.4** |
| | | | | | | | | | P.M. | 53.9 | 52.2 | | | | |
| | | | | | | | | | Eve | 50.4 | 54.0 | | | | |
| E | 57.6 | 60.8 | 61.5 | 58.4 | 54.2 | 50.2 | 55.9 | 51.5 | A.M. | 55.6 | 54.2 | - | - | - | **53.3** |
| | | | | | | | | | P.M. | 52.0 | 51.3 | | | | |
| | | | | | | | | | Eve | 52.0 | 51.3 | | | | |

**AURORA ACOUSTICAL CONSULTANTS Inc.**
745 Warren Drive
East Aurora, New York 14052
716-655-2200 office
info@auroraacoustical.com



Figure 1 Facility Sound Survey and Assessment Locations

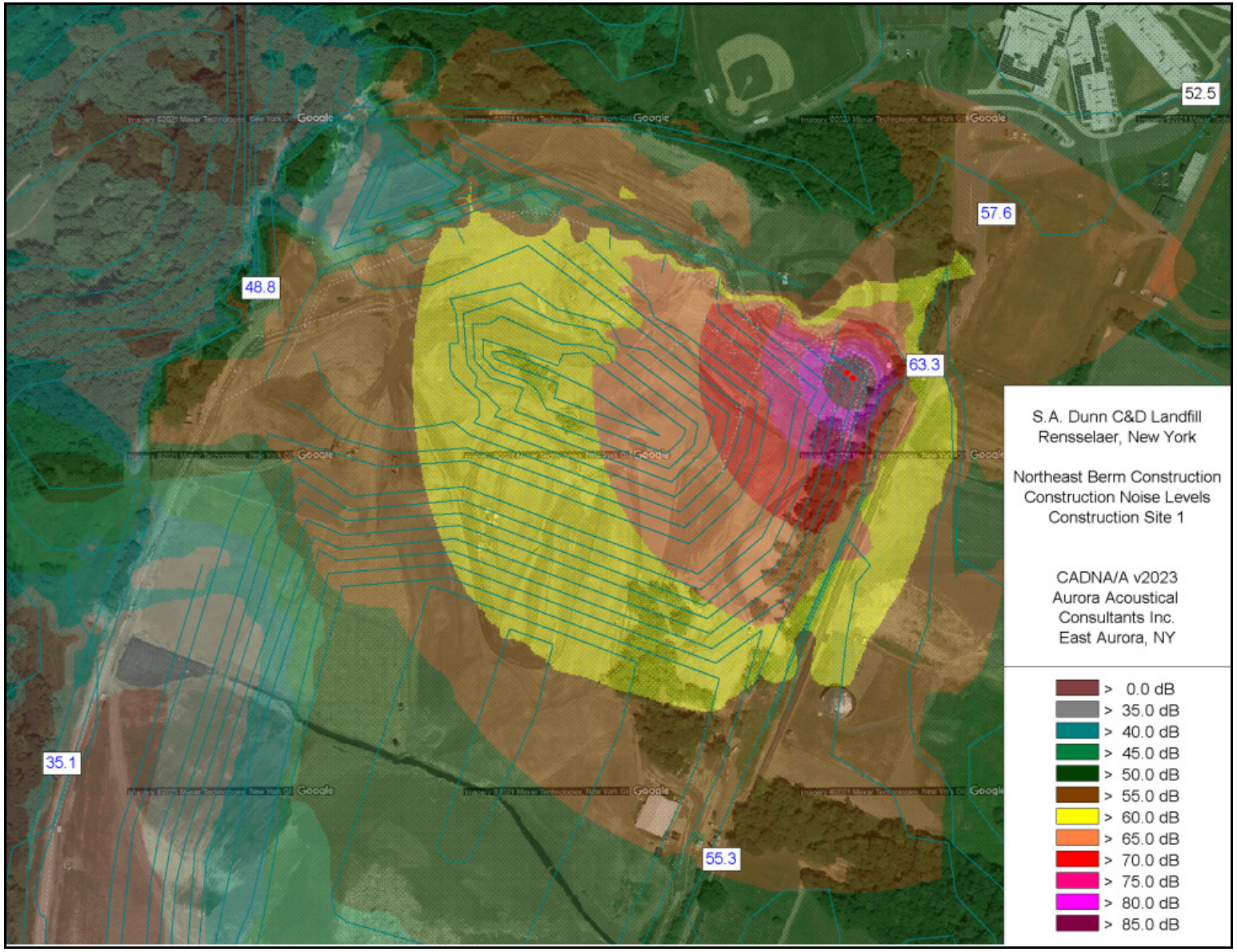


Figure 2 Modeled sound levels from planned berm construction operations at Construction Site 1

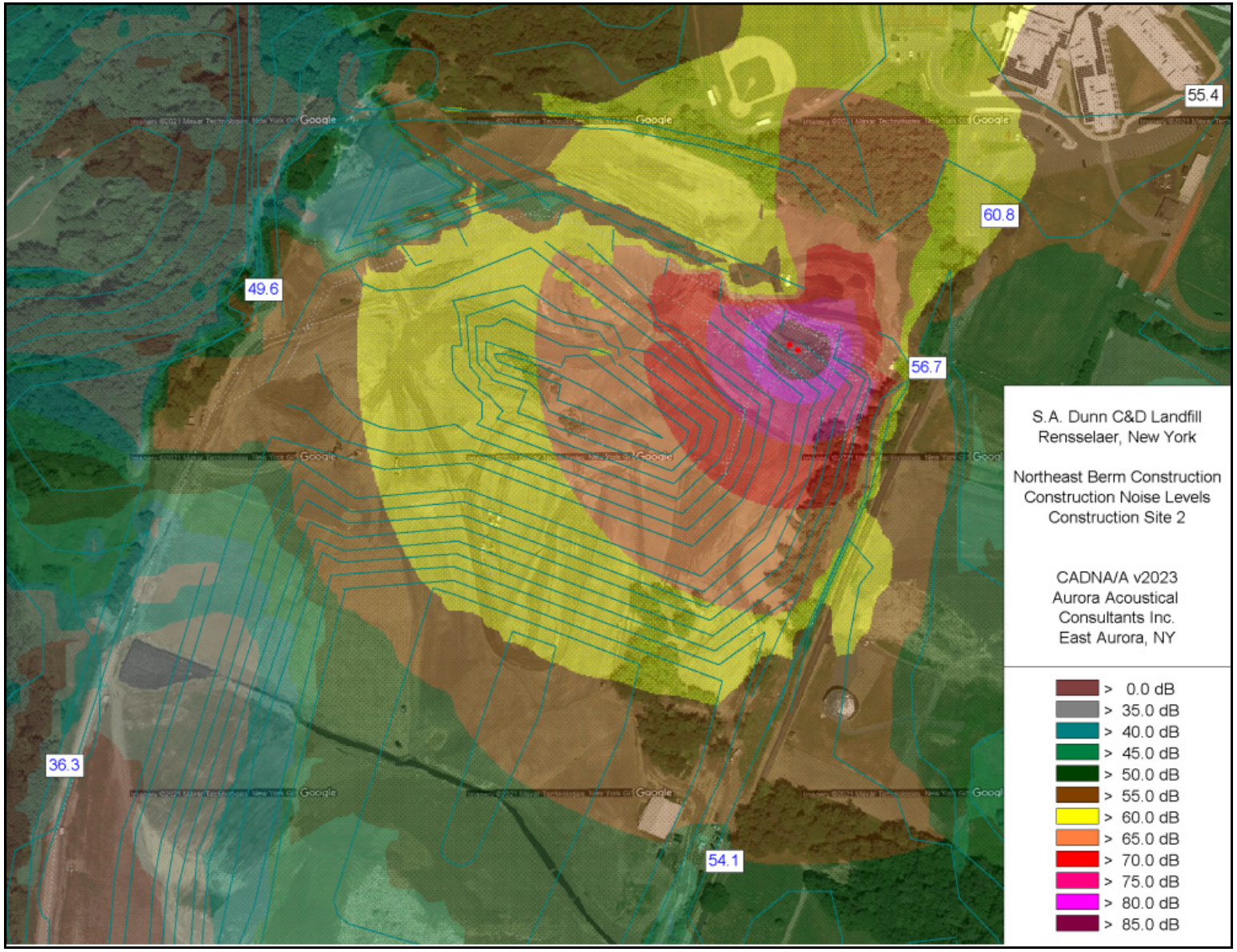


Figure 3 Modeled sound levels from planned berm construction operations at Construction Site 2

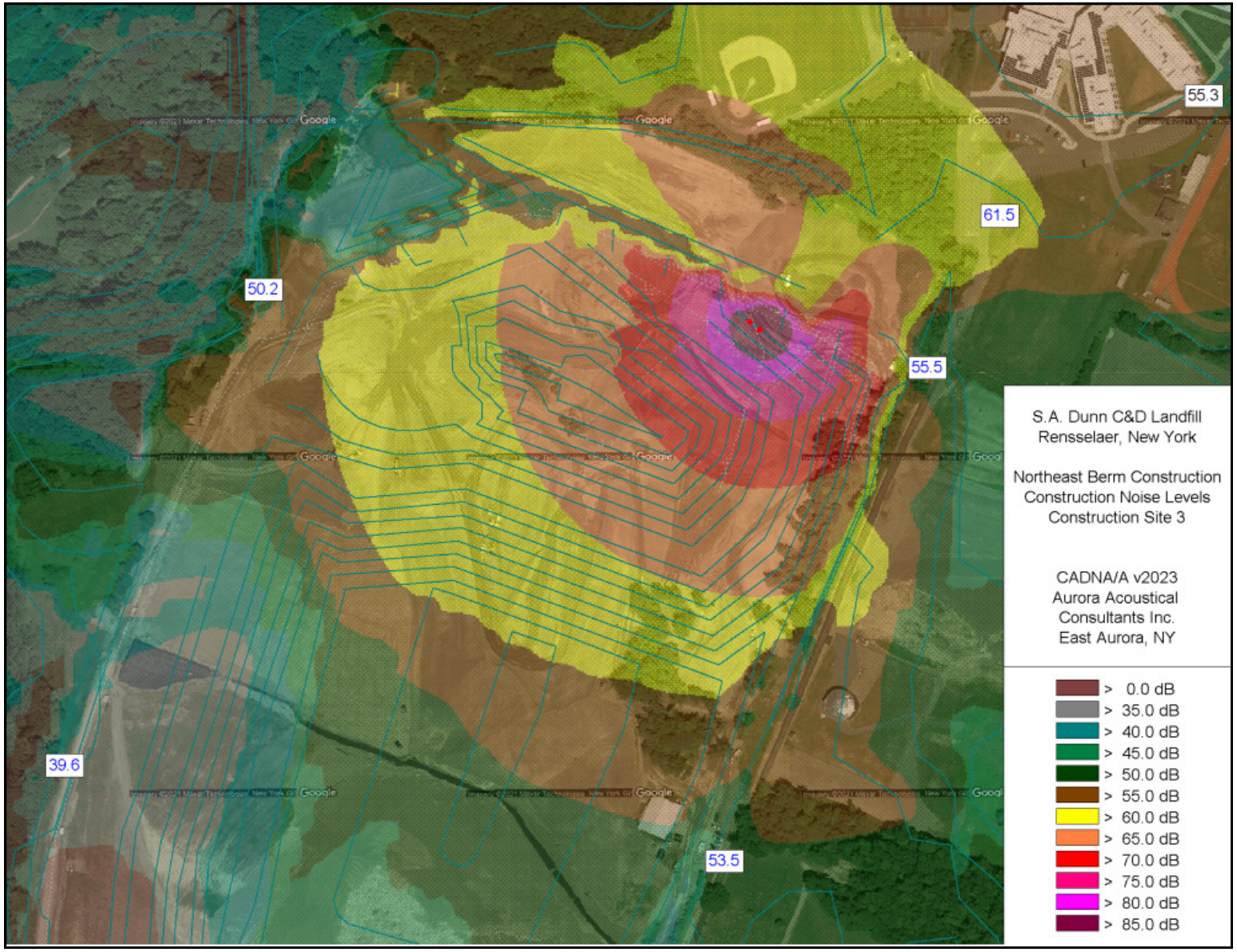


Figure 4 Modeled sound levels from planned berm construction operations at Construction Site 3

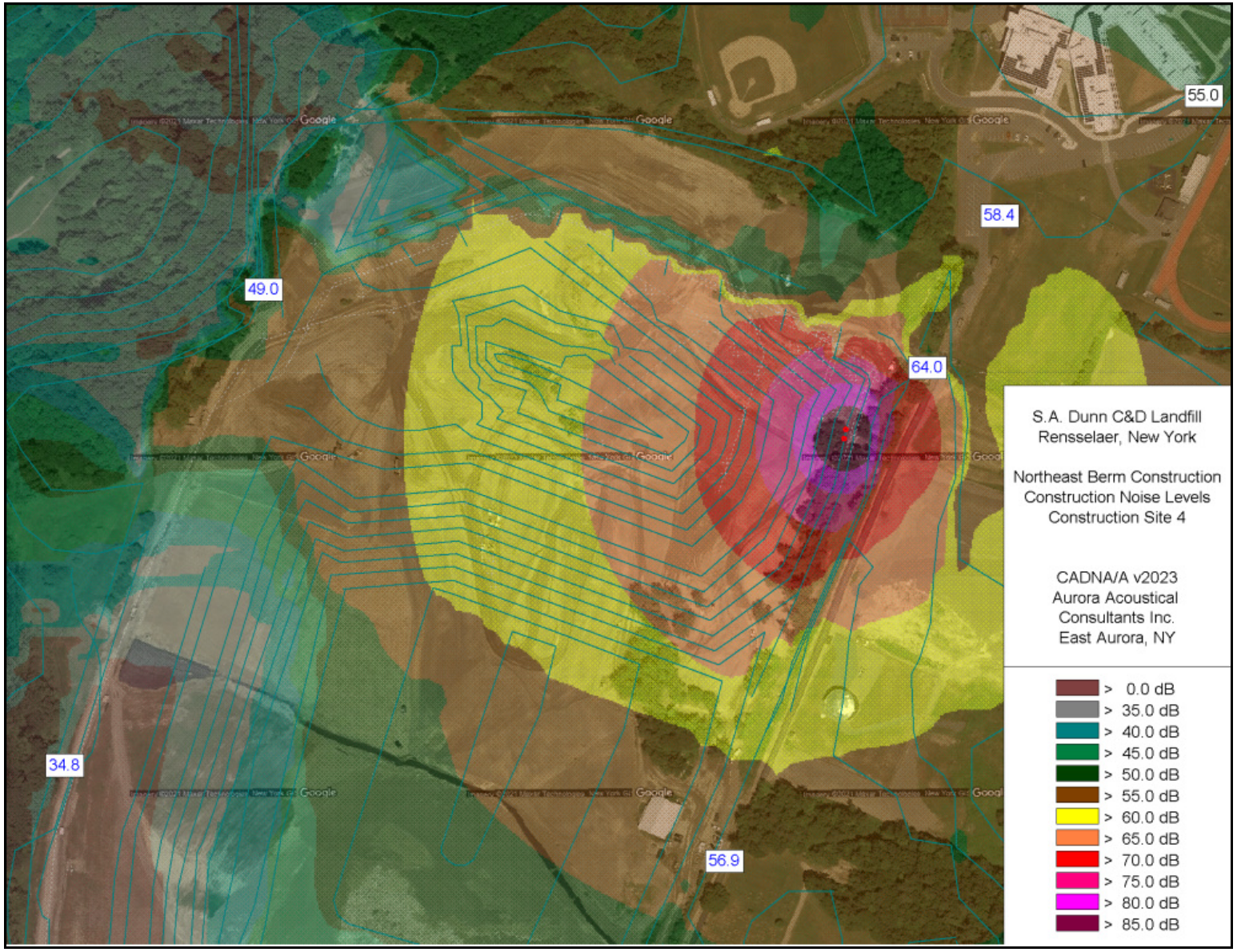


Figure 5 Modeled sound levels from planned berm construction operations at Construction Site 4

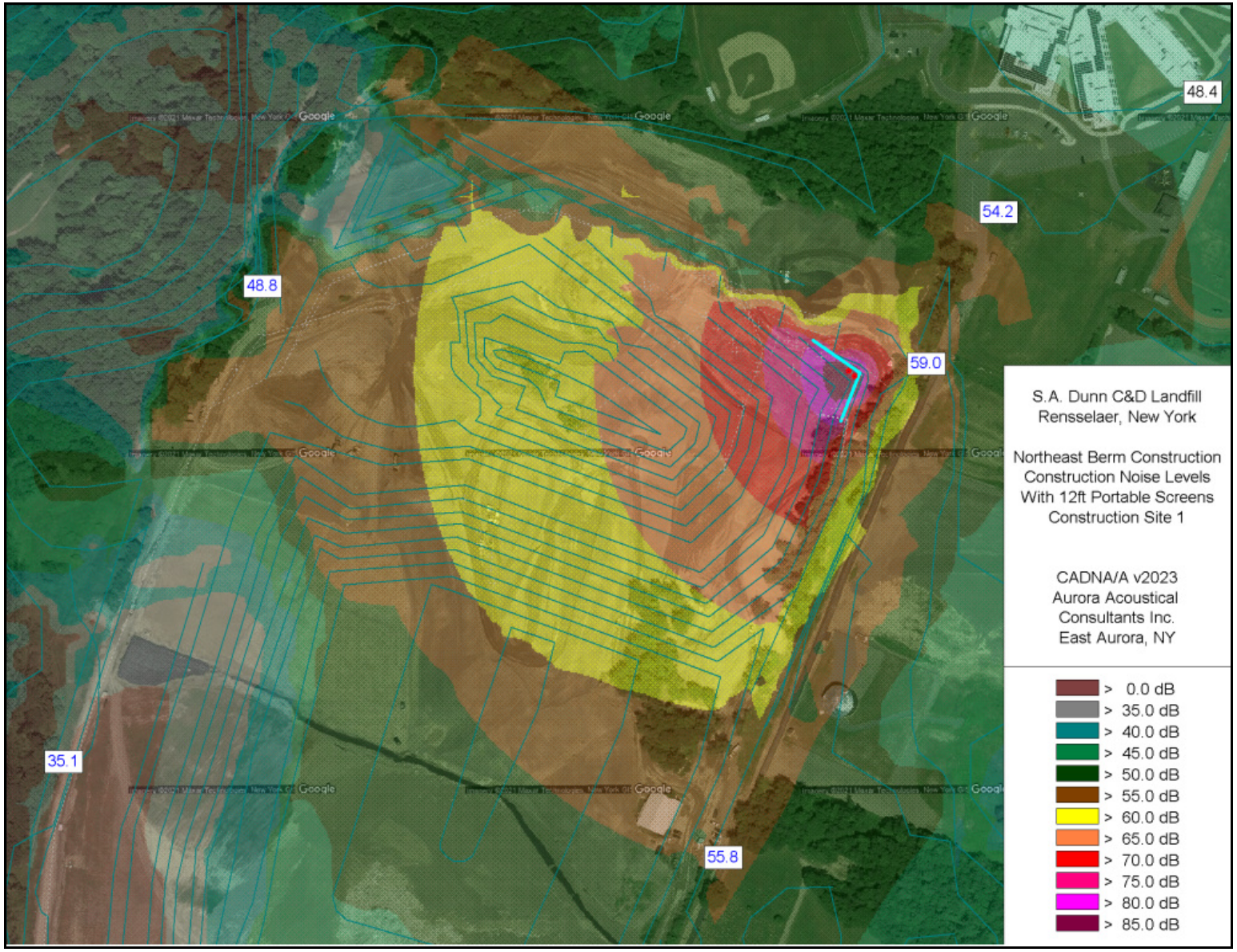


Figure 6 Modeled sound levels from planned berm construction operations at Construction Site 1, mitigated

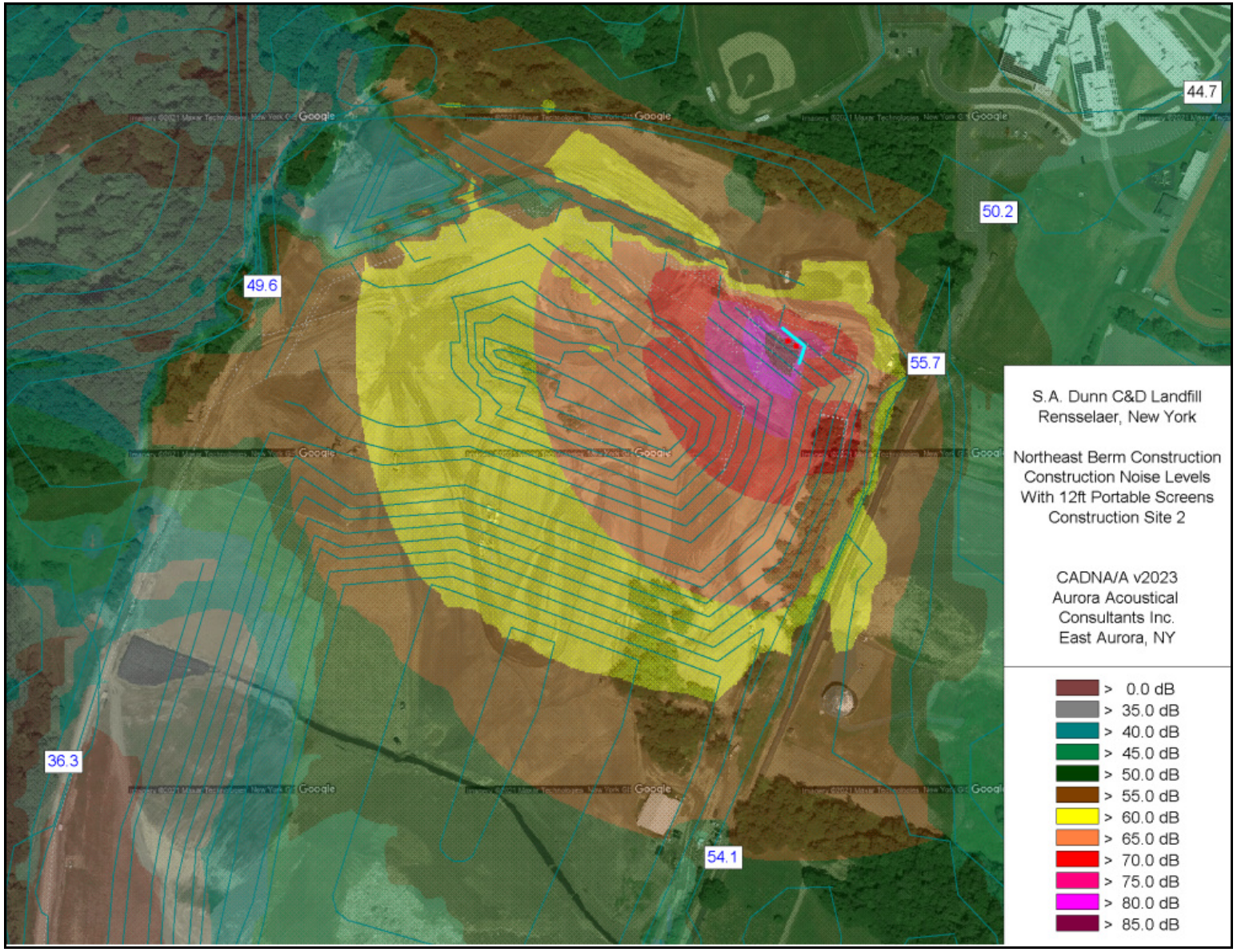


Figure 7 Modeled sound levels from planned berm construction operations at Construction Site 2, mitigated

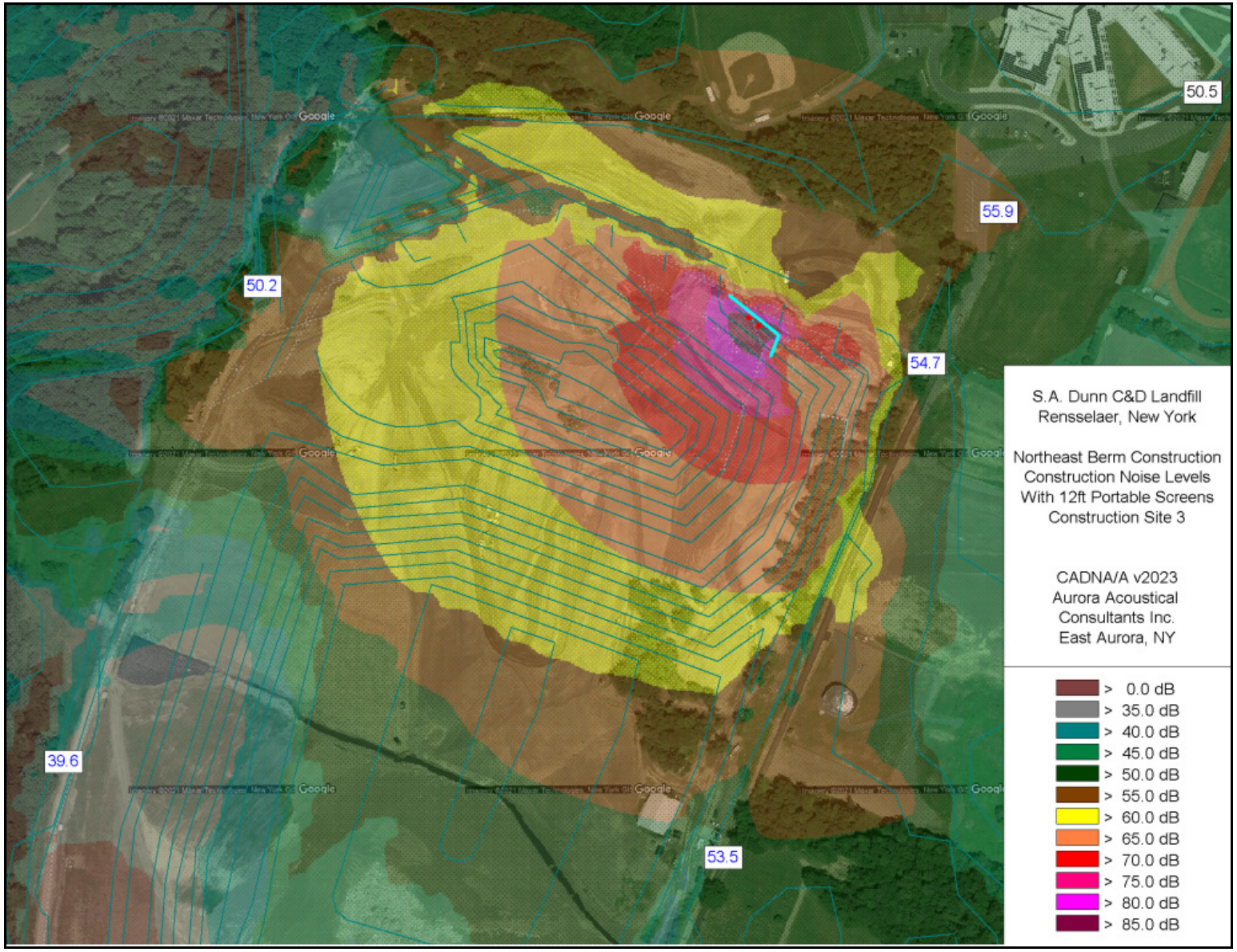


Figure 8 Modeled sound levels from planned berm construction operations at Construction Site 3, mitigated

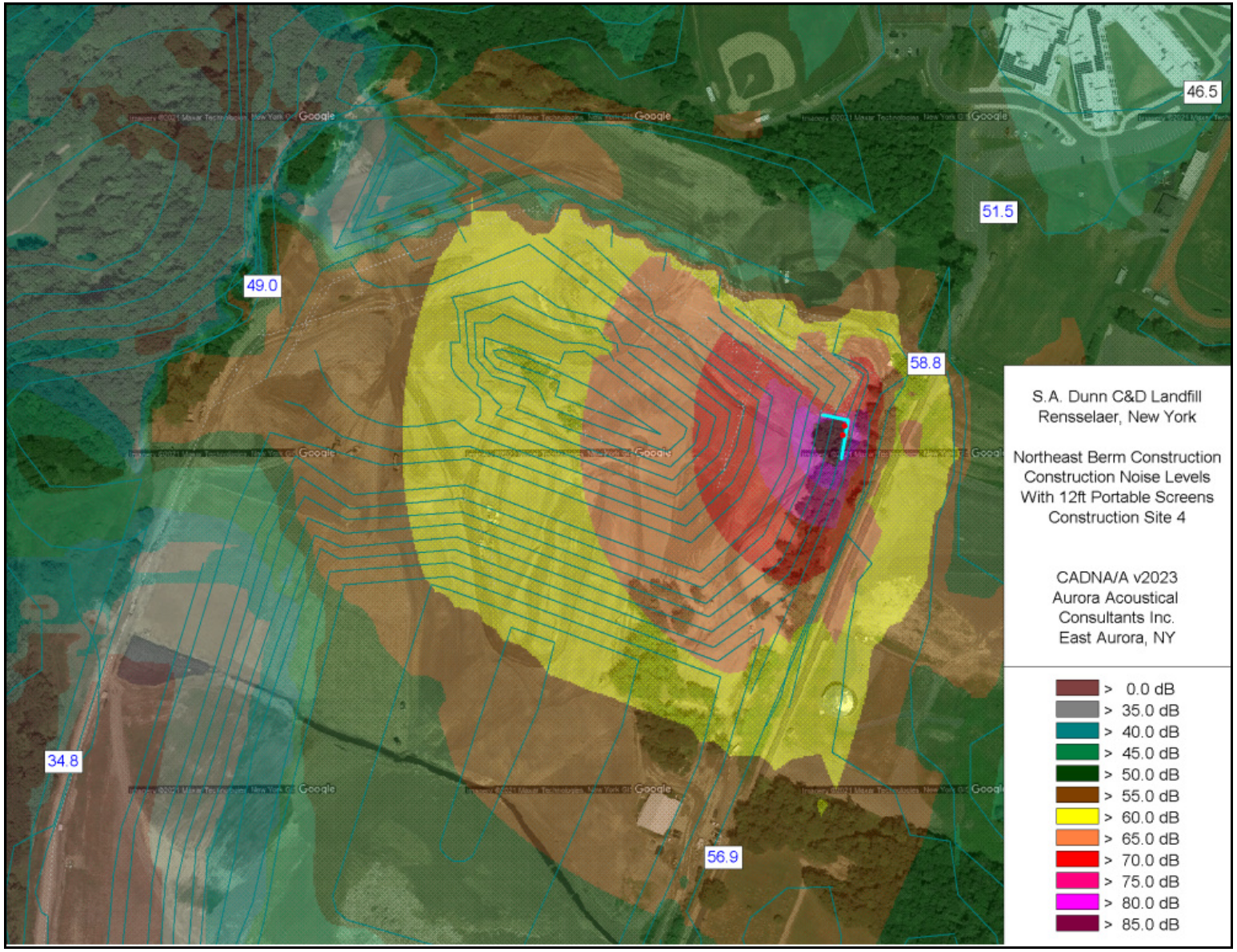


Figure 9 Modeled sound levels from planned berm construction operations at Construction Site 4, mitigated

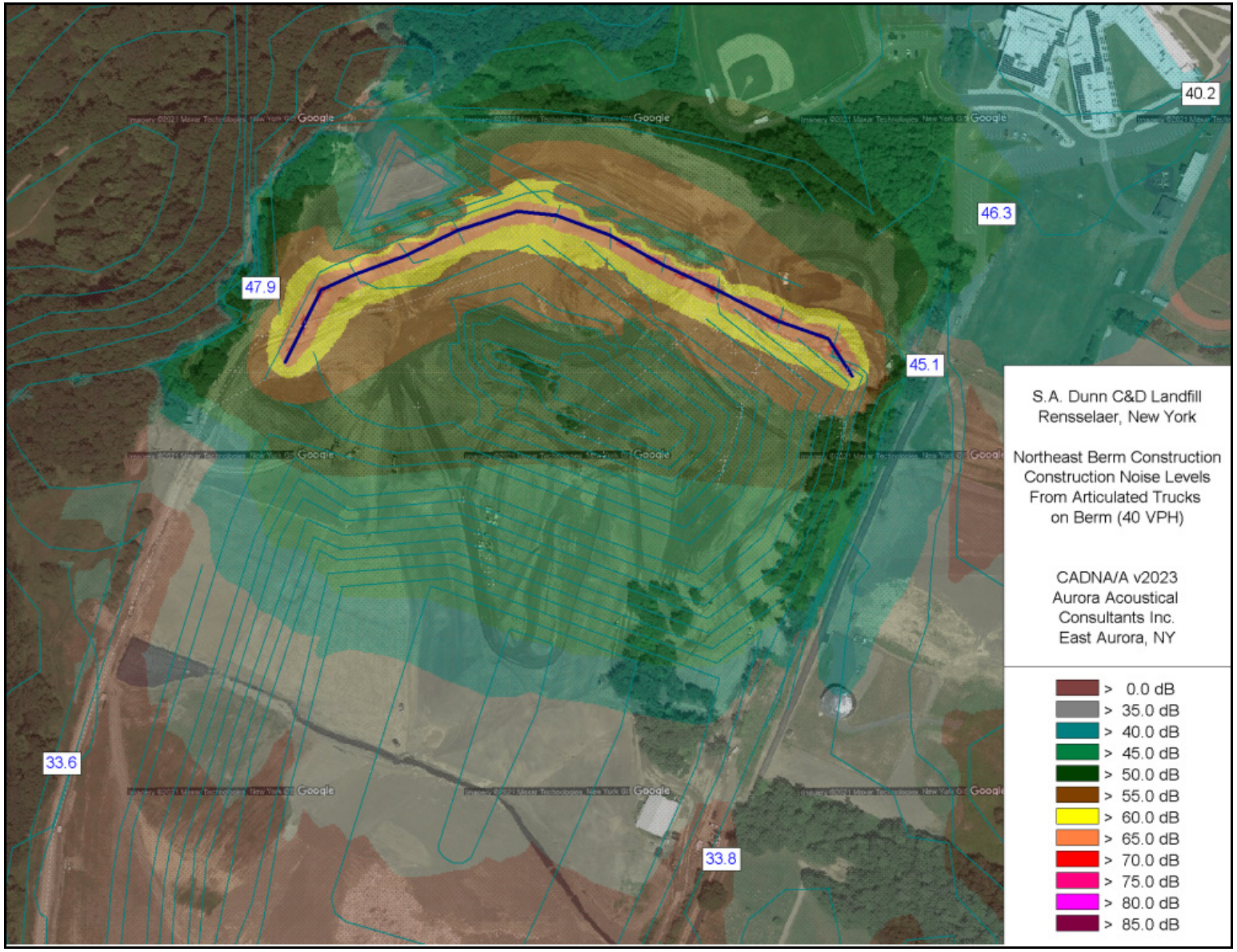


Figure 10 Modeled sound levels from pass-bys of articulated trucks on planned northeast MSE berm