

SECTION 01353 – NOISE & ACOUSTICS MANAGEMENT

SPECIFIER NOTE:

This section includes requirements for noise management. Refer to ASTM E1433 for an overview of the ASTM standards relative to environmental acoustics.
Edit to suit location and project.

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Special requirements for noise and acoustics management during **[deconstruction] [renovation] [construction]** operations.
- B. Related Sections:
 - 1. Section 01300- Administrative Requirements: Environmental Manager and Contractor training requirements.
 - 2. Section 01400 – Quality Control: Meetings and project coordination.

1.2 DEFINITIONS

- A. Ambient noise level: The total noise associated with a given environment, being usually a composite of normal or existing sounds from all sources near and far, excluding the noise source at issue.
- B. Daytime: The hours from 7 a.m. to 8 p.m. on weekdays and 9 a.m. to 10 p.m. on weekends and holidays.
- C. Nighttime: The hours from 8 p.m. to 7 a.m. on weekdays and 10 p.m. to 9 a.m. on weekends and holidays.
- D. Property line: The real or imaginary line along the ground surface and its vertical extension, which separates real property owned or controlled by one person from contiguous real property owned or controlled by another person or from any public right-of-way or from any public space.
- E. Receiving noise area: Any real property where people live or work and where noise is heard, excluding the project or source area.

PART 2 - PRODUCTS

PART 3 EXECUTION

3.1 NOISE MANAGEMENT

- A. Noise Control: Perform **[deconstruction] [renovation] [construction]** operations to minimize noise. Perform noise-producing work in less sensitive hours of the day or week as directed by Owner.
- B. Repetitive and/or intermittent, high-level noise: Permitted only during Daytime.
 - 1. Do not exceed the following dB limitations:

| <u>Sound Level in dB</u> |
|--------------------------|
| 70 |
| 80 |

| <u>Time Duration of Impact Noise</u> |
|--------------------------------------|
| More than 12 minutes in any hour |
| More than 3 minutes in any hour |

2. Provide equipment, sound-deadening devices, and take noise abatement measures that are necessary for compliance.
3. Maximum permissible construction equipment noise levels at 50 feet (dB):

| <u>EARTHMOVING</u> | <u>dB</u> | <u>MATERIALS HANDLING</u> | <u>dB</u> |
|--------------------|-----------|---------------------------|-----------|
| Front Loaders | 75 | Concrete Mixers | 75 |
| Backhoes | 75 | Concrete Pumps | 75 |
| Dozers | 75 | Cranes | 75 |
| Tractors | 75 | Derricks Impact | 75 |
| Scrapers | 80 | Pile Drivers | 95 |
| Graders | 75 | Jack Hammers | 75 |
| Trucks | 75 | Rock Drills | 80 |
| Pavers, Stationary | 80 | Pneumatic Tools | 80 |
| Pumps | 75 | Saws | 75 |
| Generators | 75 | Vibrators | 75 |
| Compressors | 75 | | |

- C. Ambient Noise:
 1. Maximum noise levels (dB) for receiving noise area at property line shall be as follows:
 - a. Residential receiving area

| | |
|------------|-------|
| Daytime: | 65 dB |
| Nighttime: | 60 dB |
 - b. Commercial/Industrial receiving area

| | |
|------------|-------|
| Daytime: | 67 dB |
| Nighttime: | 65 dB |
 2. In the event the existing local ambient noise level exceeds the maximum allowable receiving noise level (dB), the receiving noise level maximum for construction operations shall be adjusted as follows:
 - a. Residential receiving area: Maximum 3 additional dB above the local ambient as measured at property line.
 - b. Commercial/Industrial receiving area: Maximum 5 additional dB above the local ambient as measured at the property line.

3.2 FIELD QUALITY CONTROL

- A. Assess potential effects of construction noise on **[adjacent neighbors] [facility occupants]** in accordance with ASTM E1686 and as follows:
 1. Ambient noise measurement: Measure at the property line at a height of at least four (4) feet above the immediate surrounding surface. Average the ambient noise level over a period of at least 15 minutes.
 2. Ambient noise measurement at urban sites: Conduct during morning peak traffic hour between 7 A.M. and 9 A.M. and afternoon peak traffic hour between 4 P.M. and 6 P.M. In addition, conduct a 24-hour measurement at the proposed project site to document the noise pattern throughout the day. Adjust and weight for seasonal and climatic variations.
- B. Monitor noise produced from construction operations in accordance with ASTM E1780.

END OF SECTION