

Construction Calculations

Phase: Rough Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Excavator	1	85	40	50	0.5	85	81
Grader	1	45	8	50	0.5	45	34
Dozer	1	80	40	50	0.5	80	76
Front Loader	1	45	40	50	0.5	45	41
Combined at 50 feet						86	82
Combined at Receptor 210 feet						74	70
Combined at Receptor 280 feet						71	67

Phase: Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Concrete Mixer Truck	1	79	40	50	0.5	79	75
Paver	1	77	50	50	0.5	77	74
Roller	1	80	20	50	0.5	80	73
Combined at 50 feet						84	79

Phase: Trenching

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Excavator	2	81	40	50	0.5	81	80
Front End Loader	2	79	40	50	0.5	79	78
Combined at 50 feet						83	82

Phase: Fine Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Roller	1	80	20	50	0.5	80	73
Tractor	1	80	40	50	0.5	80	76
Combined at 50 feet						83	78

Phase: Building Construction

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Crane	1	81	16	50	0.5	81	73
Forklift	3	75	20	50	0.5	75	73
Generator	1	81	50	50	0.5	81	78
Welder / Torch	1	74	40	50	0.5	74	70
Combined at 50 feet						85	80

Phase: Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	78	40	50	0.5	78	74
Combined at 50 feet						78	74

Phase: Finishing / Landscaping

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Front End Loader	3	79	40	50	0.5	79	80
Combined at 50 feet						79	80

Sources: RCNM

¹ - Percentage of time that a piece of equipment is operating at full power.

dBA – A-weighted Decibels

Lmax- Maximum Level

Leq- Equivalent Level

Wall #1

Wall Height	Wall Elevation	Rec. elev.	Rec. Height	Source Elevation	Source Height	Source to Barrier	Rec. to Source dist.	Rec. to Barr. dist.	Noise Reduction
12	0	0	5	0	8	10	20	10	13.1