

Construction Calculations

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Dozer	1	82	40	50	0.5	82	78
Tractor	2	84	40	50	0.5	84	83
Combined at 50 feet						86	84

Phase: Grading

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
Grader	2	85	40	50	0.5	85	84
Dozer	2	82	40	50	0.5	82	81
Scraper	4	84	40	50	0.5	84	86
Tractor	3	84	40	50	0.5	84	85
Combined at 50 feet						90	91
Combined at Receptor 580 feet						69	69
Combined at Receptor 1030 feet						64	64
Combined at Receptor 1090 feet						64	64

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	2	81	16	50	0.5	81	76
Man Lift	2	75	20	50	0.5	75	71
Generator	2	81	50	50	0.5	81	81
Tractor	2	84	40	50	0.5	84	83
Welder / Torch	2	74	40	50	0.5	74	73
Combined at 50 feet						87	86
Combined at Receptor 580 feet						66	65

Phase:Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Paver	2	77	50	50	0.5	77	77
All Other Equipment > 5 HP	2	85	50	50	0.5	85	85
Roller	2	80	20	50	0.5	80	76
Combined at 50 feet						87	86
Combined at Receptor 580 feet						65	65

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)	2	78	40	50	0.5	78	77
Combined at 50 feet						78	77
Combined at Receptor 580 feet						57	56

Phase: Utility Trenching

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor ¹	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Tractor	2	84	40	50	0.5	84	83
Combined at 50 feet						84	83
Combined at Receptor 580 feet						63	62

Phase:Ground Improvement

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
Drill Rig Truck	1	79	20	50	0.5	79	72
Generator	2	81	50	50	0.5	81	81
Compressor (air)	2	78	40	50	0.5	78	77
Tractor	1	84	40	50	0.5	84	80
Man Lift	1	75	20	50	0.5	75	68
Combined at 50 feet						88	86
Combined at Receptor 580 feet						67	65

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