

APPENDIX E
NOISE CALCULATIONS

Construction Generated Noise

Building Type **Distance (ft)**
Construction Noise at 50 Feet (dBA Leq) 50

Construction Phase	Minimum Required Equipment in Use ¹
Ground Clearing/Demolition	84
Excavation	79
Foundation Construction	78
Building Construction	75
Finishing and Site Cleanup	75

North - Retail along Highland Avenue
Maximum Construction Noise (dBA Leq)

30

Construction Phase	Minimum Required Equipment in Use ¹
Ground Clearing/Demolition	88
Excavation (Site Preparation)	83
Foundation Construction	82
Building Construction	79
Paving	79

West - Wilma Circle Residences
Maximum Construction Noise (dBA Leq)

50

Construction Phase	Minimum Required Equipment in Use ¹
Ground Clearing/Demolition	84
Excavation (Site Preparation)	79
Foundation Construction	78
Building Construction	75
Paving	75

South - Industrial Uses
Maximum Construction Noise (dBA Leq)

15

Construction Phase	Minimum Required Equipment in Use ¹
Ground Clearing/Demolition	94
Excavation (Site Preparation)	89
Foundation Construction	88
Building Construction	85
Paving	85

East - Retail along Highland Avenue
Maximum Construction Noise (dBA Leq)

30

Construction Phase	Minimum Required Equipment in Use ¹
Ground Clearing/Demolition	88
Excavation (Site Preparation)	83
Foundation Construction	82
Building Construction	79
Paving	79

Source: Bolt, Beranek and Newman, "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," prepared for the USEPA, December 31, 1971. Based on analysis for Office Building, Hotel, Hospital, School, and Public Works.

Construction Generated Vibration

North - Retail along Highland Avenue			Closest Distance (feet):	65
	Approximate RMS a 66	Approximate RMS 73.000		
Equipment	inch/second	inch/second		
Vibratory roller	0.21	0.050		
Large bulldozer	0.089	0.021		
Small bulldozer	0.003	0.001		
Jackhammer	0.035	0.008		
Loaded trucks	0.076	0.018		
	Criteria	0.200	1700	
West - Wilma Circle Residences			Closest Distance (feet):	55
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second		
Equipment				
Vibratory roller	0.21	0.064		
Large bulldozer	0.089	0.027		
Small bulldozer	0.003	0.001		
Jackhammer	0.035	0.011		
Loaded trucks	0.076	0.023		
	Criteria	0.200		
South - Industrial Uses			Closest Distance (feet):	20
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second		
Equipment				
Vibratory roller	0.21	0.293		
Large bulldozer	0.089	0.124		
Small bulldozer	0.003	0.004		
Jackhammer	0.035	0.049		
Loaded trucks	0.076	0.106		
	Criteria	0.500		
East - Retail along Highland Avenue			Closest Distance (feet):	40
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second		
Equipment				
Vibratory roller	0.21	0.104		
Large bulldozer	0.089	0.044		
Small bulldozer	0.003	0.001		
Jackhammer	0.035	0.017		
Loaded trucks	0.076	0.038		
	Criteria	0.200		
Based on distance to nearest structure				
¹ Determined based on use of jackhammers or pneumatic hammers that may be used for pavement demolition at a distance of 25 feet				
Notes: RMS velocity calculated from vibration level (VdB) using the reference of one microinch/second.				
Source: Based on methodology from the United States Department of Transportation Federal Transit Administration, <i>Transit Noise and Vibration Impact Assessment</i> (2006).				