

Initial Study/Mitigated Negative Declaration

Kindred Church Expansion Project

Development Project Number: DEV2020-00016

Appendix G – Construction Noise Calculations

Prepared for | Planning Services Division
City of Anaheim
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Construction Generated Noise			
Building Type	Industrial, Parking Garage, Religious, Amusement & Retail		Distance (ft)
Construction Noise at 50 Feet (dBA Leq)			50
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	84	83	
Excavation	89	71	
Foundation Construction	77	77	
Building Construction	84	72	
Finishing and Site Cleanup	89	74	
Recreational Vehicle Park North of Project Site			
Maximum Construction Noise (dBA Leq)			380
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	66	65	
Excavation (Site Preparation)	71	53	
Foundation Construction	59	59	
Building Construction	66	54	
Paving	71	56	
Average Construction Noise (dBA Leq)			1,040
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	58	57	
Excavation (Site Preparation)	63	45	
Foundation Construction	51	51	
Building Construction	58	46	
Paving	63	48	
Residential Uses South of Project Site			
Maximum Construction Noise (dBA Leq)			240
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	70	69	
Excavation (Site Preparation)	75	57	
Foundation Construction	63	63	
Building Construction	70	58	
Paving	75	60	
Average Construction Noise (dBA Leq)			680
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	61	60	
Excavation (Site Preparation)	66	48	
Foundation Construction	54	54	
Building Construction	61	49	
Paving	66	51	
Residential Uses West of Project Site			
Maximum Construction Noise (dBA Leq)			700
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	61	60	
Excavation (Site Preparation)	66	48	
Foundation Construction	54	54	
Building Construction	61	49	
Paving	66	51	
Average Construction Noise (dBA Leq)			1,260
Construction Phase	All Applicable Equipment in Use¹	Minimum Required Equipment in Use¹	
Ground Clearing/Demolition	56	55	
Excavation (Site Preparation)	61	43	
Foundation Construction	49	49	
Building Construction	56	44	
Paving	61	46	
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

Recreational Vehicle Park North of Project Site		Closest Distance (feet):		380
	Approximate RMS a 66	Approximate RMS 73.000		
Equipment	inch/second	inch/second		
Vibratory roller	0.21	0.004		
Large bulldozer	0.089	0.002		
Small bulldozer	0.003	0.000		
Jackhammer	0.035	0.001		
Loaded trucks	0.076	0.001		
	Criteria	0.250	1700	
Residential Uses South of Project Site		Closest Distance (feet):		240
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second		
Equipment				
Vibratory roller	0.21	0.007		
Large bulldozer	0.089	0.003		
Small bulldozer	0.003	0.000		
Jackhammer	0.035	0.001		
Loaded trucks	0.076	0.003		
	Criteria	0.250		
Residential Uses West of Project Site		Closest Distance (feet):		700
	Approximate RMS a Velocity at 25 ft, inch/second	Approximate RMS Velocity Level, inch/second		
Equipment				
Vibratory roller	0.21	0.001		
Large bulldozer	0.089	0.001		
Small bulldozer	0.003	0.000		
Jackhammer	0.035	0.000		
Loaded trucks	0.076	0.001		
	Criteria	0.250		

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, *Transit Noise and Vibration Impact Assessment* (2006).