

Number of pile strikes per pile and per day for steel piles of different diameters.

Location	Pile Diameter (inches)	Substrate Type	Hammer Energy Rating (ft-lbs) ¹	Date	Number of Piles	Number of Strikes/Pile	Number of Strikes/Day	Piles Vibed First?
Cape Disappointment Boat Launch Facility	12	Silt and mud with glacial till layer	52,000	12/13/05	1	191 ²	191 ²	Yes
				12/14/05		147 - 271 ²	816 ²	
SR 240 – Yakima River	16	Medium to very dense wel to poorly graded gravel with sand, cobbles and boulders	125,000	8/5/04	2	183 - 419	602	No
				8/9/04	3	404 - 460	1,295	
Bainbridge Island Ferry Terminal	24	Sand and Fist-sized rocks to 1-foot rocks	55,000	10/18/05	2	534 - 552	1,086	Yes
				10/20/05	3	432 - 639	1,578	
Eagle Harbor Maintenance Facility	24	unknown	164,000	10/31/05	7	11 - 30	134	Yes
Friday Harbor Ferry Terminal	24	Silty sand with hard clay layer	60,000	2/10/05	1	326	326	
			50,000 ³	2/11/05	1	477	477	
			88,000 ⁴	2/12/05	1	203	203	
			60,000	2/23/05	1	130	130	
			60,000	2/24/05	1	271	649	
88,000 ⁴	1	378						
	30	Silty sand with hard clay layer	60,000	3/3/05	1	78	78	Yes
				3/4/05	1	114	114	
Anacortes Ferry Terminal	36	Sand and Silt Mix	165,000	1/17/07	2	323 – 442	765	Yes
				1/19/07	4	341 - 675	2,494	
Mukilteo Test Pile Project	36	Sand and silt	164,000	11/16/06	4	73 - 227	682	Yes

¹ – Actual energy used during operation of hammer is approximately 50% to 70% of this maximum energy for most piles. All hammers are diesel unless otherwise noted.

² – These piles had steel wings that linked the piles together and pile caps were used between the pile and the hammer which possibly increased the number of total strikes per pile.

³ – Air driven impact hammer.

⁴ – Hydraulic driven impact hammer.

Table 2. Number of pile strikes per pile and per day for concrete piles of different diameters.

Location	Pile Diameter (inches)	Substrate Type	Hammer Energy Rating (ft-lbs)¹	Date	Number of Piles	Number of Strikes/Pile	Number of Strikes/Day	Piles Vibrated First?
Mukilteo Test Pile Project	24	Sand and silt	164,000	11/20/06	1	184	184	Yes
	36	Sand and silt	164,000	12/5/06	2	204 - 255	459	