Pile Driving Record

Date: _____ Abut./Pier No.: _____

Project: _____ Pile No.: _____

Project No.: _____ Pile Type/Size: _____

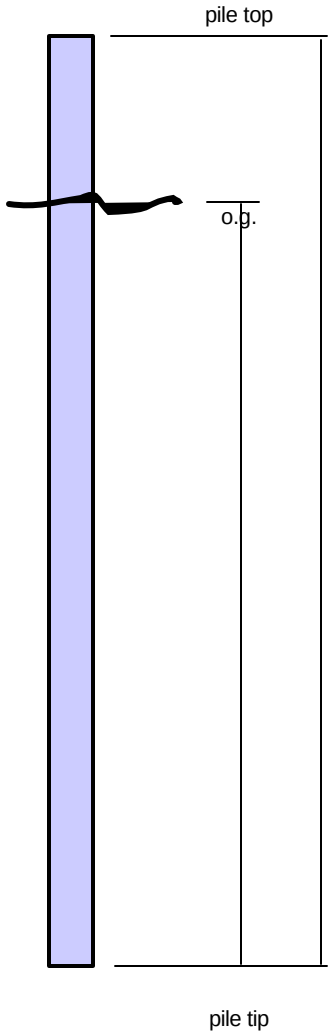
Bridge Name/No.: _____ Hammer: _____

Pile Driving Contr.: _____ Hammer Setting: _____

Inspector: _____ Start/Stop Times: _____

Depth (feet)	BPF	Stroke (feet)	Depth (feet)	BPF	Stroke (feet)	Depth (feet)	BPF	Stroke (feet)
1			31			61		
2			32			62		
3			33			63		
4			34			64		
5			35			65		
6			36			66		
7			37			67		
8			38			68		
9			39			69		
10			40			70		
11			41			71		
12			42			72		
13			43			73		
14			44			74		
15			45			75		
16			46			76		
17			47			77		
18			48			78		
19			49			79		
20			50			80		
21			51			81		
22			52			82		
23			53			83		
24			54			84		
25			55			85		
26			56			86		
27			57			87		
28			58			88		
29			59			89		
30			60			90		

COMMENTS:



Total Length in Leads: _____

Cutoff Elevation: _____

Ground Elevation: _____

Acual Tip Elevation: _____

Vertical? (y/n) _____

Batter? (y/n) _____

Prebore? (y/n) _____

Ultimate Bearing Capacity Req'd: _____ Kips

Robert Miner Dynamic Testing, Inc.
Consulting, Dynamic Measurements and Analyses for Deep Foundations

PILE DRIVING RECORD KEEPING

An accurate Pile Driving Record must be maintained and provided to engineers who evaluate pile adequacy and acceptance. Penetration resistance (blows per foot of driving), although important, do not tell the whole story. Keep in mind that an engineer who did not observe the actual pile driving will be responsible for accepting the pile; your Record may be his only source of field information. If the Record provides only the penetration resistance the engineer's task will be more difficult and pile acceptance may require more judgment. If the Record gives adequate detail the engineers decisions may be more timely and reasonable, and your work will be easier.

The following suggestions may help you keep a proper Pile Driving Record for each pile.

- Establish a unique identifier (number, grid, etc.) for each pile. In some cases identification is aided if you include a *rough* sketch of the pile within it's pile cap.
- Record information on the pile size, length, inclination (batter) and hammer model.
- Fill in the date and time for each driving activity; initial drive, redrive, splices, etc.
- Record starting and ending reference elevations or penetrations. This could include a tide level, ground level or penetration below the "mudline", depending on circumstances. Your notes and associated references must be sufficient to allow computation of the pile tip elevation and butt elevation, and *length in the soil*. For marine work a Tide Board should be visible during pile driving and your Record should include start&stop tide board readings.
- For concrete piles note the pile cushion area, thickness and type. Record pile cushion replacements or additions if they occur. Generally, all old pile cushion material should be removed and replaced with new before starting a new pile.
- Record most start & stop times for initial driving and for any restrikes.
- Keep hammer operating rates in terms of blows per minute (BPM) at least periodically during driving. For open end diesel hammers this information is necessary for assessing hammer performance and ram stroke, and is thus necessary for evaluation of pile stresses and pile capacities. **Try to use a SAXIMETER® to record the ram stroke heights for open end diesel hammers.**
- Note any special observations about pile or hammer behavior, including the foot marks/depths where such occurred. Examples include hammer stalling, pile bucking, spalling of a concrete pile top, smoking pile cushion, yielding steel top, tilting or twisting of exposed pile, etc. If the pile "springs" laterally after the hammer is removed record an estimated distance and direction of such "springing"
- Generally, one should calculate the final pile tip and butt elevations for marine work and upland work. However, for upland work the final penetration may be adequate. If you use seawater level as a reference be sure to use an observed or tidally corrected water elevation. For inclined piles apply a geometric elevation correction.
- ***As you move around and position yourself to observe pile driving remember that safety is the top priority. Stay clear of the hammer, especially while it is operating. Stay clear of the piles, especially while they are being lofted and have not yet been positioned under the hammer and in the leads. Piles and pieces of hammer and rigging do occasionally fall. Protect your hearing too.***

Generally, if you are puzzled by an observation, or uncertain about its relevance, then record it. Use the back of the Pile Driving Record if necessary. Consider copying your blank Pile Driving Record forms onto "waterproof" copy paper from *Rite-in-the-Rain*®.

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