

PILE RECORD FOR FRICTION PILES WITH DYNAMIC TESTING

Pile No.	Project Hammer Number	Pile Cut-off Elevation FEET	Pile Length In Place FEET	Estimated Pile Tip Elevation FEET	Highest Allowable Pile Tip Elevation FEET	Pile Tip Elevation As Driven FEET	Design Factored Axial Load		Required Nominal Axial Resistance		Nominal Test Axial Resistance (Based on Dynamic Testing)		Hammer Fuel Setting at EOD	Actual at EOD (Last 10 Blows)				Actual at BOR (Max 5 Blows w/warm Hammer)			
							KIPS	TONS	KIPS	TONS	KIPS	TONS		Hammer Stroke (H) FEET	Set INCH	Actual No. of Blows	Blow Count (N) BLOWS PER INCH	Hammer Stroke (H) FEET	Set INCH	Actual No. of Blows	Blow Count (N) BLOWS PER INCH
INTEGRAL END BENT #1																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
PIER #1																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
PIER #2																					
17																					
18																					
19																					
20																					
21																					
22																					
23																					
24																					
INTEGRAL END BENT #2																					
25																					
26																					
27																					
28																					
29																					
30																					
31																					
32																					

Project Hammer Number	Hammer Manufacturer and Model	Weight of Ram W Lbs.	Maximum Rated Energy Ft-Lbs

Definitions of Terms

PILE CUT-OFF ELEVATION: Elevation of the top of pile in the finished structure.

PILE LENGTH IN PLACE: Actual pile length below the Pile Cut-Off Elevation in the finished structure.

PILE TIP ELEVATION AS DRIVEN: Actual Pile Tip elevation in the finished structure.

DESIGN FACTORED AXIAL LOAD: The design factored strength loads as estimated from structural design calculations.

REQUIRED NOMINAL AXIAL RESISTANCE: The total geotechnical axial resistance required by the pile to satisfy applicable design requirements. This is arrived at by dividing the Design Factored Axial Load by the resistance factor, $\phi = 0.65$, plus any other applicable considerations such as scour, embankment layers, etc.

END OF DRIVING (EOD): When the pile was driven to tip elevation.

BEGINNING OF RESTRIKE (BOR): When the pile is driven a small distance below the tip elevation at EOD after a specified waiting period.

ACTUAL AT EOD: The actual blows per inch on the last 10 blows of driving.

ACTUAL AT BOR: The actual blows per inch at the beginning of restrike (maximum 5 blows with a warm hammer).

HAMMER STROKE (H): The length of the free-fall of the ram for a gravity, diesel or single-acting steam or compressed air hammer.

SET: Amount of downward vertical displacement in the pile over a specified number of blows. At EOD it shall be over 10 blows. At BOR it shall be no more than 5 blows.

BLOW COUNT (N): Number of hammer blows per inch. At EOD it shall be taken as 10 blows divided by the set in inches. At BOR it shall be taken as the number of restrike blows divided by the set in inches.

Driving Criteria

Satisfy two criteria when driving friction piles:

1. Drive piles to the Highest Allowable Pile Tip Elevation or estimated Point of Pile Elevation.
2. Drive piles until the Required Nominal Pile Resistance at End of Driving (EOD) or Beginning of Restrike (BOR) driving criteria is satisfied.

Hammer fuel setting shall be adjusted so that the blow count at the end of driving and beginning of restrike ranges from 3 to 10 blows per inch.

Dynamic pile testing with signal matching shall be performed in accordance with the Contract Documents or as directed by the Engineer. The production pile testing shall be performed during initial driving and/or restrike if required by the Engineer to monitor hammer and drive system performance (additional tests required following any hammer or driving system modifications or if another hammer is to be used on the site).

Within one day of production pile testing, the Dynamic Testing Consultant shall prepare a daily field report summarizing the dynamic testing results. As a minimum, the daily reports shall include the calculated driving stresses, transferred energy, and nominal axial resistance at the time of testing.

Once per month, or upon completion of various project or testing phases, the Dynamic Testing Consultant shall prepare a report summarizing the dynamic testing results. This report shall be submitted no later than 10 (ten) working days after the completion of the reported part of the testing.

The department will evaluate the test results and will supply the Contractor with required driving criteria for the remainder of the production piles.

The Project Engineer shall determine the blow count at BOR using a maximum of 5 blows with a warm hammer.

If the driving criteria at the EOD or BOR cannot be met, contact the Central Office Division of Construction.

Field Data

For each pile, the Project Engineer shall record all applicable data in the Pile Record for Friction Piles Sheet.

Submit this record to:

Kentucky Transportation Cabinet
Division of Structural Design
3rd. Floor East
200 Mero Street
Frankfort, KY 40622

This pile record does not replace other pile records the Project Engineer is required to keep and submit.

Include notes on the hammer size from the Geotech Report.

Use 14' Reinforced Concrete Piles in accordance with BPC-002, c.e.
Use 14' Precast Prestressed Concrete Piles in accordance with BPC-011, c.e.
Use HP 12x53 in accordance with BPS-003, c.e.
Use HP 14x73 in accordance with BPS-009, c.e.
Use HP 14x89 in accordance with BPS-011, c.e.
Use XX' Pipe Piles with x/x' wall thickness.

REVISION		DATE
DATE:	CHECKED BY:	
DESIGNED BY:		
DETAILED BY:		
Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS		
COUNTY		
ROUTE	CROSSING	
ITEM NUMBER		PREPARED BY
		SHEET NO.
		DRAWING NO.