



8+143.037

C/L ABUT

Pile Driving Record

1/10/1998

Bolder Creek Bridge

Abutment #2

Pile Type: **Steel H-Pile,**

Hammer Name/Model: Delmag D8-22

Hammer Energy: 23.87 kN-m

Req'D Bearing: 440 kN

Pile No.	Length in Leads (m)	Cut Off Length (m)	Cut Off Elev. (m)	Tip Elev. (m)
1	7.62	0.229	238.658	225.552
	7.62	1.905	238.658	
2	15.24	3.100	238.658	226.518
3	15.24	3.200	238.658	226.619
4	15.24	2.819	238.658	226.238
5	15.24	2.234	238.658	225.653
6	7.62	0.305	238.658	225.857
	7.62	1.600	238.658	
7	15.24	2.643	238.658	226.564
8	15.24	2.691	238.658	226.613
9	15.24	2.286	238.658	226.223
10	15.24	1.829	238.658	225.784
	152.4	24.841		

Pile No.	Ground Elev (m)	Blows per 25mm	55101 (m)	55106 (ea)
1	238.354	6	13.11	1
	238.354			
2	238.354	7	12.14	
3	238.354	7	12.04	
4	238.354	6	12.42	
5	238.354	6	13.01	
6	238.354	6	12.8	1
	238.354			
7	238.354	7	12.09	
8	238.354	7	12.05	
9	238.354	8	12.44	
10	238.354	6	12.87	
			125.0	2

MISC. CONSTRUCTION NOTES

DATE: _____ LINE: _____ PARTY: _____
 PROJECT: _____ ITEM - 55101
 _____ Steel H-Piles
 _____ In Place
 STAMP

CAPACITY COMPUTATIONS

FP96 TABLE 551-1 PILE HAMMER MINIMUM ENERGY
 CALCULATE ULTIMATE PILE CAPACITY (RU):
 RU = 440 KN REQUIRED BEARING x
 FACTOR OF SAFETY (3) = 1320 KN
 FROM TABLE 551-1: 1320 KN => 21 kJ REQUIRED
 HAMMER ENERGY (kJ = kN-m)
 CHECK PROPOSED HAMMER ENERGY:
 DELMAG D8-22 MAX. ENERGY RATING = 23.87 kN-m

DYNAMIC FORMULA:
 $RU = 7\sqrt{E} \log(10N) - 550$
 RU= ULTIMATE PILE CAPACITY (KN) = 1320 KN
 E= MANUFACTURER'S RATED HAMMER ENERGY
 IN JOULES AT THE FIELD OBSERVED RAM
 STROKE = 23870 JOULES (AT MAX. ENERGY)
 N= NUMBERS OF HAMMER BLOWS PER 25mm AT
 FINAL PENETRATION

SOLVING FOR N: _____ WHERE $N = 10^x$

 Therefore $X = \left(\frac{RU + 550}{7\sqrt{E}} \right) - 1$

SUBSTITUTE VALUES AND SOLVE FOR X:	
	$X = \left(\frac{1320 + 550}{7\sqrt{23870}} \right) - 1$
	X = 0.73
SOLVING FOR N:	
	N = 10 ^x
	N = 10 ^{0.73}
	N = 5.4 BLOWS PER 25 mm AT MAX. ENERGY *

NOTES: * 1) Hammers seldom operate at the maximum manufacturer's rated energy. Hammer energy values should be based on field observed ram stroke. Hammer manufacturers can provide tables of ram stroke versus hammer energy. Use dynamic formula (FP96 Subsection 551.06(b) to determine ultimate capacity (blow per mm) unless the wave equation is required according to FP96 Subsection 551.03(b) if wave equation is used. WFLHD Geotech Branch will furnish the amount of blows required to obtain pile capacity.

2)

COMPUTED BY: _____ CHECKED BY: JKD
 DATE: _____