

Concreting in Bore piles

Dipak Shrestha

Concrete Ingredients

- Cement
- Aggregate
- Sand
- Water
- Admixture (Plasticizer)

Concrete Properties

- Slump 150 to 200 mm
- Temperature 32 degree C (!!)
- W/C Ratio
- M25
- Self Compacting
- Free flowing
- Scouring the bentonite cakes
- No inclusions of foreign material

- Concreting Procedure
 - Underwater (Under Drilling fluid/Bentonite)
 - Through Tremie pipes
 - Trimie pipe should always be inside the concrete once started.
- [14VID_20150328_111605.3gp](#)

LAMA CONSTRUCTION COMPANY (P) LTD.

PILE RECORD SHEET: Site: Jaki Date: 16/5/2000
Contract Ref: Jaki Package (C): Bridge

General Pile Details:
Location: R/W Abutment N/S Wingwall - N/S/C Pier
Reference No.: 61-70P-2-B/E
Diameter: 600 mm
Type: tonnes
Working Load: tonnes

Boring:
Commencement of boring: Date 15/5/2000 Time am / pm
Completion of boring: Date 16/5/2000 Time am / pm
Pile platform level: 97.42 Site Datum Level
Pile toe level: 69.12 Site Datum Level
Length of pile: 28.30 Metres

Concrete:
Mix design: 1521
Materials: 400 Cement 1521 Aggregate 779 Sand
Weight kg/m³: 2400
Admixture: -Compass-Sica-Emerc Plast 48V-Zentrant TSDV-600
ml per 100 kg of Cement

Slump: 150 mm
Commencement of concreting: Date 16/5/2000 Time am / pm
Completion of concreting: Date 16/5/2000 Time am / pm
Total time taken: Hours
Casting Level: 94.49 Site Datum Level
Cut-off level: 93.89 Site Datum Level
Number of mixes: 8
Cube Ref.: B 11 12 33 354

Steel Reinforcement:
Cage Details: 9 Number of Bars 25 Bar Diameter 12.0 Bar Length
Top Cage: x
Bottom Cage: x

General:
Length of temporary casing used: 3.0 Metres
Length of permanent casing used: x Metres
Depth at which ground water encountered: x Site Datum Level
Standing water level: x Site Datum Level
River water level: 96.00 Site Datum Level
River bed level: 91.60 Site Datum Level

Record of Interruptions in sequence of works:
Obstructions: Depth Time lost Hrs
Breakdowns: Details Time lost Hrs
Other delays: Details Time lost Hrs

Signature of Contractors Representative: ✓ Signature of Engineers Representative: ✓

CONCRETE MIX DETAILS:
Site: Jaki Date: 16/5/2000
Structure: Pile Concrete
Mix Proportion = 1:1.945:2.555 Mix Design = M20
w/c ratio = 0.45 Admixture = 0.60% = .300 ml
Batch size = 1 bag

Ingredient	Weight (kg)	Unit wt. kg/m ³	Volume m ³	Bulk	Corrected vol. (m ³)	Batch Box (m)				mc (%)	ssd (%)
						Length	Width	Ht.	No.		
Cement	50	1440	0.0347	0.0347	0.0347	0.32	0.32	0.32	2	0.59	0.59
Sand	97.25	1675	0.0581	0.0581	0.0581	0.32	0.32	0.32	2	0.59	0.59
20mm Agg (40%)	51.00	1448	0.0352	0.0352	0.0352	0.32	0.32	0.32	2	0.59	0.59
14mm Agg (60%)	76.00	1403	0.0542	0.0542	0.0542	0.32	0.32	0.32	2	0.59	0.59
Water	22.50				2.130	2.65	1.278	0.301	0.301	0.448	0.448

REMARKS IF ANY:

Calculated by: Samsud Liman
(100)

BRIDGE UPGRADING AND MAINTENANCE PROJECT

CONCRETE POUR REPORT (PILE) **BUMP**

Bridge: Jude

Date of pour: 16/13/2020

File No: 61 E02

Class of Concrete: PC-19/40 (Concrete) 40M x 40M x 40M

Time started: 08:20

Volume of pour: 17 bags = 7.13 m³

Operator: Pedant

Slump time: 150-240

Time completed: 13:30

Weather: clear

Finished level: 97.60

Casting level: 97.47

Tier level: 96.83

Casting level: 96.83

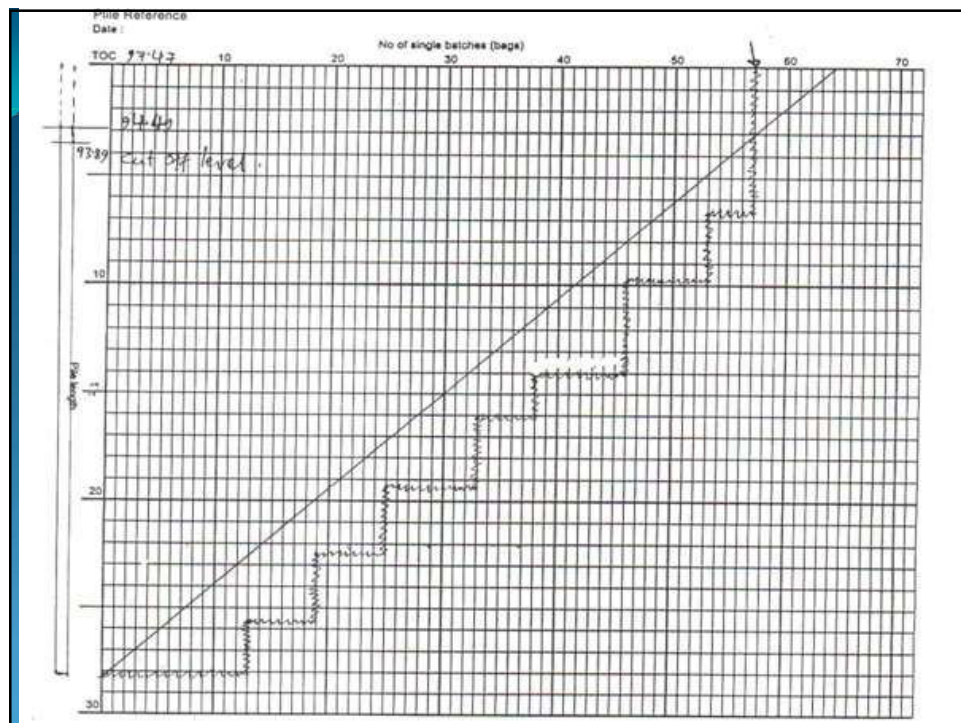
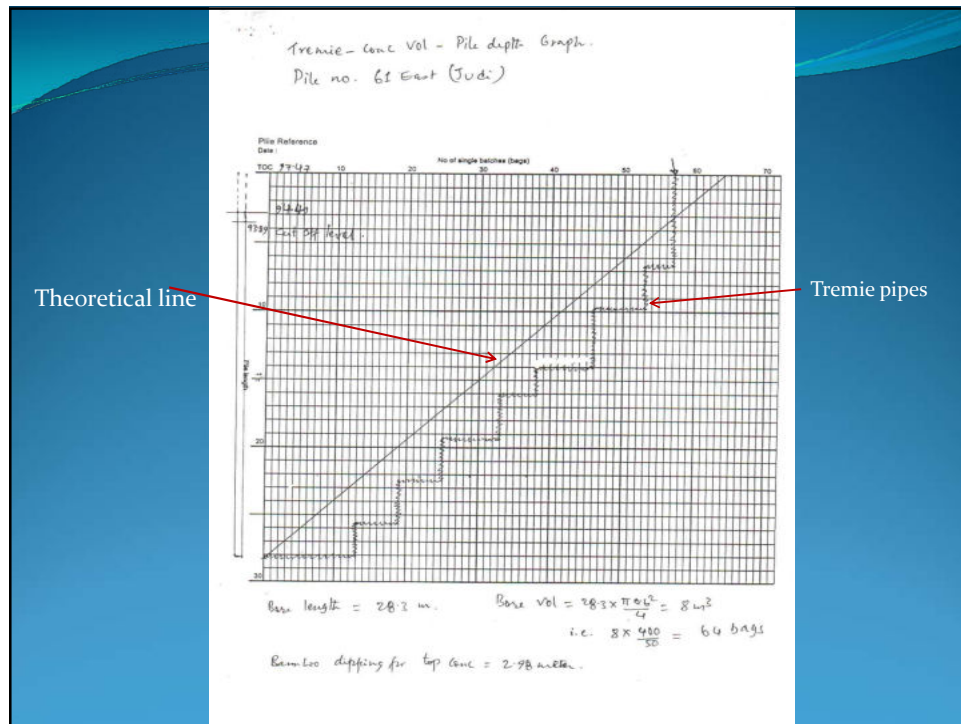
Base length: 2.430

Specific gravity: 1.22

Cut up: 9.343

Stock length (MOS) in (MOS): 3.63

Batch No.	Time placed	Slump (mm)			Cube No.	Wear	Remarks/Other action taken
		4 min	10 min	30 min			
1	10:01	195			21/30	(C)	
2	10:24					(C)	
3	10:27					(C)	
4	10:30					(C)	
5	10:33					(C)	
6	10:35					(C)	
7	10:37					(C)	
8	10:39					(C)	
9	10:41					(C)	
10	10:43					(C)	
11	10:45	180			10/11	(C)	(B) nos Cube Casting.
12	10:47					(C)	
13	10:49					(C)	Cut Above of 1.60 x 2.00
14	10:51					(C)	
15	10:53					(C)	
16	10:55					(C)	
17	10:57					(C)	
18	10:59					(C)	
19	11:01					(C)	
20	11:03					(C)	Cut Above of 1.60 x 2.00
21	11:05	190				(C)	
22	11:07					(C)	
23	11:09					(C)	
24	11:11					(C)	
25	11:13					(C)	
26	11:15					(C)	Cut Above of 1.60 x 2.00
27	11:17					(C)	
28	11:19					(C)	
29	11:21					(C)	
30	11:23					(C)	
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47	11:57					(C)	
48	11:59					(C)	
49	12:01					(C)	
50	12:03					(C)	
51	12:05					(C)	
52	12:07					(C)	
53	12:09					(C)	
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Workout 1

- A pile constructed at Judi Bridge on Biratnagar Rangali Road has following details.
- GL Platform level = 0 m
- Casing length = 3 m below ground level
- Cutoff level = 4 m below ground level
- Toe of pile is 28.3 m below ground level.
 - Show these points in a graph sketch.
 - Up to what level, the concrete needs to be done?

Workout 1 contd

- How much concrete is required to fill the bore hole theoretically?
- How much tremie is required to be installed
- Draw a theoretical line of depth of concrete surface–volume of concrete poured (D-V). Take the weight of cement 400 kg / m³ of the approved mix.
- The depth measured after pouring concrete are as follows:
 - After 10 bags = 25 m below casing level
 - After 20 bags = 21 m below casing level
 - After 30 bags = 16 m below casing level.
 - Show these points in the graph

Work out 2

- Platform level RL = 97.5 m
- Cut off level RL = 94.0 m
- Toe level RL = 69.2 m.
- Upto what level concrete shall be done?
- Good concrete level RL = ?

Work Out 2

- Mix design = 400 kg/m³
- Volume of concrete per bag of cement batch = 0.125 m³
- Pile depth = 28.3 m below Platform level
- Pile depth = 24.5 m below Cutoff level

Volume of concrete	Depth of concrete surface
0 bag	Depth = 28.3 m
10 bags	25 m
20 bags	20 m
30 bags	15 m
40 bags	10 m
50 bags	