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Greater Nicobar link Offshore construction (pile foundation) for great project using Various codes and processes.

Case study

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ABSTRACT

This research is based mainly on battered piles on using effectively on offshore with the possibility of having to deal it with the economy in the specific region of Nicobar region. The ideal use of battered pile is for pulling up the negative friction. it is fitted in at an angle with the vertical pile to provide additional friction it is also known as raker pile. Since the project does not have any Economical advantage but it is also important for national importance since Nicobar Island plate is on Burma plate it is micro tectonic plate. Since the Burma plate fall under zone 5 So seismic load is to be taken into consideration

Keywords: BATTRED PILE, RAKER PILE, SEISMIC ZONE, TECTONIC PLATE.

INTRODUCTION

The use of raker pile is used in pile foundation in where the soil stability is very low and requires a high friction, in case of Burj Khalifa they used simple anchor friction piles with the concept of friction they built a massive giant structure just use the law of physics. In the deep down inside the ocean the use pie foundation in full-fledged batter pile, raker pile, anchor piles and etc. Battered pile it used to put at an angle of to the vertical generally angle is settled ant angle of 20 to 25 degree to vertical to the hard strata. If the hard strata are too deep and ocean surface then we must use caisson system to the foundation are to be used. With accordance to the piles anchor pile are used to vertical resist the uplift force or thrust. all the piles are bound

to each other by single pile cap over and the cut of level are cut of chip of the pile, if the foundation bed rock is found then there might be change in plan by using the caisson system. The main concern of the area is seismic zone earthquake zone with a seismic zone of 4 so it is not recommended to build low height bridge. The structure is to be made up to that limit. Make a new building but he was high concreating and high-grade steel or new design construction technique. There are two types of construction of building first is horizontally and second vertically.

The design should be unique and the atmosphere there is very atm. Earthquake create horizontal pressure on building, causing there to collapse. The horizontal load vibrates walls floors columns, beams and other connectors. The ways to avoid first is building is construction, on top of flexible pads that isolate the foundation from the ground. Earthquake pressure gave a building but the flexible pads are safe in building.

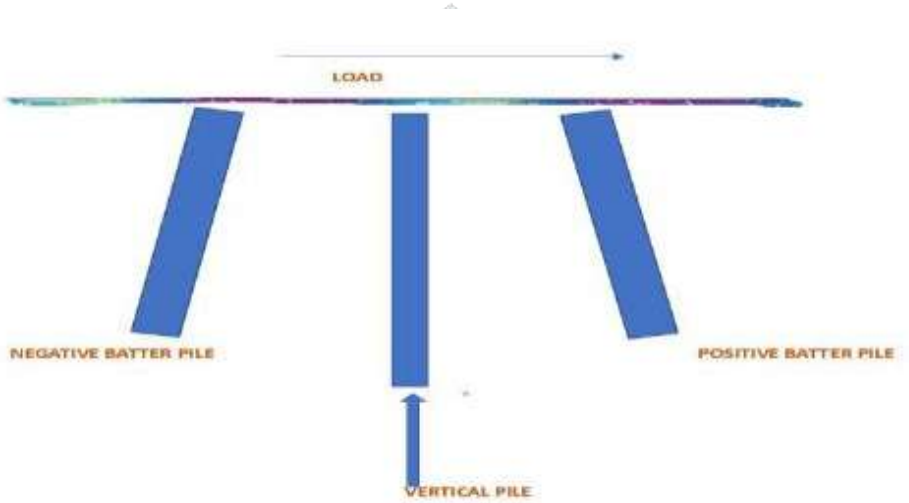


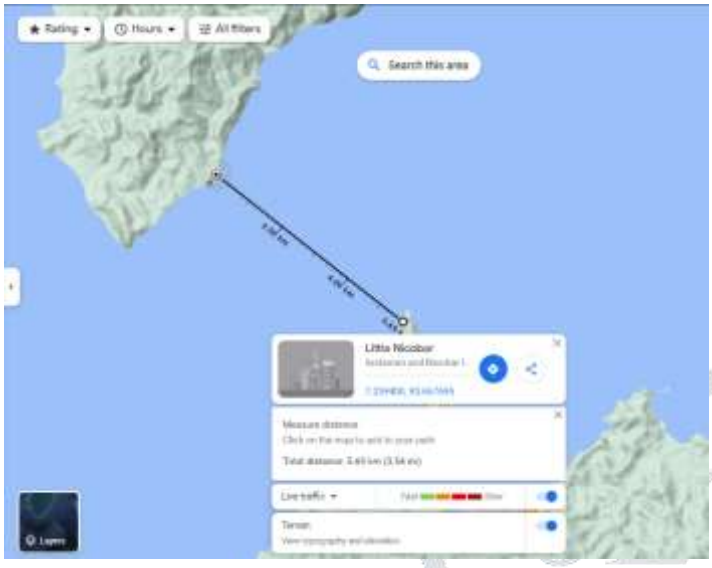
Fig no -1 (Batter piles with sign convention)

SITE DETAILS

The site here is considered here is mainly and majority portion is in ocean with low dept because of island chain forming in between them. It is actually an archipelago so depth in between is low so generally cofferdam is used easily If not so we can use the caisson system, since in an proposed project so the surveying part is not done yet and soil report are in pending status so we have to first do the reconnaissance the location of the site detail are shown in the given below.

From **93'40"04"E** to **7'13"49"N** intermediate island and then **7'12"29"N** to **92'48"52"E**

Fig no -2(arial view)



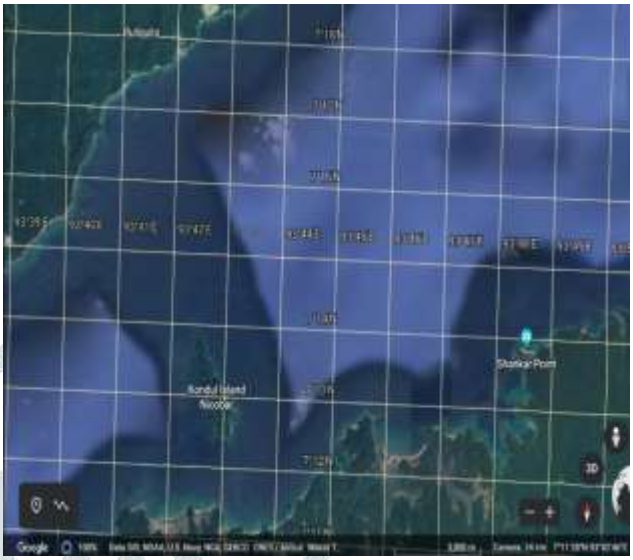
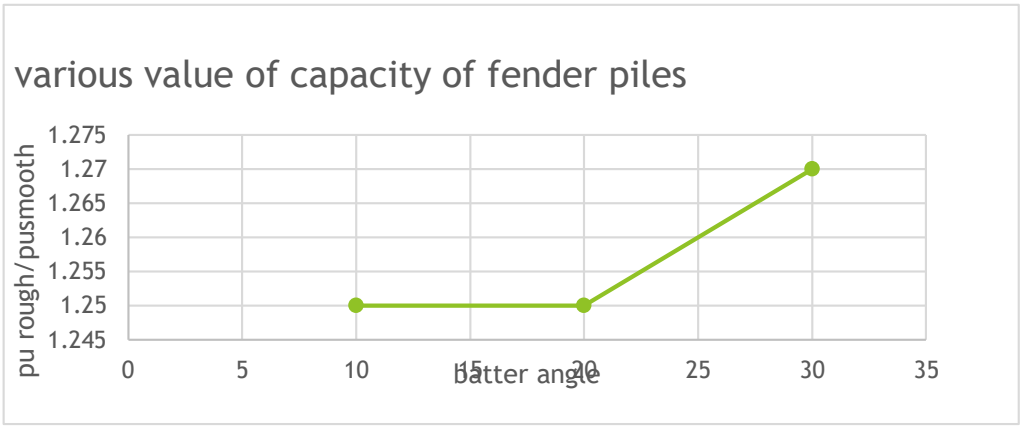


fig no- 2 (location of site)

The distance is covered in 5.9 + 2.1 stretch of the bridge the portion of land is also there the total road length only connecting the bridge length of the is around 1 km the high way distance is neglected.

OBSERVATION

Various test was conducted in the soil of the offshore structural element. And the basic. Pile driven in clay.



Graph no -1 (showing variability with angles)

$$Q_U = Q_p + Qs$$

Qp to determine

- $Q_p = q_p A_p$
- $q_v = c\mathbb{N}_C + qNq$
- $Q_P = CN_C A_P$

Qs to determine

- $Q_s = C_A A_s$
- $c_a = \bar{a}c$
- $Q_U = CN_C A_P + A_s^{\bar{C}}$

There is various test were done to determine

Approximate value of value of bearing capacity test were conducted. Values of table were given

Table no -1

TYPE OF ROCK/SOIL	*sbc SAFE BEARING CAPACITY(KN/M)*
ROCK	3105
SOFT ROCK	446
COARSE SAND	441
MEDIUM SAND	248
SOFT CLAY	107
VERY SOFT CLAY	53
Very hard clay	67

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