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Kota Kinabalu Port Expansion Project

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Synopsis :
The Kota Kinabalu port expansion project in Kota Kinabalu, Sabah, Malaysia was started in May 1985 and successfully completed in November 1988 by Kawasaki Steel Corporation. The major feature of this project is that KPP(Kawasaki plastic -coated pipe) piles, a total number of 1429, were used. This method was adopted as the most effective anti -corrosion protection system for the heavy corrosive marine environment which existed in this tropical area. Drivi ng such a large number of piles offshore in close proximity to each other was an unusual undertaking. In addition, the execution plan was carefully considered in order not to damage the high corrosion respile driving was investigated and an of the adjacent ground. Then the results of this evaluation were compared with actual data.

コタ・キナバル港拡張工事*

Kota Kinabalu Port Expansion Project


要旨

当社エンジニアリング事業部は，マレーシア・サバ州コタ・キナ

2 工事概要

本工事は **Fig. 2** の平面図に示すように，新設桟橋 (New South Jetty) の建設，既存桟橋の拡張 (North Extension) および電気，水

[redacted]

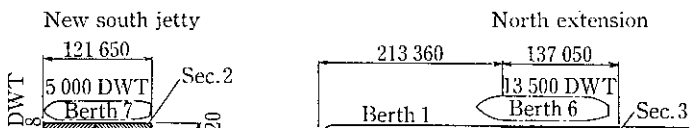
道施設の建設に大別される．桟橋の一般断面図を **Fig. 3** に示す．桟 [redacted] か．

[redacted]

橋のデッキスラブにプレキャストコンクリートユニット (PC ユニット) が採用されている。主要工事数量を **Table 1** に示す。

工事は，既設港湾施設内において実施されることから，工事期間中においても港湾荷役機能を低下させることのないよう工期内工期 (**Table 2**) が定められており，またこれに合わせて工事用占有水域が制限され，時間的にも空間的にもきわめて施工管理が要求され

契約工期は 35 箇月であったが，実際はこれを 5 箇月短縮した 30



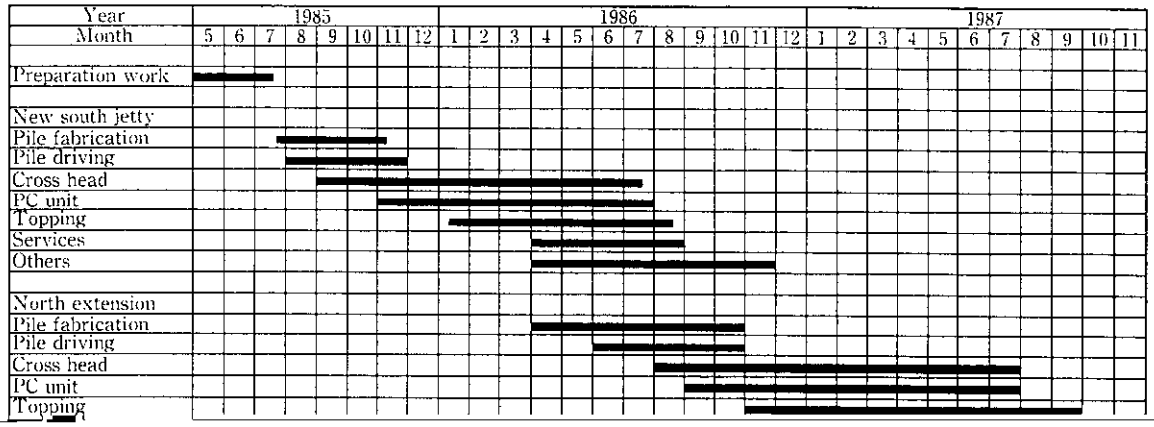


Fig. 4 Actual execution of construction

$$R_u=\frac{e_f\cdot 2WH}{S+C/2} \quad \cdots\cdots(1)$$

$$R_u=\frac{WH}{S+C/2}\times\frac{1+e^2(P/W)}{1+(P/W)} \quad \cdots\cdots(2)$$

ここに，R_u: 杭の極限支持力（t）

W: ラム重量

H: ハンマの落高

S: 一打当たりの貫入量

C [illegible]

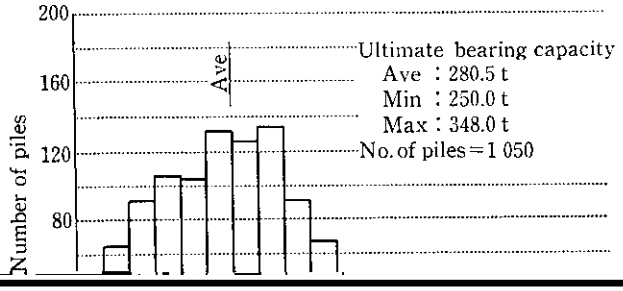


Table 4 Results of pile load tests

Item	Tension test		Compression test	
	New south jetty	North extension	New south jetty	North extension

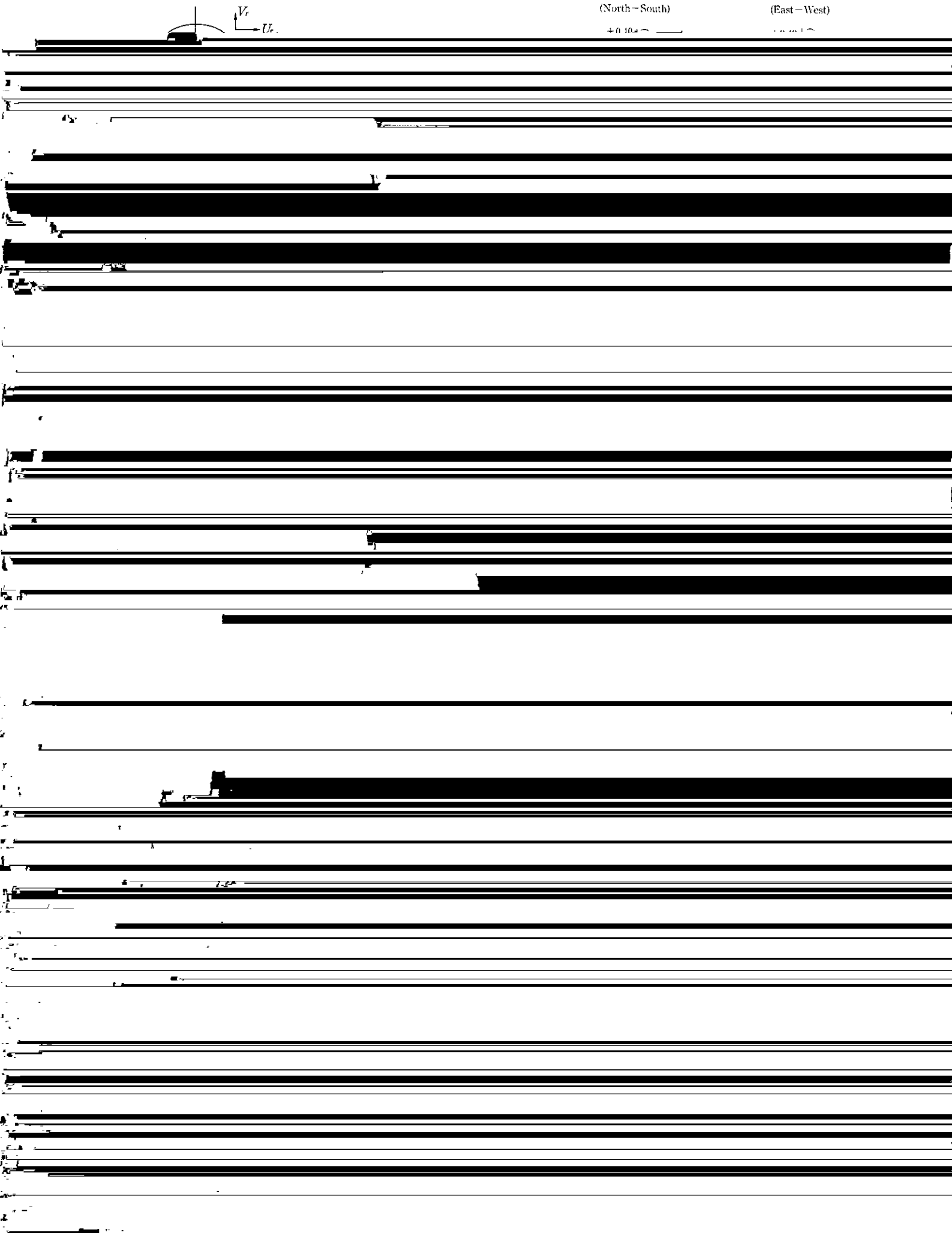

V_r
U_r
(North－South)
(East－West)

Table 5 Comparison of supporting systems

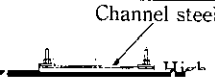
Type of support	Sketch	Advantages	Shortcomings
Hanger type (1)	Channel steel 	· Less temporary embedded steel than hanger type (2).	· Application to raker pile is difficult.

Table 6 Concrete design mix

Condenser unit