ABSTRACT

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Concentration : Contruction Management
Tittle : M-PERT and Line of Balance (LoB) integration on
  Earthwork in Industrial Estates

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The need for industrial land in Indonesia is an average of 3,000 ha / year. The delay in earthwork work in the world is 6.1% while the weight of earthwork work in a construction project reaches 13.48%. To overcome the delay in the construction project, the researcher used the Line of Balance (LoB) method and the M-PERT method. While the processing of statistical data is carried out using the Statistical package for the Social Science (SPSS) Statistics 25 method

The statistical analysis from the LoB and M-PERT integration generated influencing factors of earthwork on industrial area construction projects which includes 1. The excavator selection, 2. Likeness in the network, 3. Activities combination, 4. Understanding of PERT activity. ,5. Manual calculations, 6. Recalculation of PERT, 7. Improvement of crashing time, 8. Activity network diagram, 9. Cut and fill identification, 10. The effect of activity durations, and 11. The continuity of repetitive activity.

The result of the research showed that the land preparation work of lot G1 in the Cilegon industrial area have shown improvement of time by 15.6% while the M-PERT time accuracy of the project duration reached 98.01%.

Keywords : *earthwork , M-PERT, LoB and industrial estate*

ABSTRAK

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Konsentrasi : Managemen Konstruksi
Tittle : Pekerjaan *earthwork* pada kawasan industri berbasis metode *M-PERT* dan *Line of Balance* (LoB)

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Kebutuhan lahan industri di Indonesia rata-rata sebesar 3.000 Ha/tahun. Keterlambatan pekerjaan *earthwork* di dunia adalah sebesar 6,1 % sedangkan bobot pekerjaan *earthwork* dalam suatu proyek konstruksi mencapai 13,48%. Untuk mengatasi keterlambatan waktu pelaksanaan proyek konstruksi, peneliti menggunakan metode *Line of Balance* (LoB) dan metode *M-PERT*. Sedangkan pengolahan data statistik dilakukan dengan menggunakan metode *Statistical package for the Social Sciencs* (SPSS) *Statistics* 25

Dari hasil analisa statistik diperoleh faktor-faktor yang berpengaruh dalam pekerjaan *earthwork* pada kawasan industri berbasis metode *M-PERT* dan LoB yaitu : 1. Pemilihan *excavator*, 2. Kemiripan dalam jaringan, 3. Menggabungkan kegiatan, 4. Memahami kegiatan *PERT*, 5. Perhitungan secara manual, 6. Menghitung ulang PERT, 7. Meningkatkan waktu *crashing*, 8. Diagram jaringan kerja , 9. Identifikasi *cut and fill*, 10. Efek durasi aktivitas dan 11. Kontinuitas pekerjaan berulang.

Hasil studi kasus pekerjaan pematangan lahan kavling G1 di area Kawasan Industri Kawasan Industri II Cilegon Banten dengan metode LoB diperoleh effisiensi waktu sebesar 15,6%, sedangakan metode *M-PERT* diperoleh akurasi waktu pelaksanaan sebesar 98,01%

Kata Kunci :, *earthwork*, *M-PERT*, LoB dan kawasan industri