

**CORRELATION BETWEEN DYNAMIC CONE PENETROMETER (DCP)
AND CALIFORNIA BEARING RATIO (CBR) ON SUBBASE WITH
GROUND GRANULATED BLAST FURNACE SLAG (GGBFS) AS
REPLACEMENT FOR FINE AGGREGATE**

Final Project Report

As the requirement to obtain Bachelor degree from

Universitas Atma Jaya Yogyakarta

by :

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INTERNATIONAL CIVIL ENGINEERING PROGRAM

FACULTY OF ENGINEERING

UNIVERSITAS ATMA JAYA YOGYAKARTA

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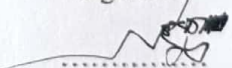
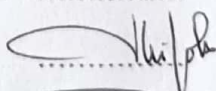

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ABSTRACT

CORRELATION BETWEEN DCP AND CBR ON SUBBASE WITH GGBFS AS REPLACEMENT FOR FINE AGGREGATE, Felisitas Nindi Astaningrum, Student ID Number 16 13 16391, year of 2020, Transportation Engineering, International Civil Engineering Program, Department of Civil Engineering, Universitas Atma Jaya Yogyakarta.

Subbase is a layer of construction that continues the load from the base to the sub grade in the form of compacted grained material. The government's new roads needs of a large amount of natural aggregate to fulfill the target. The use of natural aggregate for construction which is done massively and continuously will make it scarce. The replacement of fine aggregate with waste material such as ground granulated blast furnace slag (GGBFS) will prevent the environmental imbalance. Thus, the objective of this research is to know the correlation between DCP and CBR value from the fine aggregate replacement with GGBFS on unsoaked condition. The GGBFS was used to replace 0%, 15%, 30%, and 45% of the fine aggregate weight. From the correlation between DCP and CBR value resulted a strong relationship between CBR and DCP value for each fine aggregate replacement with GGBFS. From the four variants, it can be known that the best results are from the 30% aggregate replacement variant. From the five tests performed on each variant, at 30% aggregate replacement, four tests got the best results.

Key Words: Subbase Layer, Ground Granulated Blast Furnace Slag, California Bearing Ratio, Dynamic Cone Penetrometer.