GEOTECHNICAL INVESTIGATION OF ROAD FROM JHARIKAS TO BHOIGAR, HASSANABDAL, DISTRICT ATTOCK.

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ABSTRACT

Geotechnical investigation of road from Jharikas to Bhoigar, district Attock was carried out to know the suitability of Soil, Aggregate, Concrete and Asphalt being used. Subgrade material falls in Class A4, for sub base dismantled material is used and on testing it showed that it belongs to A3 class and is good for subbase. The PI values for sub grade is 8.41% while above layers are non-plastic. The Maximum Dry Density (MDD) for sub grade was 2.074gm/cc at 9.75% moisture content. The sub base containing 2.266gm/cc density with 6.75% Optimum Moisture Content. Water bound macadam contains 2.336gm/cc density with 4.30% Optimum Moisture Content (OMC). Using Lab Density, CBR value was calculated for subgrade is 38% and for sub base is 72.50%. The lab density and field density values were utilized to check field compaction of layers. From Sandcone Replacement Method the compaction achieved for each layer was greater than 95%. Aggregates used in water bound macadam is mostly Margalla Hill Limestone. The specific gravity for these aggregates after oven dry were 2.584. The bulk saturated surface dry aggregate has specific gravity of 2.620 while apparent specific gravity of these aggregates was calculated 2.679. The water absorption was 1.379%. The Loss Angeles abrasion values of Margalla Hill Limestone aggregate calculated is 27.7%. The Sand Equivalent values for Water Bound Macadam (WBM) is 35.4. From various test procedures, the density of layer about 2.339 having flow of 10.5mm with bitumen by weight of 3.93% in 1446.4 grams of aggregate. The compaction of asphalt is 96.6%. All the results obtained were according to AASHTO standards suitable to be used in the construction of this road.

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