

## **ABSTRACT**

*This study aims: (1) to make a pushback design from an elevation of 360-240 masl for a production target of 138,000 bcm / year, using an open pit mining system with a side hill quarry type method; (2) determine the estimated reserve resources that can still be mined from an elevation of 360-240 masl with a production target of 138,000 bcm / year, so that the remaining mine life can be known; (3) designing a mining road; (4) determine the type and quantity of mechanical equipment in the mining process; and (5) design disposal capacity according to the amount of overburden generated in each pushback design.*

*This research was conducted in Andesite mining managed by CV. Handika Karya, which is located in Gunung Rego Hamlet, Hargorejo Village, Kokap District, Kulon Progo Regency. In designing Andesite rock mining includes topographic modeling, calculation of estimated reserve resources, determining mining methods, design of mine openings, haul road design and disposal area capacity design. The recommended mining method is an open pit mining system with a side hill quarry type method. In calculating Andesite rock reserves and mining planning using AutoCAD software.*

*The results showed: a nineteen year production schedule was obtained from an elevation of 360-240 above the sea level with a total of 2,779,332 bcm of mining andesite resources and a mining area of 9.7 ha, mining could still be carried out for 19 years, the minimum width on a straight road with a capacity of 2 conveyances is 7 m and the minimum road width at a bend is 10 m, the bend radius was 23 m, the superelevation was 0.04 m/m, the cross slope was 0.14 m, and the average grade of the road was 7.8% , mechanical equipment required: 3 Caterpillar 336D L Excavators as Breakers, 1 Caterpillar 320D Excavator as loading tools, and a Toyota Dyna 130 HT Dump Truck is needed as a means of transportation with a total of 23 units in the 1st - 18th year with a match factor value of 0.62 and 27 units in the 19th year with a match factor value of 0.73; and scheduling of material stockpiling for nineteen years from an elevation of 205-226 above the sea level with an overburden storage capacity of 58.365,65 lcm and an area of 1.07 ha of stockpiling.*