Ngadiredjo Sugar Factory is one unit of PT. Plantation Nusantara X (Persero) which is engaged in the business of managing the raw material (Sugar Tree) became the main production of sugar by molasses. The quality of sugar is a major priority in order to improve it. Solutions are pursued either by adding new equipment. Factors to consider in addition of these new tools. One was the selection of safety and capacity-sectional area of the conducting wires. The installer typically uses only approximate and a safety cable to be used. They usually put a cable with an approximate cross-sectional area 5A for 1mm². Theoretically that, if the cross-sectional area of the belt cord is also great. Field project will focus on the study of election analysis safety and capacity of the cable cross-sectional area. The content of that focus includes the base system installation, security selection, cross-sectional area and calculation of cable voltage losses. The results of the nominal current ratio, current in the calculation is greater than the measurement results. Nominal current of the largest on the calculations contained in the SDP T8 at 3753A and the smallest contained in the SDP T5 at 779A. As for the nominal current on the measurement of the largest found in the SDP 2123A sebesat T8 and the smallest contained in the SDP T5 at 452A. From the comparison of loss of voltage, obtained the largest loss contained in the SDP voltage of 10.7 V T9 (2.84% of 380V) and the smallest contained in the SDP T6 at 3.23 V (0.85% of 380V), while for the results of measurements The biggest losses are at a voltage of 4.46 V SDP T8 (1.7% of 380) and the smallest contained in the SDP T10 at 1.17 V (0.31% of 380V).

Keywords: Breaker Capacity, diameter width of the transcable, installer, voltage drop