

**RE-DESIGN BEAM & COLUMN STRUCTURE
INTEGRATED COLLEGE BUILDING (ICB) III
STATE POLYTECHNIC OF BENGKALIS WITH
SPECIAL MOMEN RESISTANCE FRAME SYSTEM
(SMRFS)**

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ABSTRACT

State Polytechnic of Bengkalis is the only one state polytechnic in Riau Province. Along with his development of education a new building was built to fulfill the required facilities and infrastructure. Then in this case it's need a good design to get a building structure that is able to withstand the load and able to withstand earthquake load according to the earthquake area and local conditions.

This final project was wrote by the descriptive method which include the input, analysis and output process. The input process which include design the structure geometry, load design and modeling. Analysis process which include analysis of self force structure with ETABS 2013 and reinforcement design. While the output process includes is draw the reinforcement result of the analysis process in 2D & 3D model.

From the result of analysis we get that the B1 exterior 500 mm x 300 mm as its dimensions, along the tension plastic zone is used 5D16, press plastic zone is used 3D16, 2D13 in the middle of the plastic zone and 2Ø10 – 90 confinement bar. In the tension non plastic zone is used 4D13, press non plastic zone is used 3D16, 2D13 in the middle of the non plastic zone and 2Ø10 – 150 confinement bar.

Key Word : Design, Beam, Column, ETABS, Special Moment Resisting Frame System