OPTIMISATION OF A DAM SHAPE USING CADAM SOFWARE

The aim of the exercise is to design a cross-section of dam that satisfies all safety criteria.

Your task is to model and evaluate the following:

(i) Model of the initial design (load cases: usual, unusual, and exceptional). Compare the result with your calculation at the exercise 1.
(ii) Model of the modified dan with the extended heel (5°) (load cases: usual, unusual, and exceptional). Compare the result with your calculation at the exercise 1.
(iii) Find a safe design of dam – iteratively modify the design of the cross- section. The dam must be safe for the usual, unusual, and exceptional load case.
(iv) Check the design for scenario of non-working drainage system.
(v) Predict a crack in a dam body. Model a crack on a location of dam body where you believe is the higher chance of a crack occurrence. Crack has a length of 30% of a lift joint length. Is the base joint the most critical joint in the system?

Prepare a report where you describe the work with the software, explain all the modelling assumptions, and present and interpret the result. Describe the final design of dam. Draw a technical drawing of the design.