Plot general and station single line diagram of a 400kV/230kV substation with following specifications:

1) The substation has three 400kV input feeders and eight 230kV output feeders.
2) Use the one-and-half bus-bar arrangement in 400kV side.
3) Use the extended ring with one-and-half bus-bar arrangement in 230kV side. (Combine both ring and one-and-half arrangements).
4) Use two step-down three winding transformers 400kV/230kV/20kV with connectivity of Yn/Yn/d.
5) The substation lighting system (internal consumption) needs 380V that should supply with 20kV voltage level.

Show the exact location of CT, PT, DS, ES, LA and T on line and transformer bays. Use the presented guidelines on lecture 04.

**Hint:** Student must plot the General view and Station view of SLD by AUTOCAD, such as below examples: