

**Open-Ended Design Problem #4 (last one!)**

*Note - This section should be written up as a short consulting report to be handed in separately from the Lab Answer Sheet that is also due for this lab.*

Following on from your preliminary design of a crown pillar (which you based on an Exam2D stress analysis), you have received a report of a similar mine having experienced problems with the stability of their crown pillar. In further developing your design, you have decided to check, and possibly revise, your recommendation by running a second analysis that accounts for material yield.

For the most part, the same assumptions and input parameters used in your first assessment are still applicable. However, now that the analysis will be able to explicitly model material yield and stress-strain interactions between the underground mining and open pit, other considerations may come into play besides simply the stability of the crown pillar. In addition, another factor to consider is the possibility of recommending backfilling as part of the mining method to help limit deformations and to help prevent failure.

