

## CHAPTER V

### CONCLUSIONS

The following conclusions can be drawn from this study :

1) By formulating in such a way that the elastic stiffness is employed throughout the incremental analyses it eliminates the time consuming out-of-core readings and writings of the modified displacement transformation matrices of each substructure at every time step in the non-linear substructure analysis.

2) The static collapse load and collapse mechanism can be accurately predicted by using the approach described.

3) The accuracy of the dynamic solution depends on the number of degrees-of-freedom and the number of modes used for the reduced system. If the modes used is chosen from those which have small error in the eigenvalue analysis very good results could be expected. Inclusion of the higher modes which are much in error can lead to poor results. Satisfactory results were obtained with less than 5% error in predicting the maximum displacement and nodal forces when the number of degrees-of-freedom of the reduced system was about 20% - 25% of that of the full system.

4) Since the required incore storage is reduced when the substructuring technique is applied, the application of this technique would be useful for analysing large structural systems using a small to medium size computer.