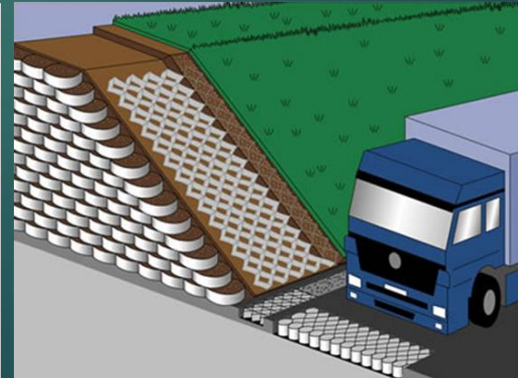
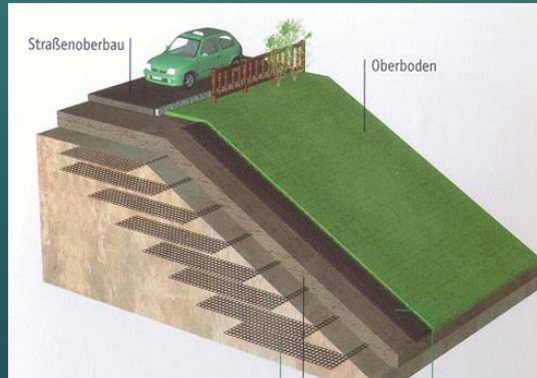
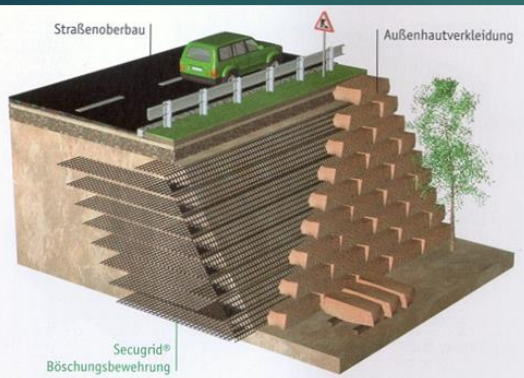


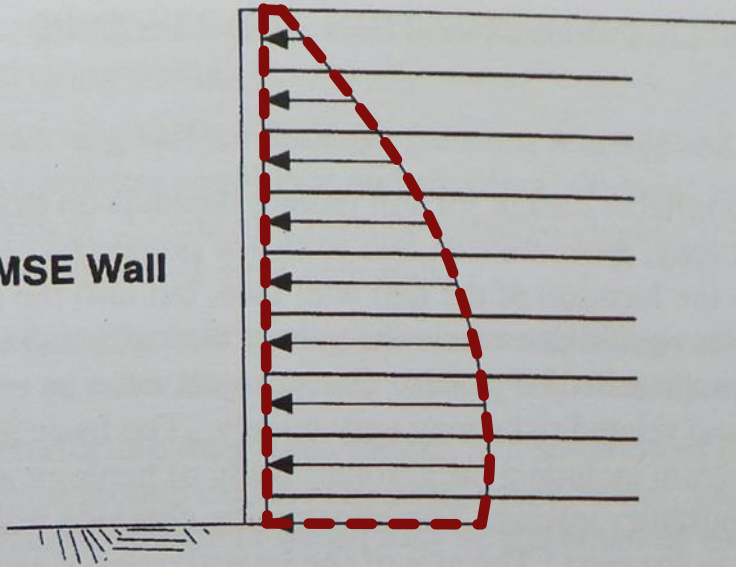
加勁擋土牆之工程性質與應用案例

Mechanical Properties and Application Case of MES Wall

水土保持局
技術研究發展小組 黃奉琦
20170704

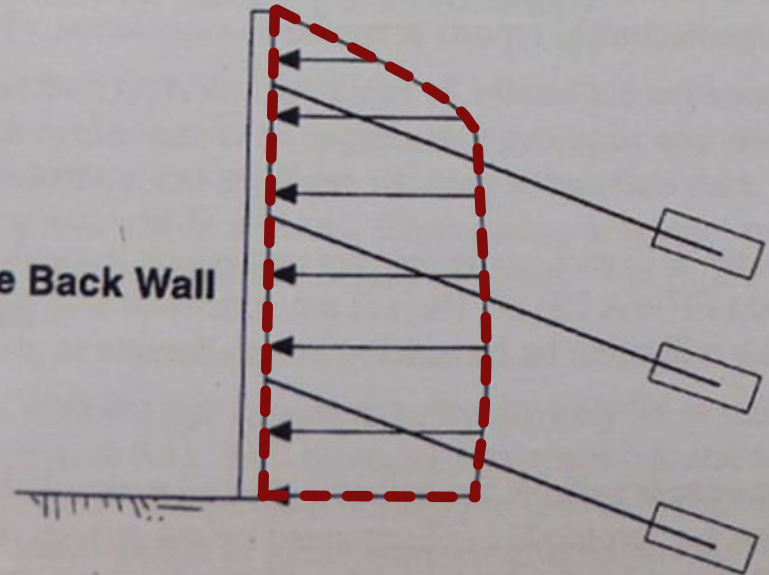


MSE Wall

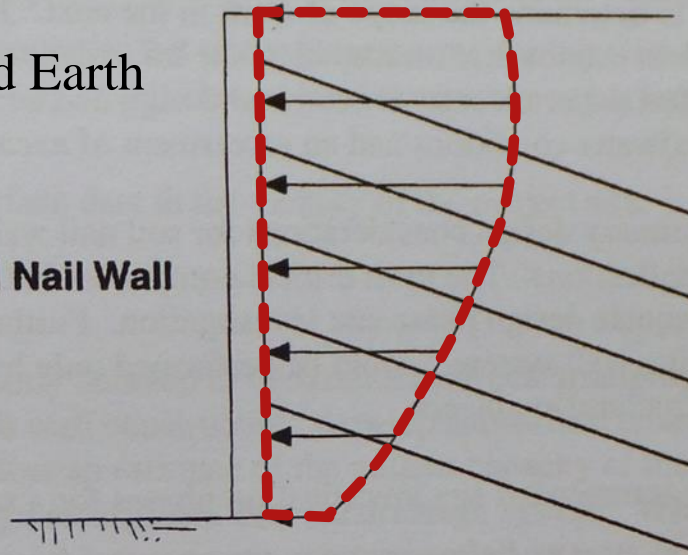


**Mechanically Stabilized Earth
Wall**

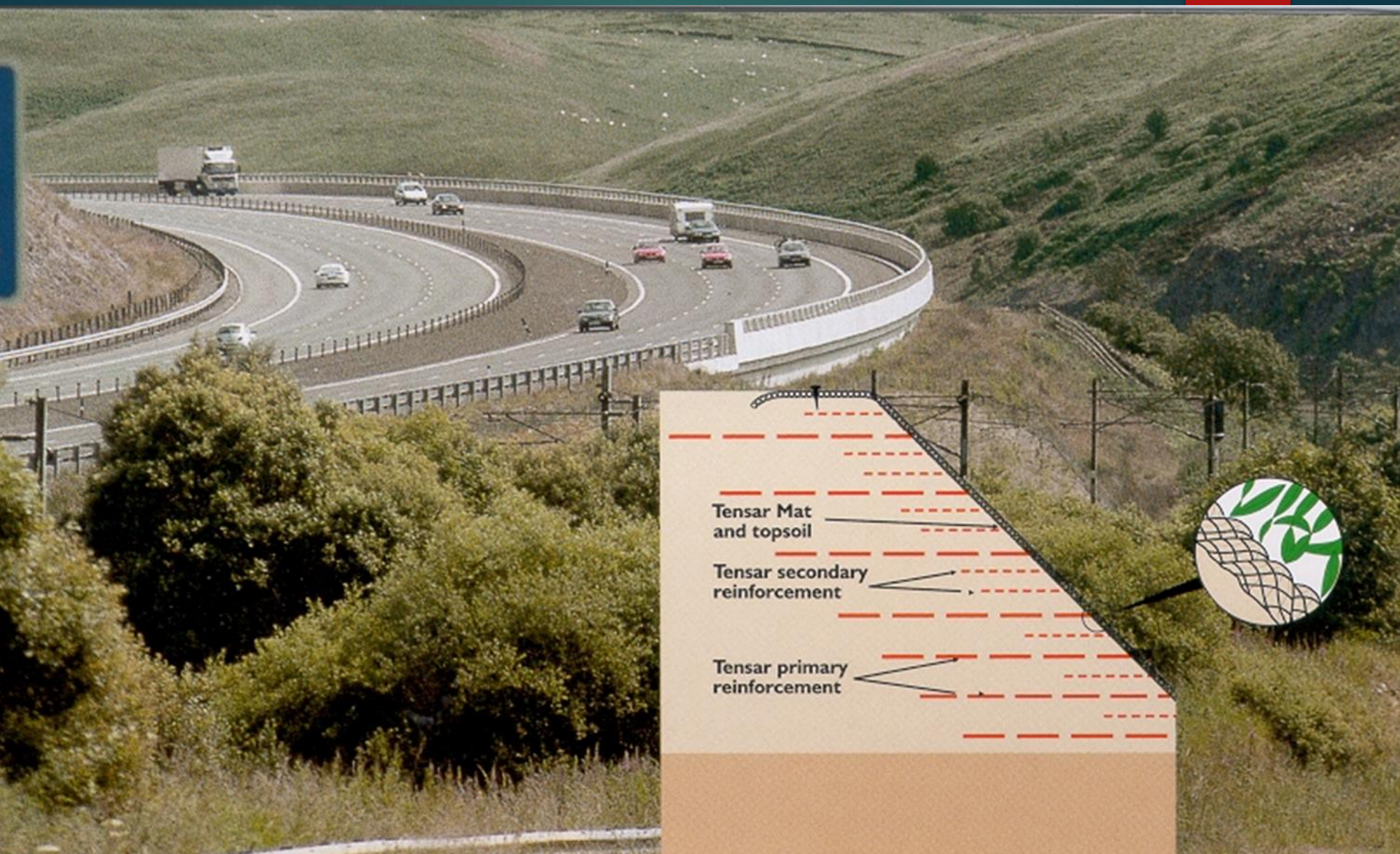
Tie Back Wall



Soil Nail Wall

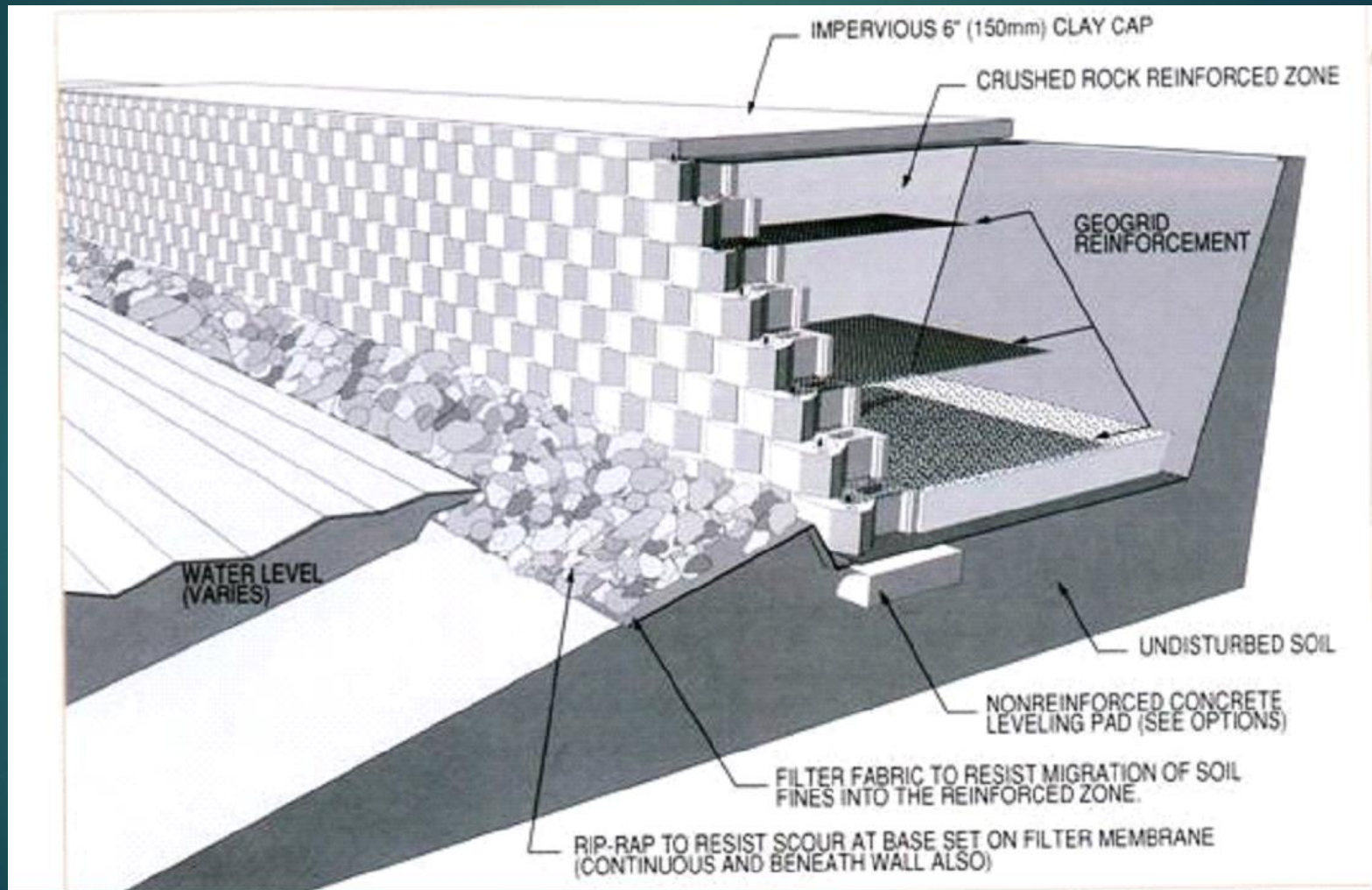


Typical stress
distribution
vertically in
reinforcements

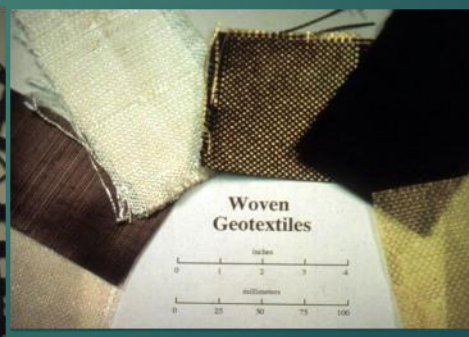
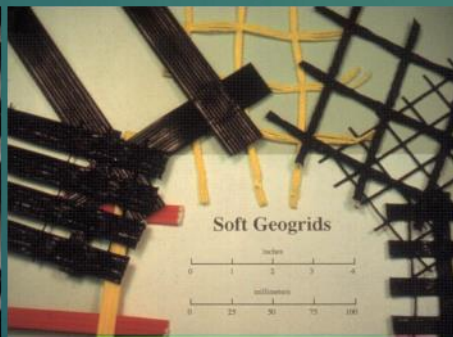
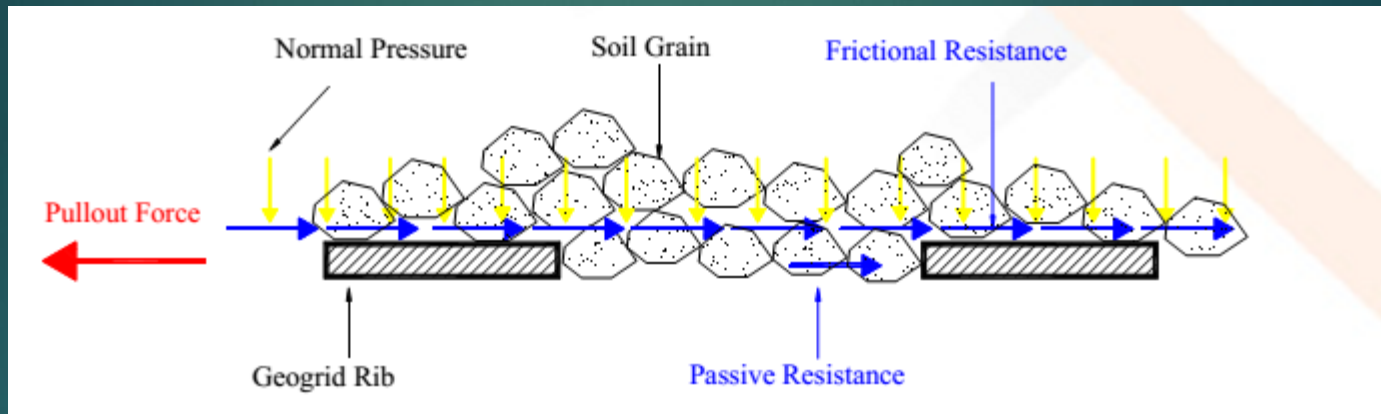




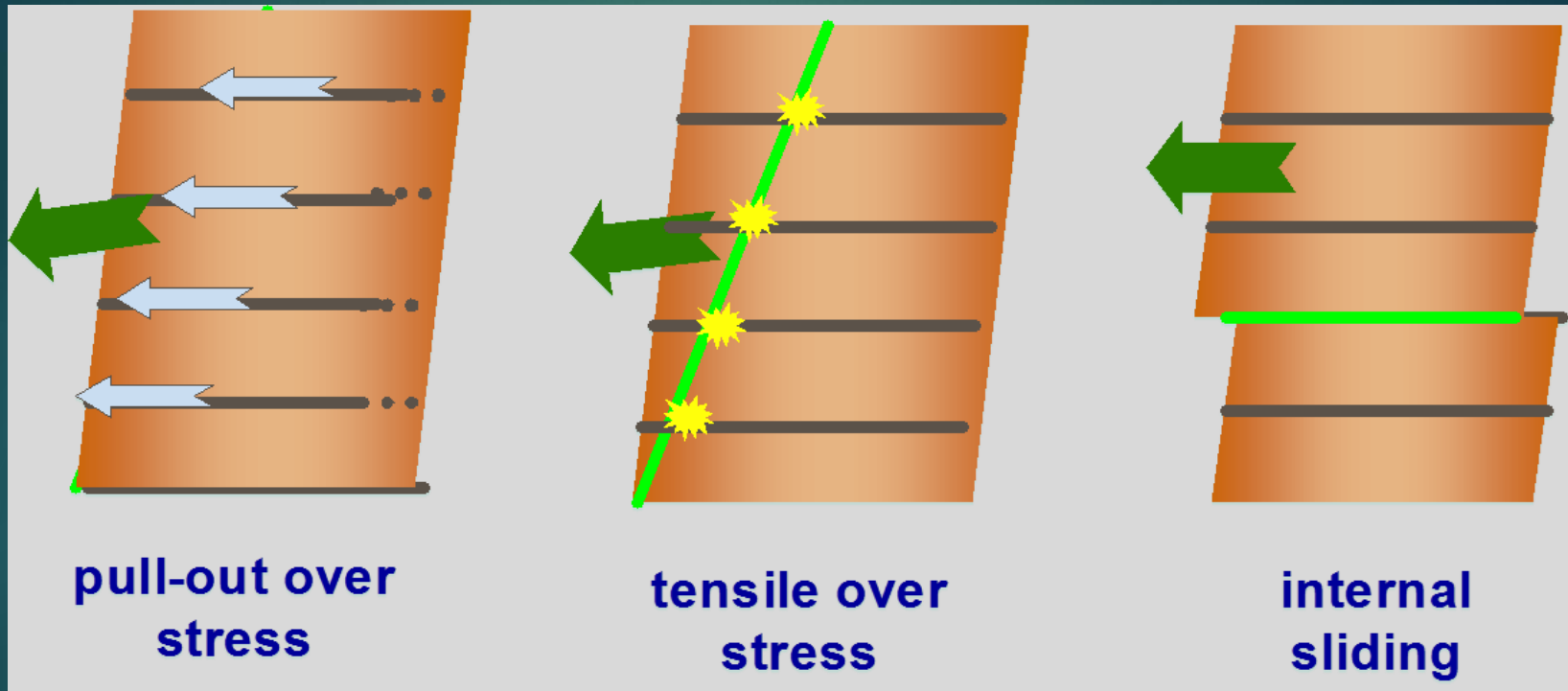
加勁擋土牆 - 基本構築原件



土壤與加勁格網互制行為

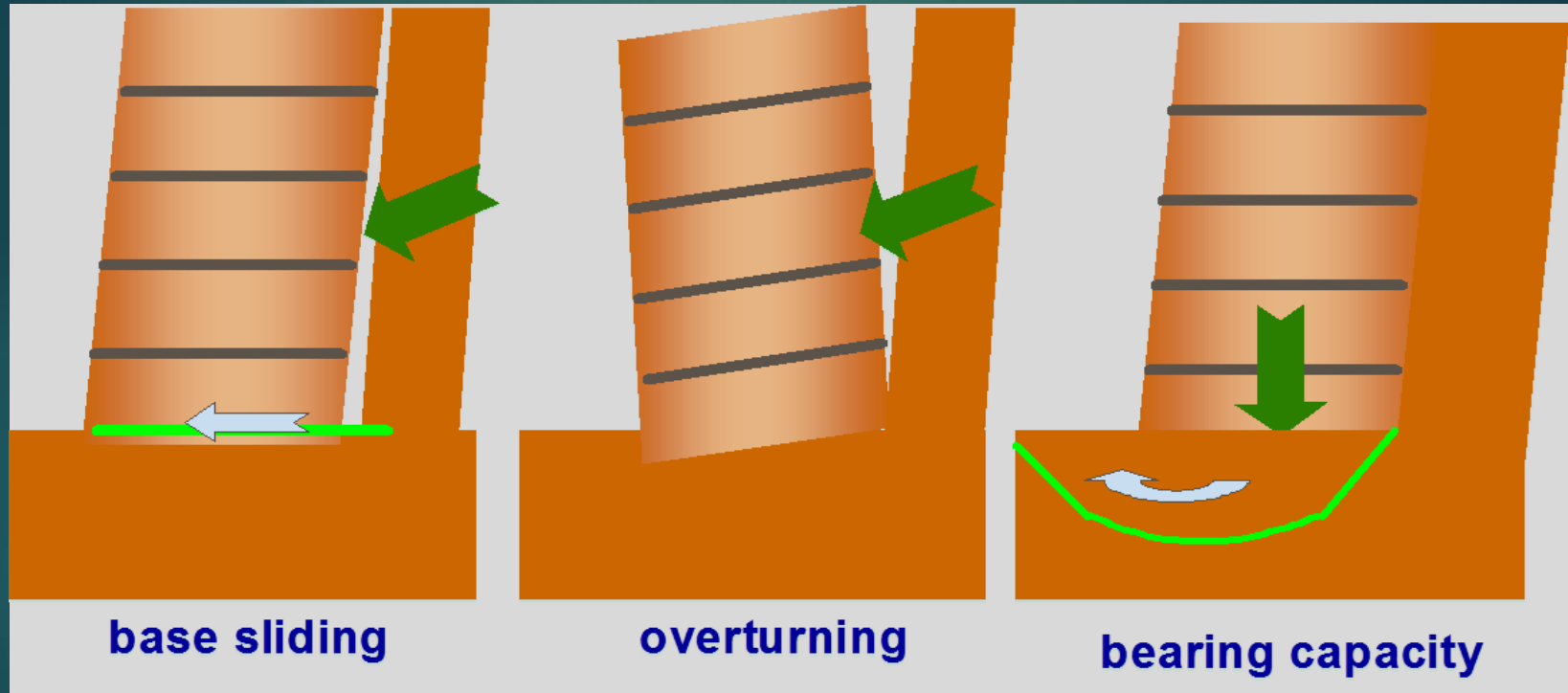


加勁擋土結構靜態設計分析



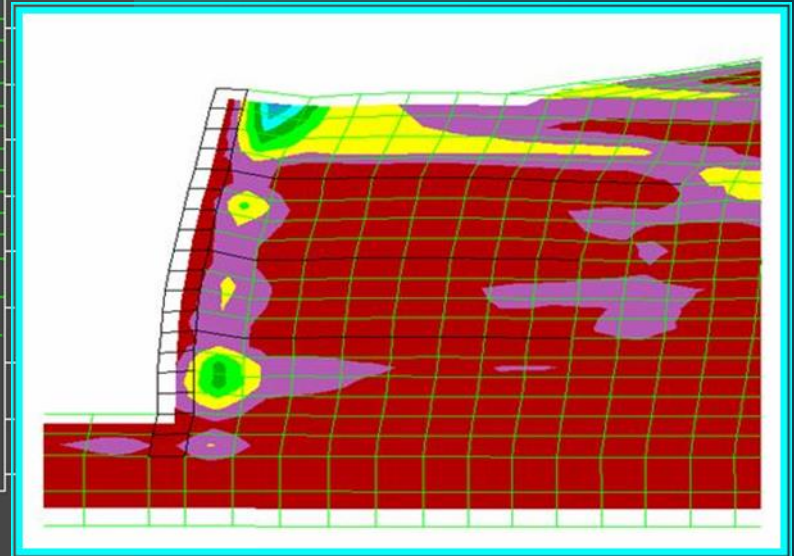
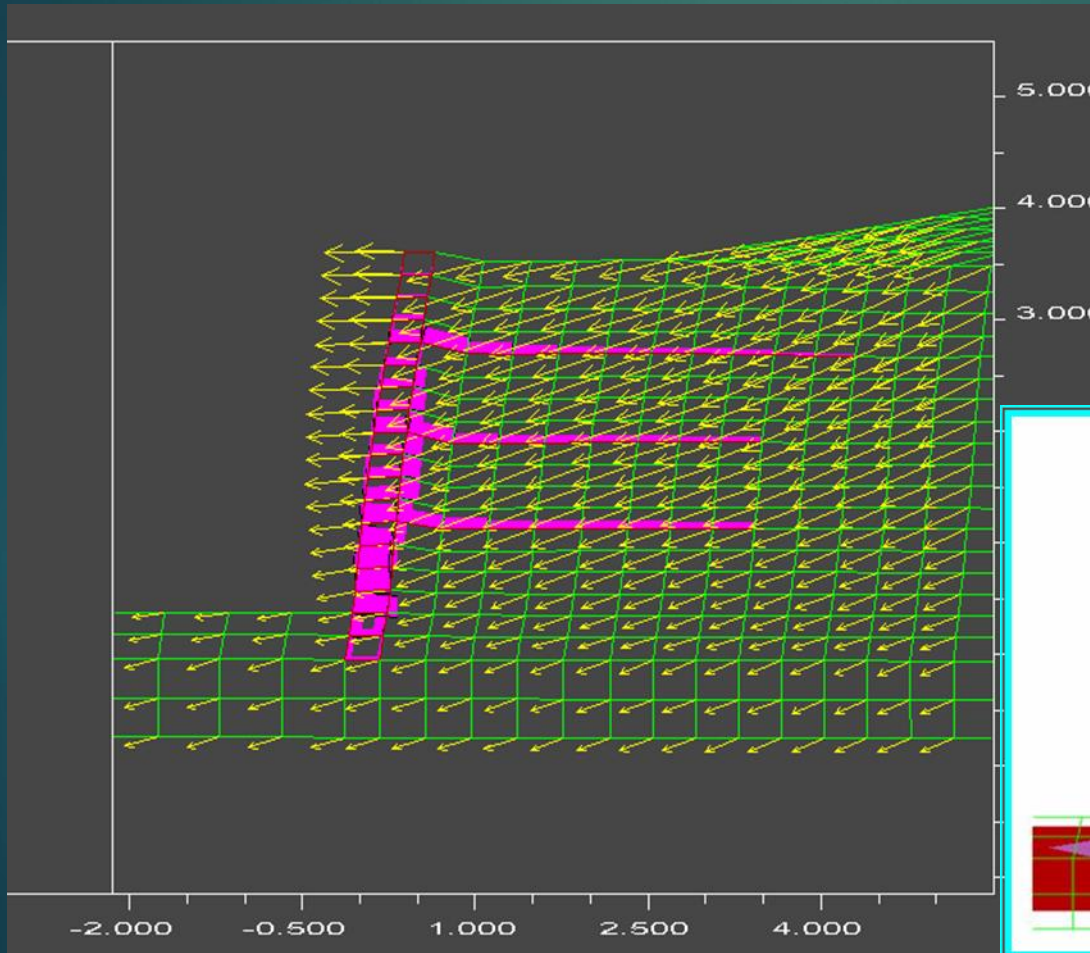
結構體內部破壞示意

加勁擋土結構靜態設計分析

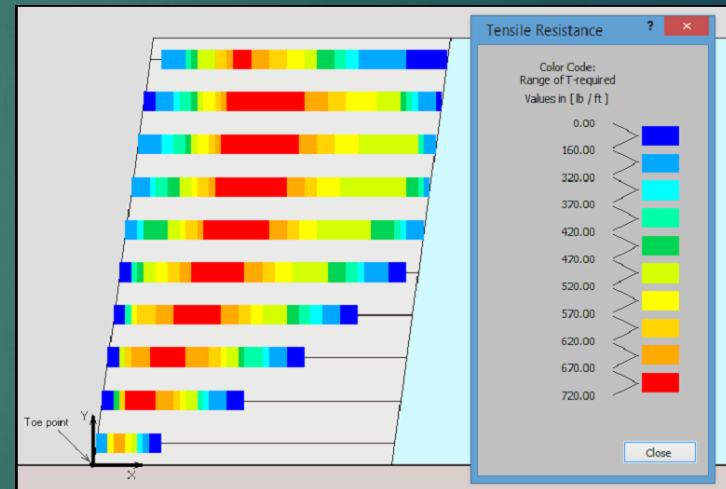
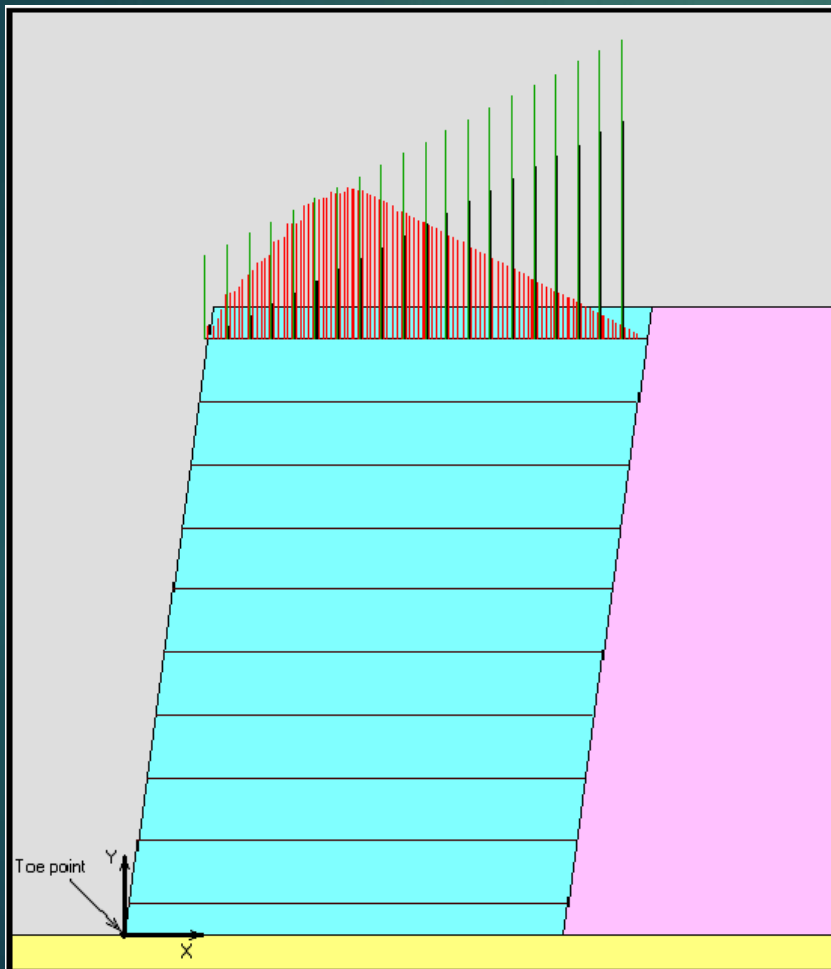


結構體外部破壞示意

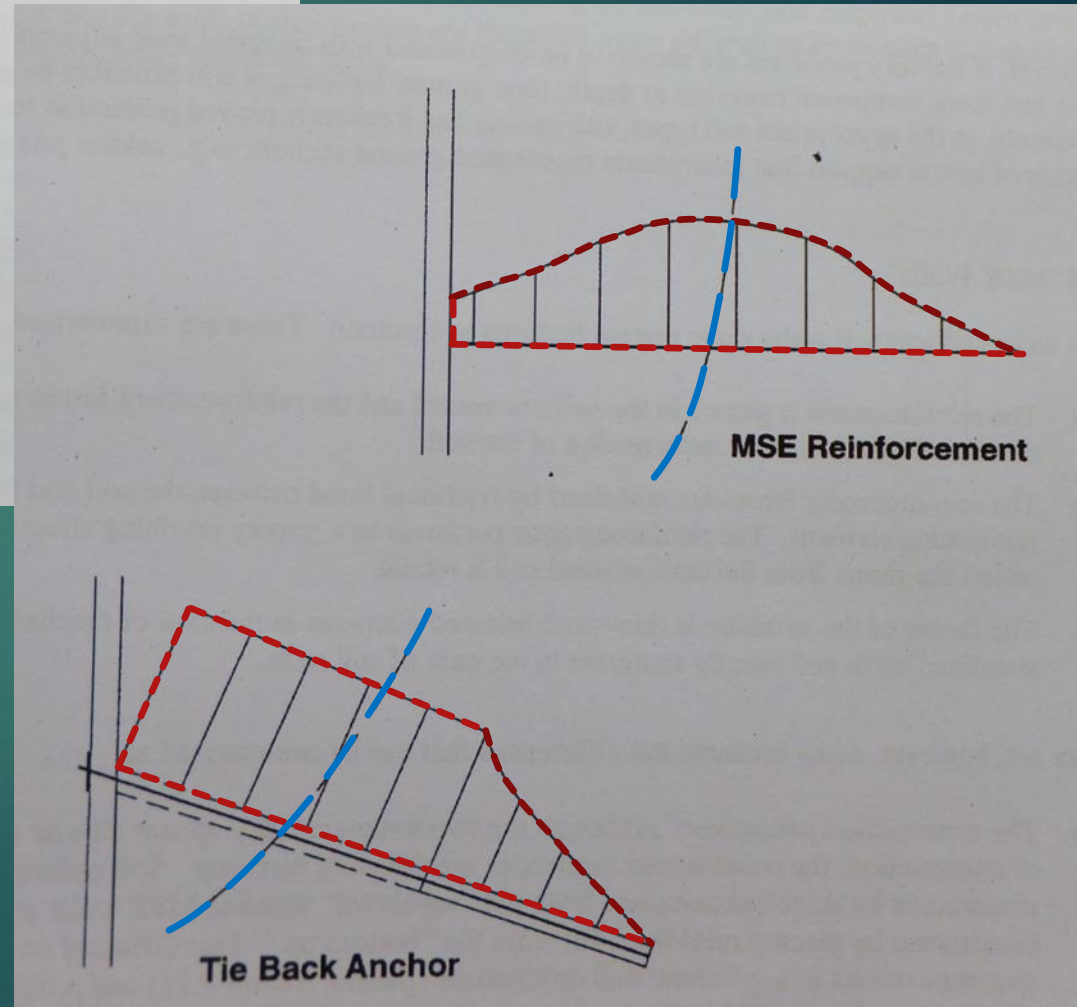
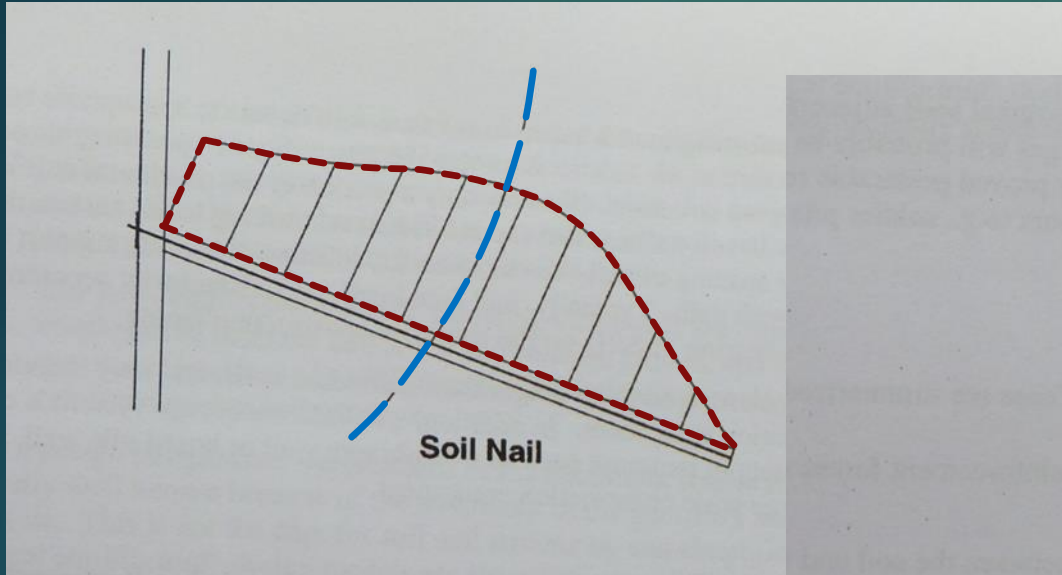
加勁材料應力分佈狀態



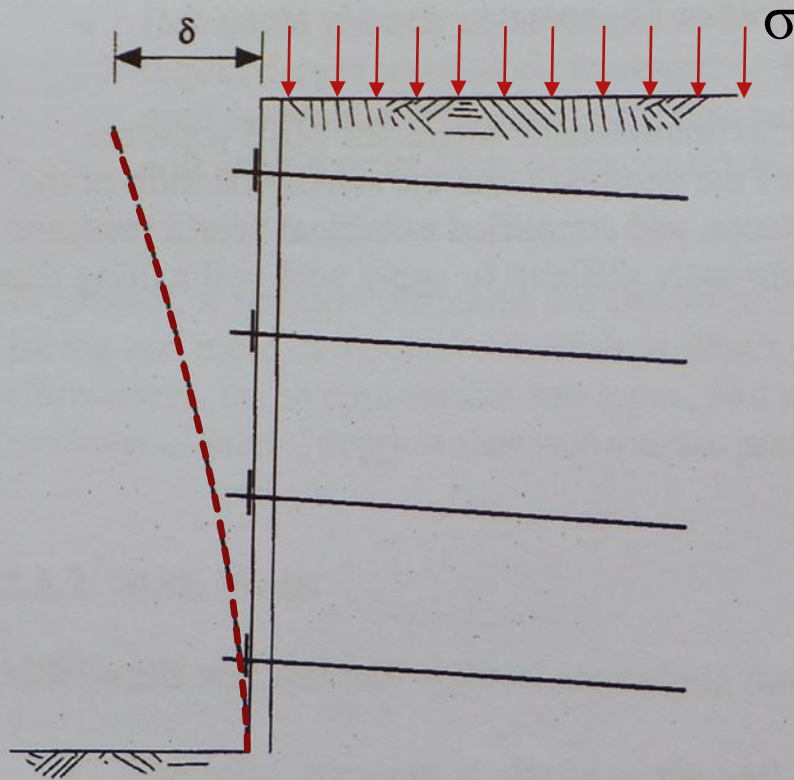
加勁材料應力分佈狀態



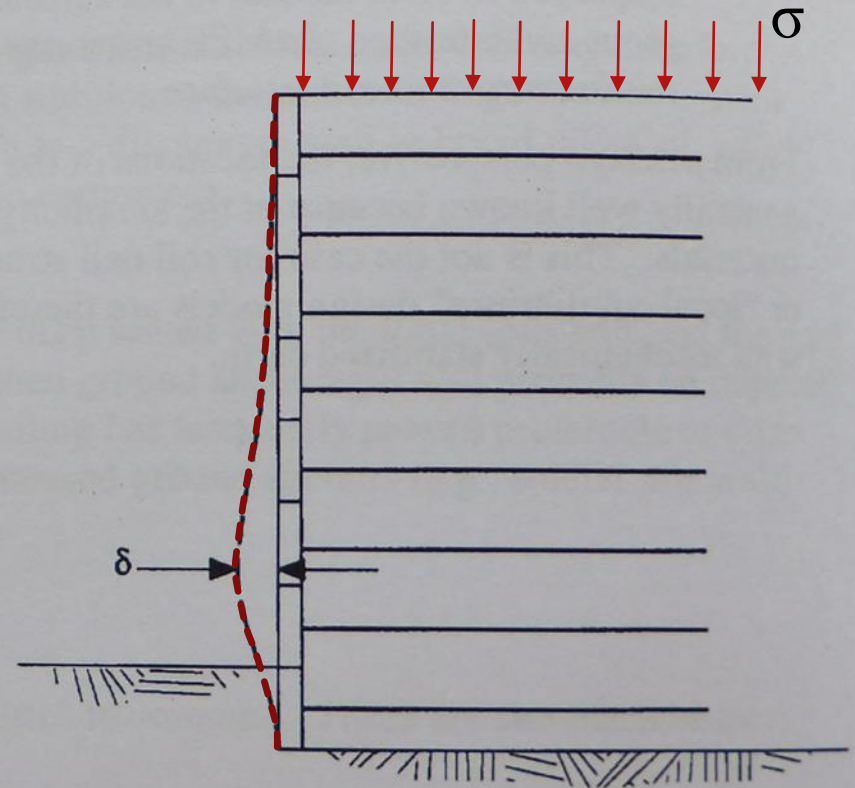
加勁材料應力分佈類型



Typical tensile force distribution along reinforcement length



Soil Nail Wall

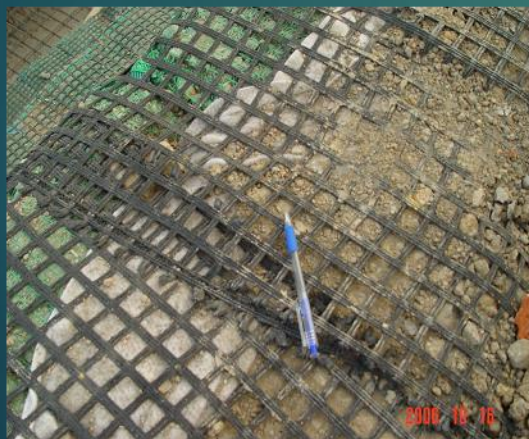


Reinforced Soil Wall (MSE)

Differences in wall deformation

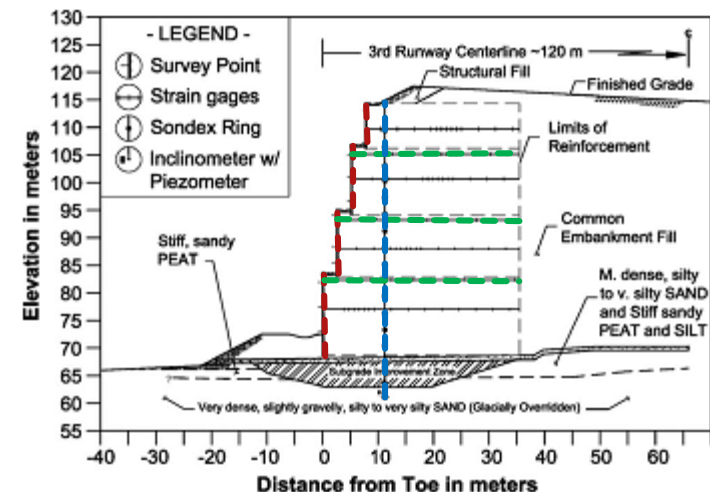
施工注意事項

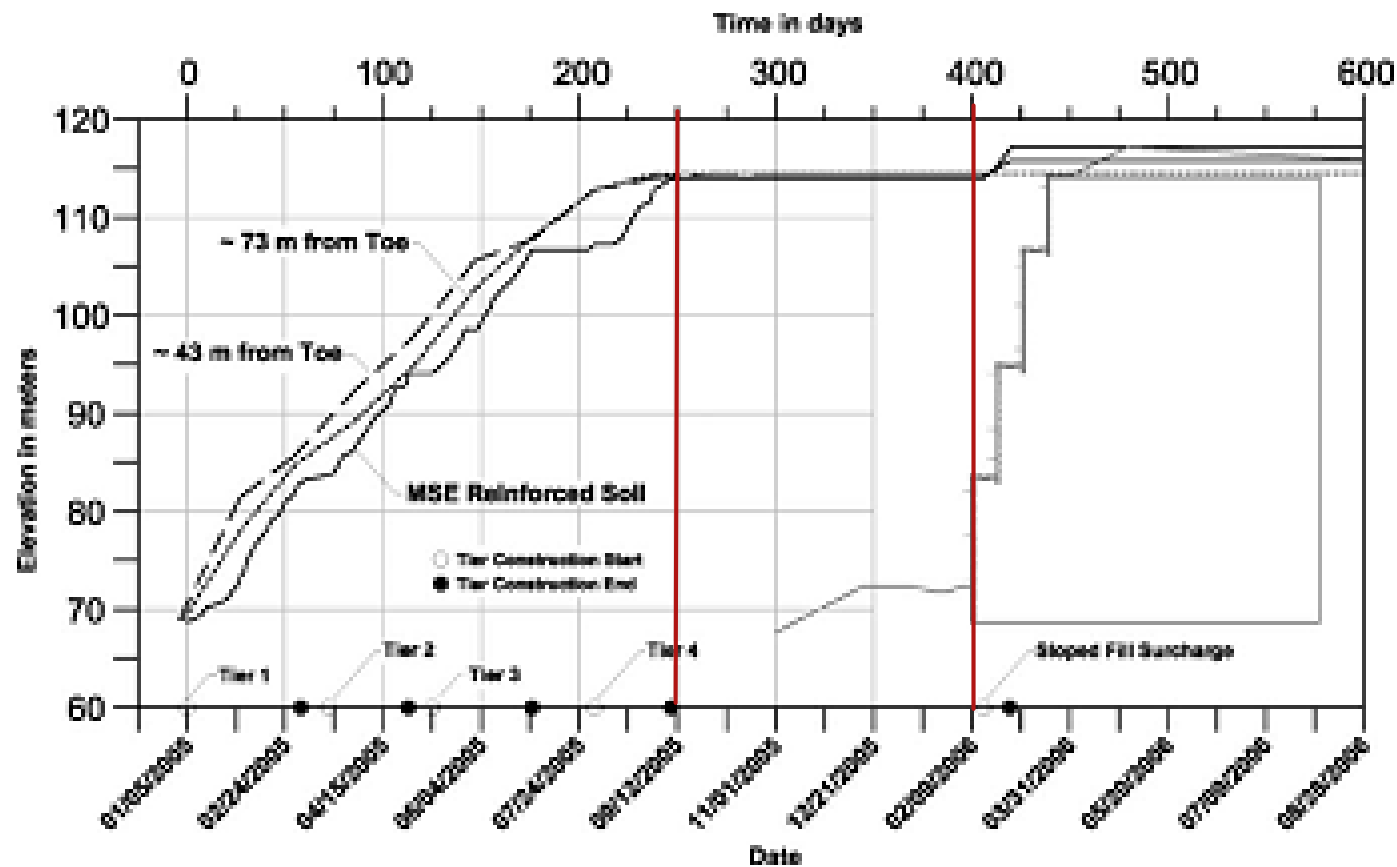
13/21



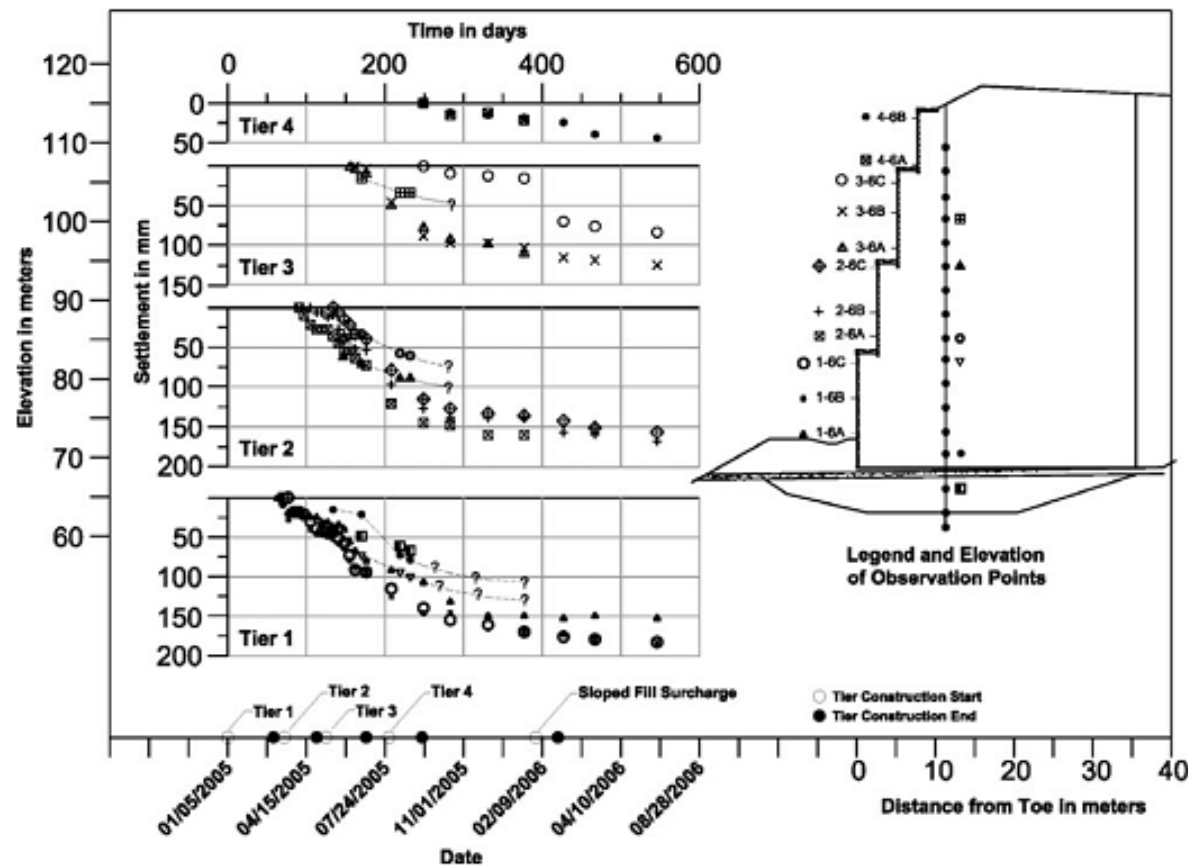
Design and Performance of a 46-m-High MSE Wall

14/21



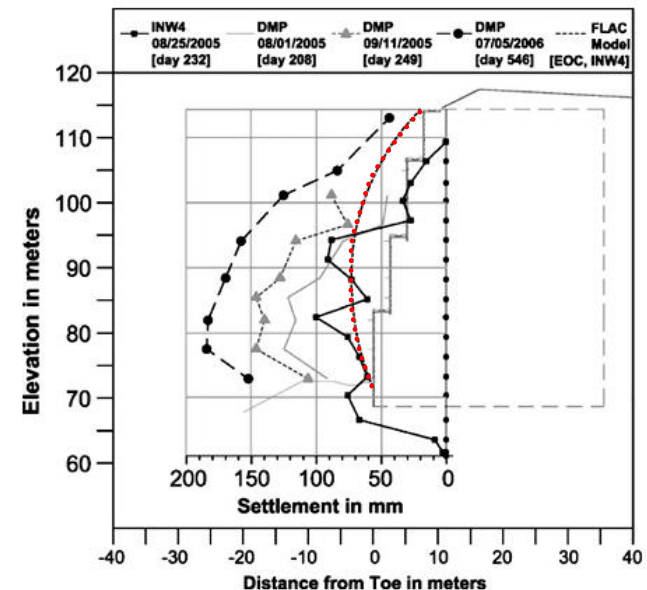


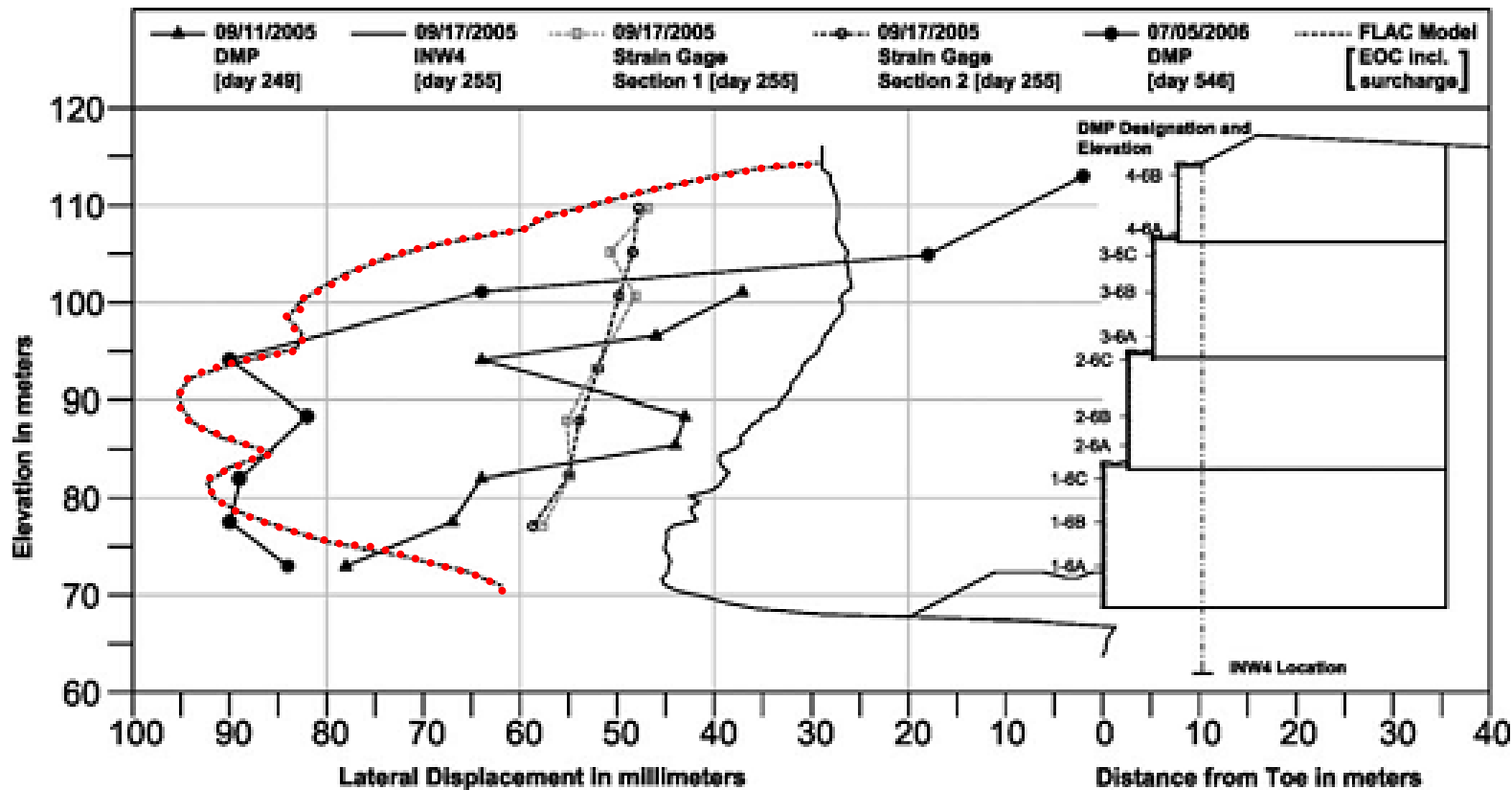
MSE wall fill placement time history



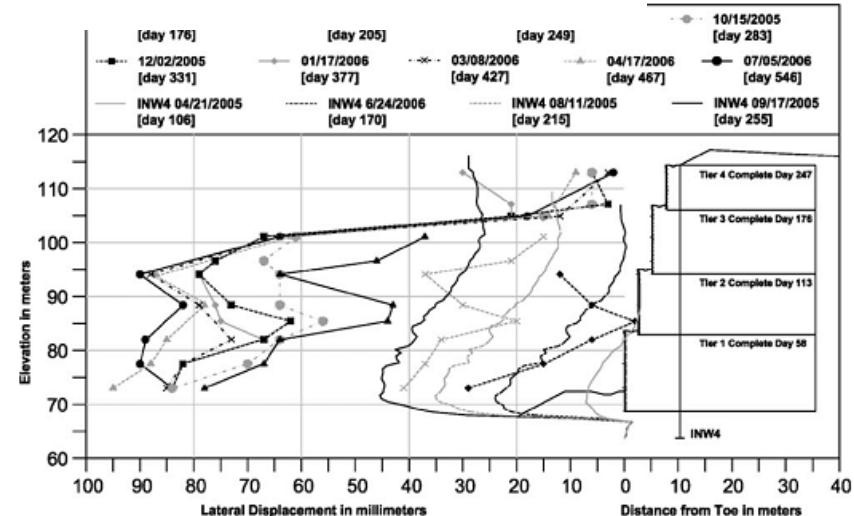
FLAC model comparison

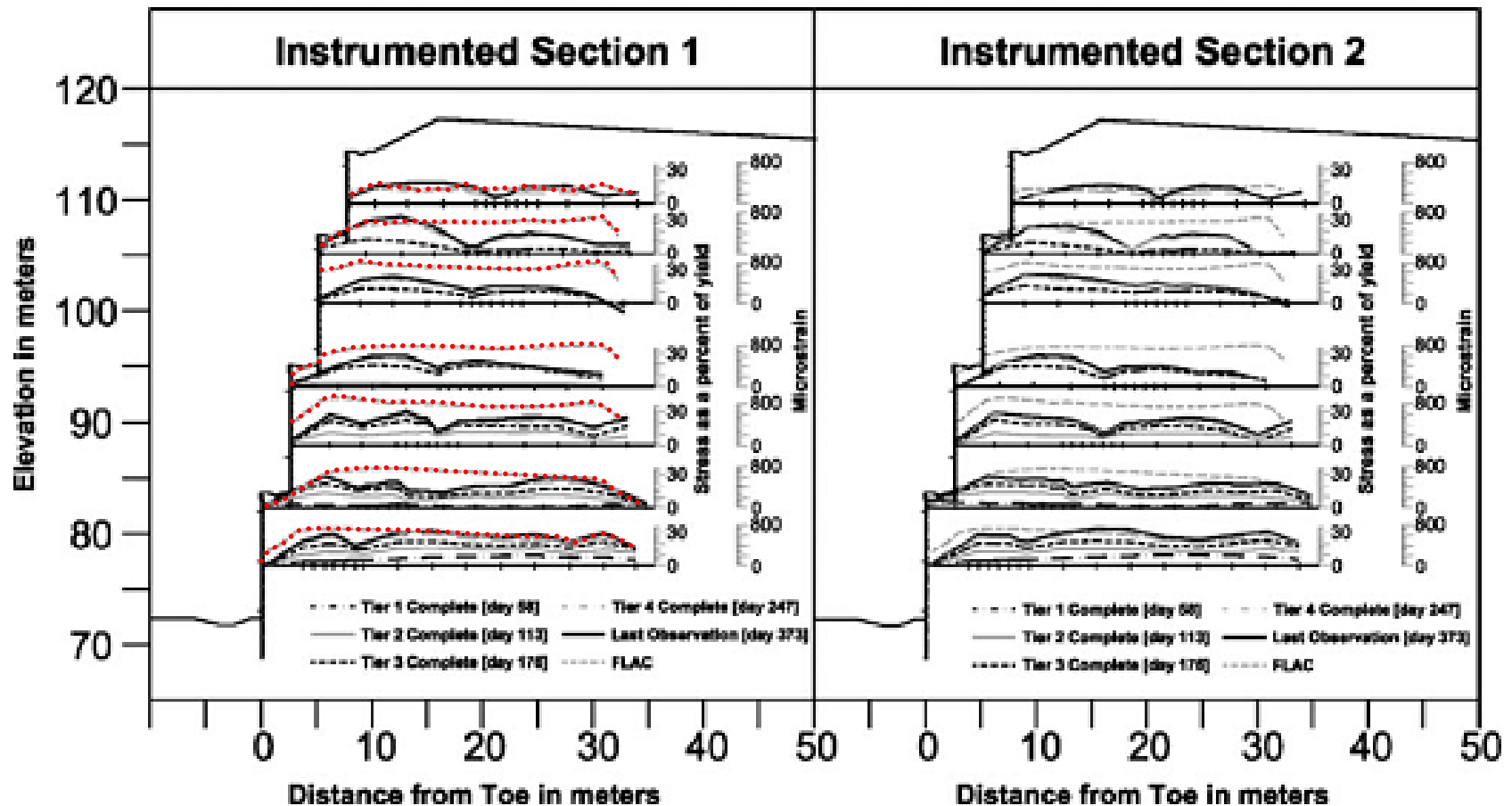
Settlement time histories of the wall face, reinforced fill, and subgrade





Comparison of lateral displacement





Measured strain and estimated stress in reinforcement strips and FLAC model comparison

Summary

Selected Aspects of MSE Wall Design

- ▶ *Ground Improvement*
- ▶ *Overall MSE Wall Design*
- ▶ *Reinforced Fill*
- ▶ *Reinforcement Design*
- ▶ *Seismic Considerations*
- ▶ *Stability Analyses*
- ▶ *Sliding Block Displacement Analyses*

Construction of the West MSE Wall

- ▶ *Filling Time History*
- ▶ *Construction Crews, Methods, and Equipment*
- ▶ *Wall Performance*
- ▶ *Vertical Displacements*

References

- ▶ **Design and Performance of a 46-m-High MSE Wall**
10.1061/(ASCE)GT.1943-5606.0000294
- ▶ **Soil Nail Wall Reference Manual**
Federal Highway Administration
No. FHWA-NHI-14-007

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