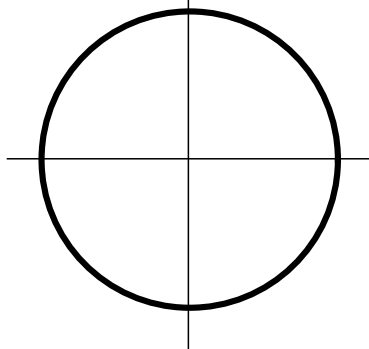
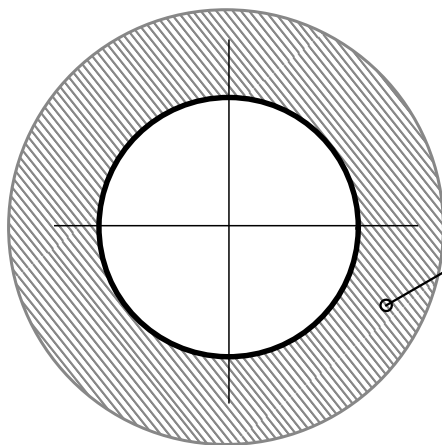


Excavation Process



Elastic

zone
 $\underline{\underline{\varepsilon}} = \underline{\underline{\varepsilon}}^e$

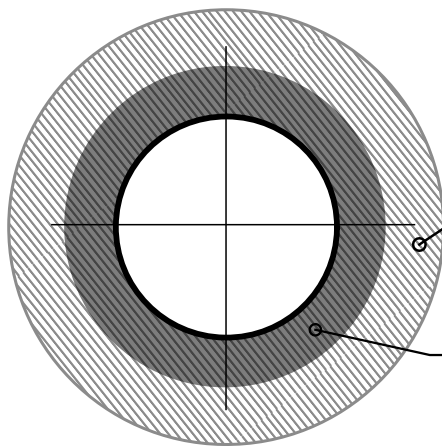


Elastic

zone
 $\underline{\underline{\varepsilon}} = \underline{\underline{\varepsilon}}^e$

Viscoplastic

zone
 $\underline{\underline{\varepsilon}} = \underline{\underline{\varepsilon}}^e + \underline{\underline{\varepsilon}}^{vp}$



Elastic

zone
 $\underline{\underline{\varepsilon}} = \underline{\underline{\varepsilon}}^e$

Viscoplastic

zone
 $\underline{\underline{\varepsilon}} = \underline{\underline{\varepsilon}}^e + \underline{\underline{\varepsilon}}^{vp}$

Elasto-plastic-viscoplastic

zone
 $\underline{\underline{\varepsilon}} = \underline{\underline{\varepsilon}}^e + \underline{\underline{\varepsilon}}^p + \underline{\underline{\varepsilon}}^{vp}$