Moment-curvature analysis for hollow prestressed-concrete piles

Tutorial

Name:	Moment-curvature analysis for hollow prestressed-concrete piles
Description:	Perform moment-curvature analysis on custom sections developed within the Section Designer.
Program:	SAP2000
Version:	12.0.1
Model ID:	na

Moment-curvature analysis may be performed within SAP2000 by using the Section Designer. Prestressing capabilities are available.

The moment-curvature analysis procedure for a Caltrans section is as follows:

- Either create or open the model, then select Define > Materials > Add Material Quick to define material properties for the concrete, reinforcing-steel, and tendons which will be used.
- Select Define > Section Properties > Frame Sections > Add New Property > Other > Section Designer, select the concrete base material, then click Section Designer to open the Section Designer.
- In the Section Designer, select Draw > Caltrans > Round, then click on the grid to place the shape.
- Right-click on the shape to adjust dimensioning and to set the rebar field to zero. Within the Prestress table, select Edit to input prestressing data, then select OK twice to exit both forms.
- Select Draw > Solid Shape > Circle, then click on the grid away from the Caltrans section to place the shape.
- Right-click on the shape, change the material to Opening, adjust the diameter, then locate the opening at the center of the Caltrans shape.
- Select Display > Show Moment-Curvature Curve, then specify the bending angle and axial force to plot various moment-curvature curves.
- Select Details to retrieve an output report.

Nonlinear section response may also be evaluated through pushover analysis.

See Also

- Context Help