W 10X49

−0.3 W +0.1 D

−0.38 W +0.1 D

12'

W 10X49

3'

soil

8'

−3 kips

$M_u = -26$ kip.ft

W 10X49

W 10X49

soil

8'

$M_u = 0.9D + L = 0.9*16 + -40 = -26$ kip.ft
$P_u = 0.9D + L = 0.9*2.3 + -5.3 = -3$ kips

Elevation View

The only weight preventing the structure from overturning is the footing weight and the column weight.

Column weight = 49 lb/ft * 12 ft = 588 ib.

Footing weight , assume trial footing dimensions 8' X 5.5' X 18". and assuming the column is at the footing centre.

Concrete weight = 9900

Total dead axial = 10500

Net axial 10.5 − 3 = 7.5
10.5/3 > 1
$e = M/p = -26 / 7.7 = 3.7$
3.7 x 2 = 7.4 < 8
$Q_{max} = 2 \times 7.5 / 3 \times 5.5 \times (4-3.7) = 3$ kips/ft2
Footing size = 8'x5.5'x18"