

COLUMN MARK: K2 06TH FLOOR

$b_c = 500$

$h_c = 500$

Concrete: C60  $f_{cu} = 60.0$

Vertical Load: DL = 2187.763 LL = 475.439

	Mxlmin	Mxlmax	Mxrmin	Mxrmax	Mylmin	Mylmaxn	Myrmin	Myrmax
D+L	-104.228	-73.940	-102.166	-67.081	N/A	N/A	-325.698	-178.506
D+L(W)	-86.539	-71.029	-84.800	-65.394	N/A	N/A	-267.033	-178.506
D Only	-78.800	-69.791	-77.160	-64.677	N/A	N/A	-212.423	-178.506

Wind Load:	Dir.	Mwxl	Mwxr	Mwyl	Mwyr	Nw
	X-X	-35.914	37.601	N/A	9.172	16.142
	Y-Y	18.707	-21.691	N/A	-20.217	-98.209

ALONG X-X: D+Wx(\) Nc = 2203.906

BEAM (LHS): TBX1

$b = 300$

$h = 450$

Bars: 2Y25 (Top)

$A_s = 982$

$d = 412.5$

$M = -130.578$

BEAM (RHS): TBX2

$b = 300$

$h = 450$

Bars: 2Y25 (Top)

$A_s = 982$

$d = 412.5$

$M = -10.508$

$K = M/bd^2f_{cu} = 0.040$

$z = [0.5 + \sqrt{(0.25 - K/0.9)}]d = 410.921$

$T = M/z = -25.572$

$T = 1.25A_s f_y = 564.505$

$V_{jhx} = 564.505 - 25.572 = 538.933$

$V_{jvx} = (h_b/b_c)V_{jhx} = 485.040$

$C_j = V_{jhx}/(V_{jhx} + V_{jhy}) = 0.276$

$b_j = b + 0.5b_c = 550.0$  Use 500.0

$V_{jhx}/b_j/b_c = 2.156 < 0.25f_{cu}$  OK.

$A_{jh} = V_{jhx}/(0.87f_{yh})[0.5 - C_j N/(b_c h_c f_{cu})] = 619$

Provide: 4Y10 2Legs.

$A_{jv} = (0.4V_{jvx} - C_j N)/(0.87f_{yv}) = -1037 < 0.0$

Reinforced bar is not required.

ALONG Y-Y: D+W<sub>y</sub>(/) Nc = 2050.271

BEAM (LHS): N/A

BEAM (RHS): TBY5

$b = 300$

$h = 550$

Bars: 5Y25 (Top)

$A_s = 2454$

$d = 512.5$

$M = -239.848$

$T = 1.25A_s f_y = 1411.262$

$V_{jhy} = 1411.262$

$V_{jvy} = (h_b/h_c)V_{jhy} = 1552.389$

$C_j = V_{jhy}/(V_{jhx} + V_{jhy}) = 0.724$

$b_j = b + 0.5h_c = 550.0$  Use 500.0

$V_{jhy}/b_j/h_c = 5.645 < 0.25f_{cu}$  OK.

$A_{jh} = V_{jhy}/(0.87f_{yh})[0.5 - C_j N/(b_c h_c f_{cu})] = 1414$

Provide: 5Y10 4Legs.

$A_{jv} = (0.4V_{jvy} - C_j N)/(0.87f_{yv}) = -2156 < 0.0$

Reinforced bar is not required.