

* K1 *

LOWER GRD. TO LOWER GRD. 1

X-X : Unbraced

Y-Y : Unbraced

	Mark	Type	Span	Section	Ang	F.E.M.
Top Beam :	LGBc9	0	3.800	375x700	180.0	542.427(221.538)
	LGB10	1	3.600	375x700	0.0	15.358(0.000)
	LGB16	2	7.200	375x700	270.0	98.884(77.900)
	TEST-1	0(Corbel)			0.0	54.117(37.758)
Bot. Beam :	LG1Bc9	0	3.800	375x700	180.0	509.100(339.022)
	LG1B10	1	3.600	375x700	0.0	14.580(0.000)
	LG1B16	2	7.200	375x700	270.0	92.652(155.801)

Colm.Pro.:	Hux	Huy	Section	Hcx	Hcy	Section	Hlx	Hly	Section
	3.300	3.300	800x375	3.300	3.300	800x375	12.990	12.990	1100x1000

Slender : Lex= 5.344 Lamx= 6.68 < 10 Ley= 4.446 Lamy= 11.85 > 10

Vert. Load:	DL. =	2853.729(23.760)	LL. =	509.027
Top : +Mdx=	30.114	-Mdx= -235.117	+Mdy= 0.000	-Mdy= -36.641
+Mlx=	16.366	-Mlx= -96.027	+Mly= 0.000	-Mly= -28.866
Bot. : +Mdx=	193.731	-Mdx= -5.548	+Mdy= 13.898	-Mdy= -0.000
+Mlx=	129.011	-Mlx= -0.000	+Mly= 23.370	-Mly= -0.000

Soil Load:	Mstx	Msty	Ps	Msbx	Msby
---	-9.307	-10.822	-3.997	2.802	4.062

Wind Load:	Mwtx	Mwty	Pw	Mwbx	Mwby
X-X	-4.155	-0.421	-42.930	10.875	0.418
Y-Y	-32.573	-64.486	37.230	42.492	68.333
U-U	-12.941	-16.344	-38.469	22.743	17.308
V-V	-4.918	-19.331	64.359	-0.290	20.126

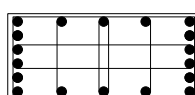
Dyna. Load:	Mntx	Mnty	Pn	Mnbx	Mnby
X-X	-1.991	-0.218	-24.833	6.539	0.253
Y-Y	-4.028	-8.948	6.787	7.158	11.421
U-U	-3.352	-4.558	-13.699	8.033	5.807
V-V	-1.615	-6.544	22.537	0.757	8.369

Concrete : C60 Fcu = 60 Ec = 30000 Cover = 25
 Steel : GRADE 460 Fy = 460.0 Es = 200000

Assume : Asx = 3338 Asy = 4097 r = 2.478%
 Nu = 0.35*Fcu*(Ac-Asc)+0.67*Fy*Asc = 8435.153 > 4882.660 O.K.
 Vxmax = 293.764 Vs = 1.027 Vc = 5.311 O.K.
 Vymax = 105.544 Vs = 0.391 Vc = 2.425 O.K.

Load Case	P(kN)	Mx(kN-M)	Msx(kN-M)	My(kN-M)	Msy(kN-M)	Load Fraction
D+L+S(Top)	4804.068	468.006	468.006	115.440	227.428	1.505796350
D+L+S+Wy(Top)	4075.187	431.597	431.597	192.838	299.353	1.492378829
D+L+S-Wx(Top)	4082.027	372.970	372.970	93.360	199.945	1.778435889
D+L+S+Ny(Top)	4814.927	476.861	476.861	134.143	246.182	1.464839919
D+L+S-Nx(Top)	4843.801	462.983	462.983	114.990	227.158	1.503282188
D+S+Wy(Top)	4041.747	374.111	374.111	184.566	290.731	1.556737660
D-Wy(Bot)	3976.362	192.040	192.040	106.800	211.582	1.914862766
D+S+Ny(Top)	4000.484	323.218	323.218	87.958	193.376	1.860758107
D+S-Nx(Top)	4029.358	309.340	309.340	68.804	174.837	1.917595444

Reinforcement : Vert.Bar: 18Y25 Link: R8 @300 Sec. = 800x375



Check column splice location in X-X

Upper column:

B = 800 D = 375
fcu = 60 Cov = 25.0
Bars along B: 4Y25
Bars along D: 4Y25

Min N case: 1.0D-1.4S-1.4Wv

Nmin = 2285.128
Mc = = 888.949

Lower column:

B = 800 D = 375
fcu = 60 Cov = 25.0
Bars along B: 5Y25
Bars along D: 6Y25

Min N case: 1.0D-1.4S-1.4Wv

Nmin = 2758.031
Mc = = 1094.605

Beam (RHS): LGB10

B = 375 D = 700
fcu = 30 Cov = 25.0

Hogging moment capacity:

Compression zone:
3Y25

Tension zone:
Layer 1: 7Y25
Layer 2: 3Y25

Mb = = 1061.74

 $\Sigma Mc = 888.949 + 1094.605 = 1983.554$

$1.2 \times \Sigma Mb = 1061.74 \times 1.2 = 1274.088$

$\Sigma Mc \geq 1.2 \Sigma Mb$

Check column splice location in Y-Y

Upper column:

B = 800 D = 375
fcu = 60 Cov = 25.0
Bars along B: 4Y25
Bars along D: 4Y25

Max N case: 1.4D+1.6L+1.6Nx

Nmax = 3845.270
Mc = = 1082.455

Lower column:

B = 800 D = 375
fcu = 60 Cov = 25.0
Bars along B: 5Y25
Bars along D: 6Y25

Max N case: 1.4D+1.6L+1.6Nx

Nmax = 4849.396
Mc = = 1324.212

Beam (LHS): LGB16

B = 375 D = 700
fcu = 30 Cov = 25.0

Hogging moment capacity:

Compression zone:
2Y25

Tension zone:
3Y25

Mb = = 370.723

 $\Sigma Mc = 1082.455 + 1324.212 = 2406.667$

$1.2 \times \Sigma Mb = 370.723 \times 1.2 = 444.867$

**$\Sigma Mc \geq 1.2 \Sigma Mb$, Checking in both direction have been satisfied,
splice joint can be located just above floor level.**